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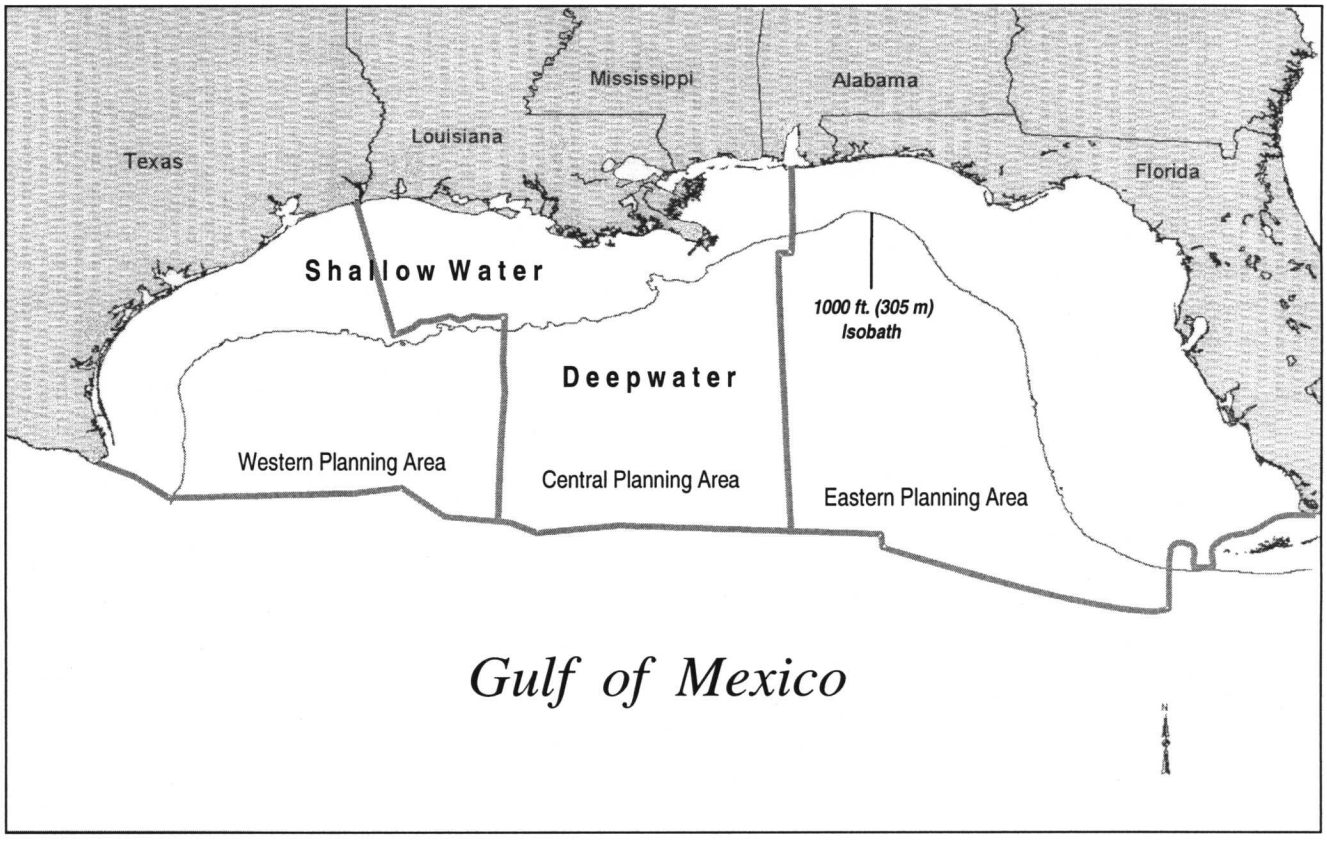
MMS 2001-012

Deepwater Program: Literature Review, Environmental Risks of Chemical Products Used in Gulf of Mexico Deepwater Oil and Gas Operations

Volume II: Appendices



MMS U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region

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Volume II: Appendices

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COVER

The cover shows the Gulf of Mexico Region, its three planning areas, and the 1,000 ft (305 m) isobath that separates shallow and deep water.

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Profile #12	Amides / Imidazolines
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Profile #18	Sodium Bisulfite
Profile #19	Barite
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Profile #21	Naphtha

APPENDIX A

CHEMICAL INVENTORIES

CHEMICAL INVENTORY:

DRILLING FLUID CHEMICALS

Drilling Fluid Chemicals: Codes, Functional Categories, Descriptions and Material Types Used

Code	Functional Categories	Description	Material Types Used
A	Alkalinity, pH control additives	Controls the alkalinity or acidity of a fluid. These factors are important in controlling mud properties.	Lime (CaO), caustic soda (NaOH), soda ash (Na_2CO_3), bicarbonate of soda ($NaHCO_3$), other common acids and bases
B	Bactericides	Prevents bacterial degradation of organic additives.	Aldehydes and others
CA	Calcium reducers	Used to counteract the effects of calcium from seawtaer, cement contamination, anhydrites and gypsum from the formation on mud properties.	Soda ash (Na2CO3), bicarbonate of soda (NaHCO3), caustic soda (NaOH) and certain polyphosphates
CO	Corrosion inhibitors	Controls corrosion acids and acid gases.	Amine- and phosphate-based products and other specially formulated chemicals
D	Defoamers	Used to reduce foaming action that affects mud properties.	Alcohol-based materials, silicones based materials, aluminum stearate, alkyl phosphates
E	Emulsifiers	Used to create a herterogeneous mixture of two insoluble liquids. They may be anionic (-), non-ionic (no charge), or cationic (+).	Detergents, soaps, organic acids and water based surfactants are used in water based muds
FR	Filtrate reducers	Used to decrease fluid (as opposed to whole mud) loss through the filter cake on the walls of the wellbore.	Bentonite clays, lignite, CMC (sodium carboxymethylcellulose), polyacrylate, and pregelatinized starch
FL	Flocculants	Used to increase viscosity, increase effectiveness of clay viscosifiers or to clarify or de-water low solids fluids.	Inorganic salts, hydrated lime, gypsum (calcium sulfate penta hydrate), soda ash (Na2CO3), bicarbonate of soda (NaHCO3), sodium tetraphosphate and acrylamide-based polymers
FO	Foaming agents	Used to create foam in water to permit air or gas drilling through water bearing formations.	See inventory for product examples.(e.g., ampli-foam, airfoam B)
LO	Lost circulation materials	Used to plug leaks in the wellbore and prevent the loss of whole drilling fluid to the formation.	Nut shells, natural fibrous materials, inorganic solids
LU	Lubricants	Used to reduce torque and drag on the drill string.	Oils, synthetic liquids, graphite, surfactants, glycols and glycerin
P	Pipe-freeing agents	Spotted at a particular point in a well to prevent the drill pipe from sticking to the formation.	Detergents, soaps, oils, surfactants and other chemicals
SH	Shale control inhibitors	Used to control shale hydration and subsequent well bore enlargement, heaving and caving of water sensitive shales.	Soluble calcium and potassium salts, other inorganic salts, and organic compounds
SU	Surface-active agents	Used to modify the interfacial tension between contacting surfaces. They may act as emulsifiers, de-emulsifiers, wetting agents, flocculants or deflocculants.	See inventory for product examples.(e.g., avabiowet, anco rope)
TE	Temperature stability agents	Used to increase the stability of dispersions, emulsions, and rheological properties at high temperatures.	Acrylic polymers, sulfonated polymers, copolymers, lignite, lignosulfonate and tannin-based additives
TH	Thinners, dispersants	Used as a deflocculanr to reduce the attraction (flocculation) of clay particles which causes high viscosity and gel strength. That is they balance the effect of viscosifiers and control mud viscosity and gel strength.	Tannins, various polyphosphates, lignite, lignosulfonates
V	Viscosifiers	Used to increase viscosity in muds.	Bentonite, attapulgite clays, CMC, and other polymers
W	Weighting materials	Used to increase the density of the mud and thereby enable it to control formation pressures.	Barite (barium sulfate), lead compounds, iron oxides, calcium carbonate and similar products

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
ACQUAFLOW	Low toxicity lubricant	LU	FR	-	-	Flowsa
ACTIVIS	Liquid HEC, environmentally friendly	V	LO	FR	-	TETRA
ADF-DEFOAMER	Liquid non-alcohol base defoamer	P	-	-	-	Advanced
ADF-FREE	Environmentally safe spotting fluid	P	LU	-	-	Advanced
ADF-LUBE	Polyol lubricant	LU	SH	FR	-	Advanced
ADOFOAM BF-1	Multipurpose foaming agent	FO	V	-	-	Nalco/Exxon
ADVANCED DEFOAMER	Non toxic offshore defoamer	D	-	-	-	Advanced
ADVANCED DRY LUBE	Lubricant for water-base fluids	LU	-	-	-	Advanced
ADVANCED DRY SPOT	Non toxic, water based spotting fluid	P	-	-	-	Advanced
ADVANCED GUMBO SLIDE	Non toxic gumbo/shale inhibitor	SH	FR	LU	-	Advanced
ADVANCED INHIBITOR	Special calcium lignosulfonate deflocculant	SH	TH	FR	-	Advanced
ADV INV ALKALINITY CONTROL	Invert alkalinity controller	A	-	-	-	Advanced
ADV INV EMULSIFIER #1	Primary emulsifier for invert systems	E	FR	TE	-	Advanced
ADV INV EMULSIFIER #2	Secondary emulsifier for invert systems	E	TE	-	-	Advanced
ADV INV EMULSIFIER #3	Special cold weather additive	E	-	-	-	Advanced
ADV INV FLC (A)	Asphalt based, invert fluid loss controller	FR	SH	-	-	Advanced
ADV INV FLC (L)	Lignite based invert fluid loss controller	FR	SH	-	-	Advanced
ADV INV HT VISCOSIFIER	High temp. hectorite invert vicosifier	V	-	-	-	Advanced
ADV INV SACKED SPOT	One sack spotting fluid	P	-	-	-	Advanced
ADV INV STD VISCOSIFIER	Bentonite based invert viscosifier	V	-	-	-	Advanced
ADV INV STOP LOSS	High temp. LCM	LO	-	-	-	Advanced
ADV INV THIN R	Dispersant/thinner for invert systems	TH	-	-	-	Advanced
ADVANCED N-80	Resin modified organophillic fiber	LO	FR	-	-	Advanced
ADVANCED OFFSHORE LUBE	Non toxic mud lubricant	LU	FR	SH	-	Advanced
ADVANCED P-110	Resin modified organophillic fiber	LO	FR	-	-	Advanced
ADVANCED SEAL	Surface modified cellulose fiber	LO	-	-	-	Advanced
ADVANCED SPOT	Non-toxic offshore spotting fluid	P	LU	-	-	Advanced
AGIPAK HV	Potassium PAC regular	V	SH	FR	-	AVA
AGIPAK HV	Potassium high visc. CMC	SH	FR	V	-	Lamberti
AGIPAK LV	Potassium PAC low viscosity	FR	SH	-	-	AVA
AGIPAK LV	Potassium low visc. CMC	SH	FR	-	-	Lamberti
AGIPAK LOVIS	Potassium low visc. polyanionic cellulose	SH	FR	-	-	Lamberti
AGIPAK REGULAR	Potassium polyanionic cellulose	SH	FR	-	-	Lamberti
AIRFOAM AP-50	Freshwater, mild saltwater foaming agent	FO	-	-	-	Aqua-Clear
AIRFOAM B	Foaming agent for saltwater	FO	-	-	-	Aqua-Clear
AIRFOAM HD	Oil foaming agent	FO	-	-	-	Aqua-Clear
AK-70	Asphaltic blend	SH	FR	-	-	Baroid
AKTAFLO-E	Wetting agent	E	-	-	-	Baroid
AKTAFLO-S	Non-ionic surfactant	TE	SU	SH	-	Baroid
ALCOMER 60	Medium M.W., low viscosity, dry polymeric shale stabilizer	SH	FL	-	-	Allied
ALCOMER 72 L	High temp. polyacrylate thinner	TH	-	-	-	Allied
ALCOMER 74 L	High temp., calcium tolerant thinner	TH	TE	FR	-	Allied
ALCOMER 75 L	High temp. thinner for high density mud	TH	TE	FR	-	Allied
ALCOMER 80 L	Liq. non-ionic polyacrylamide selective flocculant	FL	-	-	-	Allied
ALCOMER 90 L	50% active, liquid, total flocculant	FL	-	-	-	Allied
ALCOMER 110 RD	Dispersible dry polymeric shale stabilizer	SH	V	FL	-	Allied
ALCOMER 120 CC	High M.W., dry polymeric shale stabilizer/viscosifier	SH	V	FR	-	Allied
ALCOMER 120 L	50% active, high M.W., PHPA shale stabilizer/viscosifier	SH	V	FR	-	Allied
ALCOMER 123 L	High M.W., liquid emulsion PHPA	SH	V	FL	-	Allied
ALCOMER 175 L	Anionic friction reducer	LU	-	-	-	Allied
ALCOMER 242	High temp. filtrate reducer	FR	-	-	-	Allied
ALCOMER 274	Oil mud viscosifier	V	-	-	-	Allied
ALCOMER 507	Sodium polyacrylate fluid loss additive	FR	TH	TE	-	Allied
ALCOMER 1771	Bentonite extender	V	-	-	-	Allied
ALCOSORB AB 3C	Cross-link polyacrylamide absorbant	LO	-	-	-	Allied
ALDACIDE-G	Glutaraldehyde solution	B	-	-	-	Baroid
ALKA BUFF-HI	High reactivity alkaline earth oxide	A	FR	-	-	TBC-Brinadd
ALKA BUFF-LO	Low reactivity alkaline earth oxide	A	FR	-	-	TBC-Brinadd
ALL-IN-ONE-POLY	Drilling polymer	V	FR	-	-	Barclay
ALPHA 1000	Oil-base mud rheology modifier (liquid)	TH	-	-	-	Chandler
ALPHA 1001	Oil-base mud emulsifier (liquid)	E	-	-	-	Chandler
ALPHA 1002	Oil-base mud emulsifier (liquid)	E	-	-	-	Chandler
ALPHA 1003	Oil-base mud emulsifier (liquid)	E	-	-	-	Chandler
ALPHA 1003E	Oil-base mud emulsifier (liquid)	E	-	-	-	Chandler
ALPHA 1004E	Oil-base mud emulsifier/lubr. (liquid)	E	LU	-	-	Chandler
ALPHA 1006	Oil-base mud emulsifier (liquid)	E	-	-	-	Chandler
ALPHA 1007	Oil-base mud secondary emulsifier (liquid)	E	-	-	-	Chandler
ALPHA 1010E	Oil-base mud conditioner (liquid)	TH	-	-	-	Chandler
ALPHA 1110E	Oil-base mud conditioner (liquid)	TH	-	-	-	Chandler

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
ALPHA 1111	Oil-base mud wetter/thinner (liquid)	E	-	-	-	Chandler
ALPHA BORELUBE	Envr. safe lubricant	LU	P	-	-	Chandler
ALPHA CI	Corrosion inhibitor	CO	-	-	-	Chandler
ALPHA CIB	Corrosion inhibitor for brine fluids	CO	-	-	-	Chandler
ALPHA CMC HV	High viscosity CMC	V	FL	SH	-	Alpha-Chem
ALPHA CMC LV	Low viscosity CMC	FL	SH	E	-	Alpha-Chem
ALPHA CMC TECH HV	High viscosity, tech. grade CMC	V	FL	SH	-	Alpha-Chem
ALPHA CMC TECH LV	Low viscosity, tech. grade CMC	FL	SH	E	-	Alpha-Chem
ALPHA CMS	Fermentation resistant modified starch	FL	V	-	-	Chandler
ALPHA COAT CG	Cement grade gilsonite	SH	-	-	-	Chandler
ALPHA COAT DF	Drilling fluid grade gilsonite	SH	-	-	-	Chandler
ALPHA COAT DF+	Drilling fluid grade gilsonite, pre-treated for dispersibility	SH	-	-	-	Chandler
ALPHA CS	Cement spacer	SU	-	-	-	Chandler
ALPHA CW	Cuttings wash (liquid)	SU	-	-	-	Chandler
ALPHA D-1	Oil mud viscosifier (organoclay)	V	-	-	-	Chandler
ALPHA D-1 PLUS	Oil mud viscosifier (custom organoclay)	V	-	-	-	Chandler
ALPHA DD	Drilling detergent	SU	-	-	-	Chandler
ALPHA DF	Defoamer (liquid)	SU	-	-	-	Chandler
ALPHA DRIL	HTHP fluid loss control	FR	TE	-	-	Chandler
ALPHA DSA	Foaming agent	FO	-	-	-	Chandler
ALPHA FAD	Foaming agent (liquid)	FO	-	-	-	Chandler
ALPHA FLC	Fermentation resistant modified starch	FL	V	-	-	Chandler
ALPHA FLC PLUS	Modified polysaccharide	FR	-	-	-	Chandler
ALPHAMUL B	Base isomerized alpha olefin	LU	SH	TE	-	Anchor
ALPHAMUL B-2	Synthetic fluid cationic polymer	FR	SH	TE	-	Anchor
ALPHAMUL C	Synthetic fluid conditioner	TH	FR	SH	-	Anchor
ALPHAMUL F	Synthetic fluid loss control	FR	-	-	-	Anchor
ALPHAMUL FL	Synthetic polymeric fluid loss reducer	FR	-	-	-	Anchor
ALPHAMUL M	Synthetic fluid rheology modifier	TH	-	-	-	Anchor
ALPHAMUL P	Synthetic fluid primary emulsifier	E	-	-	-	Anchor
ALPHAMUL S	Synthetic fluid secondary emulsifier	E	-	-	-	Anchor
ALPHAMUL T	Synthetic fluid thinner/oil wetting agent	TH	-	-	-	Anchor
ALPHAMUL VIS	Synthetic fluid high temp. viscosifier	V	-	-	-	Anchor
ALPHAMUL VIS II	Synthetic fluid viscosifier	V	-	-	-	Anchor
ALPHA-PAC LV	Polyanionic cellulosic polymer	FL	SH	E	-	Alpha-Chem
ALPHA-PAC	Polyanionic cellulosic polymer	V	FL	SH	-	Alpha-Chem
ALPHA PAS	Fermentation resistant polyanionic starch	FL	-	-	-	Chandler
ALPHA PDI	Paraffin deposit inhibitor	SU	-	-	-	Chandler
ALPHA SEAL C	LCM, coarse	LO	-	-	-	Chandler
ALPHA SEAL F	LCM, fine	LO	-	-	-	Chandler
ALPHA SIE-D	PHPA (powder)	SH	FL	V	-	Chandler
ALPHA SIE-L	PHPA (liquid)	SH	FL	V	-	Chandler
ALPHA TC	Torque and drag control	LU	-	-	-	Chandler
ALPHA TEMP	Dispersant, thinner (liquid)	TH	TE	-	-	Chandler
ALPHA TEMP D	Dry thinner, dispersant	TH	TE	-	-	Chandler
ALPHA THERMA	Modified polysaccharide	FL	-	-	-	Chandler
ALPHA THIN D	Dispersant, thinner (dry)	TH	TE	-	-	Chandler
ALPHA THIN L	Dispersant, thinner (liquid)	TH	TE	-	-	Chandler
ALPHA VIS	Bentonite extender, flocculant	V	-	-	-	Chandler
ALPHA XAN PLUS	Polysaccharide blend	V	-	-	-	Chandler
ALUMINUM	Aluminum stearate powder	D	-	-	-	Most cos.
AMBAR	Barite meeting API specs	W	-	-	-	Ambar
AMCARB	Acid soluble calcium carbonate, sized	LO	W	-	-	Ambar
AMCIDE	Bacteriacide	B	-	-	-	Ambar
AMCOR	Corrosion inhibitor	CO	-	-	-	Ambar
AMDMD	Drilling mud detergent	SU	-	-	-	Ambar
AMFLUSH	Casing wash, surfactant	SU	-	-	-	Ambar
AMGEL	Bentonite	V	FI	-	-	Ambar
AMGEL NT	Bentonite, non treated	V	FI	-	-	Ambar
AMINE-CLEAN	Amine recovery cleaner, decolorizer, heat-stable amine salt remover	FL	SU	-	-	Polymer
AMLIG	Lignite	FI	TH	-	-	Ambar
AMLIG C	Causticized lignite	FI	TH	-	-	Ambar
AMLIG K	Potassium lignite	FI	TH	SH	-	Ambar
AMLIGNO	Chrome lignosulfonate	TH	FI	-	-	Ambar
AMLIGNO CF	Lignosulfonate, chrome free	TH	FI	-	-	Ambar
AMMONIUM	Oxygen scavenger	CO	-	-	-	Most cos.
AMMONIUM	Ammonium chloride salt crystals	W	SH	-	-	Most cos.
AMOXBAN 02	Oxygen scavenger	CO	-	-	-	Ambar
AMPAC LV	Polyanionic cellulose, low viscosity	FI	SH	-	-	Ambar
AMPAC R	Polyanionic cellulose	FI	SH	-	-	Ambar
AMPLI-FOAM	Foaming agent for mist & stiff foam drilling	FO	-	-	-	BH Inteq
AMPLUG	Ground walnut shells, various grades	LO	-	-	-	Ambar
AMSEAGEL	Attapulgite,saltwater gel	V	-	-	-	Ambar
AMSEAL	Elongated cellulose fiber	LO	FI	-	-	Ambar
AMSPOT	Environmentally safe spotting fluid	P	LU	-	-	Ambar
AMTROL	Liquid HEC	V	-	-	-	Ambar
AMVERT PE	Primary emulsifier for diesel muds	E	-	-	-	Ambar
AMVERT SE	Secondary emulsifier for diesel muds	E	SU	-	-	Ambar
AMVERT WA	Wetting agent for diesel muds	SU	E	-	-	Ambar
AMVIS	Dry HEC	V	-	-	-	Ambar
ANCO 2000 I	Polyglycol inhibitor blend	SH	FR	LU	-	Anchor
ANCO BAR	Barite	W	-	-	-	Anchor

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
ANCO CARB	Sized calcium carbonate	W	FR	-	-	Anchor
ANCO CMC HV	Carboxy methyl cellulose, high visc.	V	FR	-	-	Anchor
ANCO CMC LV	Carboxy methyl cellulose, low visc.	FR	-	-	-	Anchor
ANCO COAT WS	Water-soluble filming amine corr. inh.	CO	-	-	-	Anchor
ANCO DD	Drilling detergent	SU	FO	-	-	Anchor
ANCO DEFOAM A	Alcohol-based defoamer	D	-	-	-	Anchor
ANCO DEFOAM S	Silicone-based defoamer	D	-	-	-	Anchor
ANCO DMS	Drilling-mud surfactant	SU	TE	-	-	Anchor
ANCO FIBER	Fibrous cellulose bridging material	LO	FR	-	-	Anchor
ANCO FIBER OB	Blended fiber material	LO	-	-	-	Anchor
ANCO FREEPIPE	Emulsifier blend pipe-freeing agent	P	-	-	-	Anchor
ANCO GEL	API-grade bentonite	V	FR	-	-	Anchor
ANCO GEL PREMIUM	Wyoming bentonite (untreated)	V	FR	-	-	Anchor
ANCO HIB	Passivating corrosion inhibitor	CO	-	-	-	Anchor
ANCO HILUBE	Multi-purpose lubricant	LU	FR	-	-	Anchor
ANCO HIWEIGHT	Iron oxide weighting agent	W	-	-	-	Anchor
ANCO K 59	Potssium acetate	SH	TE	-	-	Anchor
ANCO LIFT	Mixed metal hydroxide complex	V	-	-	-	Anchor
ANCO LIG	Chrome-free lignite	TH	FR	-	-	Anchor
ANCO LIG C	Chrome lignite	TH	FR	-	-	Anchor
ANCO MEL	Potato starch	FR	V	-	-	Anchor
ANCO MEL C	Corn starch	FR	V	-	-	Anchor
ANCO MEL NF	Non-fermenting potato starch	FR	V	-	-	Anchor
ANCO MUL FA	Asphaltic filtration control agent	FR	SH	LU	-	Anchor
ANCO MUL FG	Gilsonite fluid loss control agent	FR	LU	TE	-	Anchor
ANCO MUL M	Rheology modifier for diesel/crude oil muds	V	-	-	-	Anchor
ANCO MUL OW	Oil wetting agent/emulsifier	E	SU	-	-	Anchor
ANCO MUL P	Primary emulsifier	E	-	-	-	Anchor
ANCO MUL S	Secondary emulsifier/oil wetter	E	FR	-	-	Anchor
ANCO MUL T	Thinner/degellant	TH	-	-	-	Anchor
ANCO MUL VIS	Organo-clay viscosifier	V	-	-	-	Anchor
ANCO MUL VIS H	Organophillic hectorite clay	V	FR	LU	-	Anchor
ANCO MUL VIS P	Sulfonated polystrene	V	-	-	-	Anchor
ANCO PAC LV	Pure PAC, low viscosity	FR	V	SH	-	Anchor
ANCO PAC R	Pure PAC, regular grade	V	VI	SH	-	Anchor
ANCO PHALT	Asphaltic stabilizer	SH	LU	TE	-	Anchor
ANCO PHPA	100% PHPA powder	SH	V	LU	-	Anchor
ANCO POL	Liquid PHPA blend	SH	V	LU	-	Anchor
ANCO POL 33	Polymeric viscosifier	V	SH	FR	-	Anchor
ANCO POL 100	Pure H.M.W. PHPA powder	SH	V	FR	-	Anchor
ANCO POL D	Pure L.M.W. PHPA	V	SH	FR	-	Anchor
ANCO ROPE	Rate of penetration enhancer	SU	-	-	-	Anchor
ANCO SACK SPOT	Oil based spotting fluid concentrate	P	-	-	-	Anchor
ANCO SAFE LUBE	Low toxicity lubricant	LU	-	-	-	Anchor
ANCO SAFE SPOT	Low toxicity hydrocarbon spotting fluid	LU	-	-	-	Anchor
ANCO SALT GEL	Attapulgite	V	FR	-	-	Anchor
ANCO SCAV	Stabilized liq. oxygen scavenger	CO	-	-	-	Anchor
ANCO SLIP	Graphite-based lubricant	LU	FR	-	-	Anchor
ANCO SPERSE	Calcium lignosulfonate	TH	FR	-	-	Anchor
ANCO SPERSE CF	Chrome free lignosulfonate	TH	FR	SH	-	Anchor
ANCO STF	Low pH deflocculant	TH	FR	-	-	Anchor
ANCO STF L	Anionic liquid deflocculant	TH	FR	SH	-	Anchor
ANCO TEMP	Blended polymer	TE	FR	SH	-	Anchor
ANCO THERM	Sulfonated polymer	TE	SH	FR	-	Anchor
ANCO THIN HTL	Liq. high temp. stable, polymeric thinner	TH	FR	TE	-	Anchor
ANCO THIN L	Liquid polymeric thinner	TH	FR	-	-	Anchor
ANCO WASH	Surfactant blend for rig cleaning	SU	-	-	-	Anchor
ANTIFOAM A	Conc. defoamer for water base muds	D	-	-	-	Dowell
ANTIFOAM-HD	Liquid antifoam treatment	FO	-	-	-	TBC-Brinadd
ANTIFOAM S	Conc. defoamer for all water base muds	D	-	-	-	Dowell
ANTISCALE AC/1	Phosphonate-based scale inhibitor	CA	-	-	-	Lamberti
ANTISCALE	Mixed scale inhibitor	-	-	-	-	Lamberti
ANTISCALE AC/58	Polymer-based scale inhibitor	-	-	-	-	Lamberti
ANTISOL FL 10	Ultra low visc. polyanionic cellulose	FL	SH	TH	-	Wolff
ANTISOL FL 30	Extr-low visc. polyanionic cellulose	FL	SH	E	-	Wolff
ANTISOL FL 100	Low visc. polyanionic cellulose	FL	SH	E	-	Wolff
ANTISOL FL 30,000	High visc. polyanionic cellulose	FL	V	SH	-	Wolff
AP 21	Acrylic polymer for fluid loss control	FR	TH	-	-	Dowell
AQUACEL	Purified CMC	FR	V	SH	-	Aqualon
AQUA-COL	Glycol for controlling sensitive shales & increased lubricity	SH	LU	-	-	BH Inteq
AQUA-COL B	Glycol for controlling sensitive shales	SH	LU	-	-	BH Inteq
AQUA-COL D	Glycol for increased dose levels & higher salinity sys.	SH	FR	-	-	BH Inteq
AQUA-COL S	Glycol for shale stabilization in saturated salts	SH	LU	-	-	BH Inteq
AQUA-COL XS	Glycol for shale control in higher temp. applications	SH	LU	-	-	BH Inteq
AQUACOR 861-OS	Oxyakylated cationic filming amine	CO	-	-	-	Aquaness
AQUACOR 863-WS	Nonionic/cationic corr. inh. blend	CO	-	-	-	Aquaness
AQUACOR 864-WS	Nonionic/cationic blended corr. inh.	CO	-	-	-	Aquaness
AQUACOR 866-WS	Cationic corrosion inhibitor	CO	-	-	-	Aquaness
AQUA-DRIL	Complex polymer	V	FR	-	-	Messina
AQUAFLO	Purified polyanionic cellulose	FR	V	SH	-	Aqualon
AQUAGEL	Wyoming bentonite	V	FR	-	-	Baroid
AQUAGEL GOLD SEAL	Untreated Wyoming bentonite	V	FR	-	-	Baroid

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
AQUA-MAGIC	Lubr.; diff. sticking in depleted zones	LU	FR	-	-	BH Inteq
AQUAMUL 854	Emusifier, wetting agent for diesel, paraffinic oil base fluids	E	FR	SU	-	Aquaness
AQUAMUL B2	Acetal base fluid	TH	LU	-	-	M-I
AQUAMUL C	Acetal wetting agent/conditioner	TH	FR	-	-	M-I
AQUAMUL F	Liquid fluid loss reducer	FR	-	-	-	M-I
AQUAMUL M	Low-end rheology modifier	V	-	-	-	M-I
AQUAMUL P	Primary emulsifier	E	-	-	-	M-I
AQUAMUL S	Secondary emulsifier	E	FR	-	-	M-I
AQUAMUL T	Thinner/de-gellant agent	TH	-	-	-	M-I
AQUAMUL VIS	Organophilic hectorite clay	V	FR	-	-	M-I
AQUAPAC-LV	Premium polyanionic cellulose	FR	SH	LU	-	Aqualon
AQUAPAC LV	Premium PAC polymer	FR	SH	LU	-	Baker
AQUAPAC-REGULAR	Premium polyanionic cellulose	FR	V	SH	-	Aqualon
AQUAPAC REGULAR	Premium PAC polymer	FR	V	SH	-	Baker
AQUAPLEX	High temp. synthetic fluid loss resin	FR	TE	TH	-	DX Oilfield
AQUATEC	Filming amine for brines	CO	-	-	-	BH Inteq
AQUATHINZ	Chrome free copolymer lignosulfonate	TH	-	-	-	BH Inteq
AQUA-VIS-36EX	Cationic bentonite extender for high fragile gel strengths	V	SH	-	-	Messina
ARDRIL CLA-BAN	Cationic polyamine shale stabilizer	SH	FL	-	-	Aquaness
ARDRIL DMD	Drilling mud detergent concentrate	SU	E	P	-	Aquaness
ARDRIL DME	Drilling mud emulsifier	E	SU	P	-	Aquaness
ARDRIL DMS	Aryl polyglycol ether drilling mud surfactant	SU	E	P	-	Aquaness
ARGISTAB	Fluid loss reducer in inhibited polymer system	-	-	-	-	BDC
ASP 700	High M.W. viscosifier/shale stabilizer	SH	FR	V	-	Nalco/Exxon
ASP 713	High M.W. viscosifier/shale stabilizer	SH	FR	V	-	Nalco/Exxon
ASPHASOL	Sulfonated organic blend	SH	FR	-	-	M-I
ASTEX	Modified sulfonated asphalt	SH	LU	FR	-	Telnite
ASTEX P	Modified asphalt, gilsonite and lignite compound	SH	LU	FR	-	Telnite
ASTEX S	Sulfonated asphalt derivative	SH	LU	-	-	Telnite
ATLOSOL	Drilling mud emulsifier concentrate	E	SU	SH	-	Aquaness
ATLOSOL S	Drilling mud emulsifier concentrate	E	SU	SH	-	Aquaness
AVA ACTIVATOR	Activator for AVATRASFOAM system	F	-	-	-	AVA
AVA AS-1	Scale inhibitor	CA	-	-	-	AVA
AVA K142	Potassium acetate brine	SH	W	-	-	AVA
AVAK157	Potassium formate brine	W	SH	-	-	AVA
AVA TR-DEFOAM	Foam agent for AVATRASFOAM system	FO	-	-	-	AVA
AVA TR-FOAM	Foam agent for AVATRASFOAM system	FO	E	-	-	AVA
AVABENTOIL HY	High yield organophilic bentonite	V	FR	-	-	AVA
AVABENTOIL SA	Low yield suspending agent	V	-	FR	-	AVA
AVABEX	Bentonite extender	V	-	-	-	AVA
AVABIOBENT	Low yield suspending agent	V	-	FR	-	AVA
AVABIOFIL HT	Synthetic polymer for fluid loss control	FR	E	SU	-	AVA
AVABIOIL	Ester based biodegradable oil	V	FR	-	-	AVA
AVABIOLUBE	Clay stabilizer-vegetable compound	SH	LU	FR	-	AVA
AVABIOMOD	Rheology modifier for AVABIOIL system	V	E	SU	-	AVA
AVABIOPRI	Primary emulsifier for low oil cutting retentions	E	FR	SU	-	AVA
AVABIOSEC	Secondary emulsifier for low oil cutting retentions	E	FR	TE	-	AVA
AVABIOTHIN	Thinner for AVABIOIL system	TH	FR	TE	-	AVA
AVABIOVIS	High yield suspending agent	V	FR	-	-	AVA
AVABIOWET	Wetting agent for AVABIOIL system	SU	E	-	-	AVA
AVACARB	Calcium carbonate	W	LO	-	-	AVA
AVACAT	Cationic polymer for AVACAT system	SH	FR	-	-	AVA
AVACELL LQD	Liquid hydroxyl ethyl cellulose	V	-	-	-	AVA
AVACELLOFANE	LCM cellophane flakes	LO	-	-	-	AVA
AVACID F/25	Liquid aromatic biocide	B	-	-	-	AVA
AVACLAYBLOCK	Organic and inorganic compound	SH	FR	-	-	AVA
AVADEFOAM	Alcohol based defoamer	D	-	-	-	AVA
AVADETER	Mud detergent	SU	LU	E	-	AVA
AVAENION	Non ionic emulsifier	E	SU	-	-	AVA
AVAFLUID G71	Modified Fe-Cr lignosulfonate	TH	FR	-	-	AVA
AVAFLUID NP	Chrome-free lignosulfonate	TH	FR	-	-	AVA
AVAFOAM S1	Foaming agent	FO	E	-	-	AVA
AVAFOAM S2	Salt resistant foaming agent	FO	E	-	-	AVA
AVAFREE 2	No oil free pipe and cake removal agent	P	SH	-	-	AVA
AVAFULFLOW	Blend of polymers and sized calcium carbonate	V	LO	FR	-	AVA
AVAGEL	Bentonite (bags on pallets, big bags 1 ton)	V	-	-	-	AVA
AVAGEL PLUS	Wyoming bentonite	V	-	-	-	AVA
AVAGILS W	Water dispersible gilsonite	SH	FR	LU	-	AVA
AVAGLYCO	Glycol-based lubricant	SH	LU	FR	-	AVA
AVAGRAPH	Graphite	LU	SH	FR	-	AVA
AVAGREENLUBE	Ester-based vegetable lubricant	LU	SH	FR	-	AVA
AVAGUM	Modified guar gum	V	-	-	-	AVA
AVALIG	Modified chrome lignite	TH	FR	TE	-	AVA
AVALIG-K	Modified potassium lignite	TH	FR	SH	-	AVA
AVA-LP-400H	Ultra low aromatic oil based	-	-	-	-	AVA
AVALTD 2000	Dispersant for lime muds and KLM system	TH	FR	CA	-	AVA
AVAMRK 80	Rock wettability modifier	SU	-	-	-	AVA
AVAPAC SX	Flitrate reducer for AVASILIX system	FR	SH	-	-	AVA
AVAPOLY HT	Polymer compound for high temperature	FR	TE	-	-	AVA
AVAPOLYTEMP	Pure grade filtrate reducer for Avafulflow	FR	TE	SH	-	AVA
AVAREX	Modified polymer for extreme high temperature	TE	FR	SH	-	AVA
AVASIL	Silicone based defoamer	D	-	-	-	AVA

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
AVASILIX 22	Base product for AVASILIX system	SH	-	-	-	AVA
AVASILIX 39	Base product for AVASILIX system	SH	-	-	-	AVA
AVASTAT 350	Antistatic agent for section milling	SU	-	-	-	AVA
AVATENSIO	Free pipe agent	P	-	-	-	AVA
AVATENSIO LT	Low toxicity free pipe agent	P	-	-	-	AVA
AVATEX	Sodium sulfonate asphalt	SH	FR	LU	-	AVA
AVATHIN	Acrylic acid grafed	TH	TE	FR	-	AVA
AVAVIS-MMH	Polymer for MMH System	V	SH	-	-	AVA
AVAWASH 500	Cake removal agent	SU	-	-	-	AVA
AVAWASH OBM	Casing cleaner for oil based mud	SU	-	-	-	AVA
AVAWASH WBM	Casing cleaner for water based mud	SU	-	-	-	AVA
AVAZR 5000	Chrome-free HPHT thinner	TH	TE	FR	-	AVA
AVOIL FC	Lignite based fluid loss reducer	FR	E	SU	-	AVA
AVOIL FR/HT	Asphalt based fluid loss reducer	FR	SU	-	-	AVA
AVOIL HSA	Temperature stability agent	TE	E	SU	-	AVA
AVOIL HSA-LT	Temperature stability agent	TE	E	SU	-	AVA
AVOIL PE/1	Primary emulsifier	E	FR	SU	-	AVA
AVOIL PE-LT	Primary emulsifier	E	FR	SU	-	AVA
AVOIL SE/1	Secondary emulsifier	E	FR	TE	-	AVA
AVOIL SE-LT	Secondary emulsifier	E	FR	TE	-	AVA
AVOIL TN	Thinner	TH	FR	TE	-	AVA
AVOIL TN-LT	Thinner	TH	FR	TE	-	AVA
AVOIL VS	Rheology modifier	V	E	SU	-	AVA
AVOIL VS-LT	Rheology modifier	V	E	SU	-	AVA
AVOIL WA	Wetting agent	SU	E	-	-	AVA
AVOIL WA-LT	Wetting agent	SU	E	-	-	AVA
B-5	Biocide	B	-	-	-	Osca
BACBAN III	Biocide	B	CO	-	-	M-I
BAKER-BEN	Wyoming bentonite, API grade	V	FR	-	-	Baker
BAKER-BEN HY	High yield, Wyo. bentonite	V	FR	-	-	Baker
BAKER-BEN NT	Untreated Wyo. bentonite, API grade	V	FR	-	-	Baker
BAKER-LUBE	Drilling lubricant	LU	P	-	-	Baker
BARABLOK	Powdered hydrocarbon resin	FR	SH	LU	-	Baroid
BARABLOK 400	Hi-temp powdered hydorcarbon resin	FR	SH	LU	-	Baroid
BARABRINE DEFOAM	Brine defoamer	D	-	-	-	Baroid
BARABRINE SI	Scale inhibitor for clear brines	CO	-	-	-	Baroid
BARABUF	pH buffer	A	FR	-	-	Baroid
BARACARB 5	Sized calcium carbonate	LO	W	FR	-	Baroid
BARACARB 25	Sized calcium carbonate	LO	W	FR	-	Baroid
BARACARB 50	Sized calcium cabonate	LO	W	FR	-	Baroid
BARACARB 150	Sized calcium carbonate	LO	W	FR	-	Baroid
BARACARB 600	Sized calcium carbonate	LO	W	FR	-	Baroid
BARACARB 2300	Sized calcium carbonate	LO	W	FR	-	Baroid
BARACAT	Cationic polymer solution	SH	FL	-	-	Baroid
BARACHEK HV	Cellulose derivative	V	FR	-	-	Baroid
BARACHEK LV	Cellulose derivative	FR	V	-	-	Baroid
BARACOR 44	Sulfide scavenger	CO	-	-	-	Baroid
BARACOR 95	Corrosion inhibitor	CO	A	-	-	Baroid
BARACOR 100	Corrosion inhibitor	CO	-	-	-	Baroid
BARACOR 129	Powdered corrosion inihibitor	CO	-	-	-	Baroid
BARACOR 450	High temp. corr. inh. for hi-density brines	CO	TE	-	-	Baroid
BARACOR 700	Corrosion/scale inhibitor	CO	-	-	-	Baroid
BARACOR 1635	Powdered oxygen corr. inhibitor	CO	-	-	-	Baroid
BARACTIVE	Polar activator	V	FR	-	-	Baroid
BARA-DEFOAM I	Defoamer	D	SU	-	-	Baroid
BARA-DEFOAM HP	Defoamer	D	-	-	-	Baroid
BARA-DEFOAM W 300	Defoamer	D	-	-	-	Baroid
BARAFILM	Filming amine	CO	-	-	-	Baroid
BARAFLOC	Flocculant	FL	-	-	-	Baroid
BARAFOAM	Foaming agent	FO	-	-	-	Baroid
BARAFOS	Sodium polyphosphate compound	TH	CA	A	-	Baroid
BARAKLEAN	Water soluble detergent	SU	-	-	-	Baroid
BARAKLEAN FL	Surfactant blend	FL	SU	-	-	Baroid
BARAKLEAN NS	Surfactant blend	FL	SU	-	-	Baroid
BARANEX	Modified lignin polymer	FR	TE	-	-	Baroid
BARAPAK	Oil soluble polymer	V	-	-	-	Baroid
BARAPLUG 20, 50, 6/300	Sized salt	LO	W	-	-	Baroid
BARARESIN	Sized oil-soluble bridging agent, F,M,C, G	LO	-	-	-	Baroid
BARARESIN-VIS	Oil mud viscosifier	V	-	-	-	Baroid
BARASCAV-D	Powdered oxygen scavenger	CO	-	-	-	Baroid
BARASCAV-L	Liquid oxygen scavenger	CO	-	-	-	Baroid
BARASCRUB	Terpene derived surfactant for well-bore clean-up	SU	-	-	-	Baroid
BARASIL-S	Sodium silicate solution	SH	-	-	-	Baroid
BARAVIS	Modified cellulose	V	FR	-	-	Baroid
BARAWEIGHT	Iron carbonate powder	W	-	-	-	Baroid
BARAZAN	Xanthan gum	V	-	-	-	Baroid
BARAZAN D F/COMPL'NS	Dispersion enhanced xanthan gum	V	-	-	-	Baroid
BARAZAN D F/DRILLING	Prem. dispersion enhanced xanthan susp.	V	-	-	-	Baroid

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
BARAZAN D PLUS F/COMPL'NS	Prem. dispersion enhanced xanthan susp.	V	-	-	-	Baroid
BARAZAN D PLUS F/DRILLING	Prem. dispersion enhanced xanthan susp.	V	-	-	-	Baroid
BARAZAN-L	Xanthan suspension	V	-	-	-	Baroid
BARAZAN PLUS F/COMPL'NS	Premium xanthan	V	-	-	-	Baroid
BARAZAN PLUS F/DRILLING	Premium xanthan	V	-	-	-	Baroid
BARBENT	Barite/bentonite pellets, high weight swelling pellets	W	-	-	-	BDC
BARCLAY A PHALT	Asphalt gilsonite	SH	FR	-	-	Barclay
BARCLAY BACSTAT	Biostat quarternary amine	CO	-	-	-	Barclay
BARCLAY'S BREAK	Broad spectrum defoamer blend of esters	D	-	-	-	Barclay
BARCLAY BRINECON	Polymer, fluid-loss agent, calcium stable	FR	-	-	-	Barclay
BARCLAY BRINEVIS	Brine viscosifier, compatible up to 19.2 ppg	V	FR	-	-	Barclay
BARCLAY CARB	Calcium carbonate	LO	-	-	-	Barclay
BARCLAY C SALTS	NaCl, KCl, CaCl2, etc. salts for workover/compl. fluids	W	-	-	-	Barclay
BARCLAY DRILLERS SALT	For saturated salt systems	W	-	-	-	Barclay
BARCLAY DWP	Polymer blend for workovers	V	LO	-	-	Barclay
BARCLAY EMA	Emulsifier & wetting agent	E	-	-	-	Barclay
BARCLAY FLU-CON	Polymer filtrate reducer, lubr.	FR	LU	TH	-	Barclay
BARCLAY GEL	Bentonite	V	-	-	-	Barclay
BARCLAY GEN-COR	Corr. inh. for CO2 & H2S	CO	-	-	-	Barclay
BARCLAY GUMBOSURF	Breaks gumbo clays	SH	FR	LU	-	Barclay
BARCLAY KLAYSTIM	Acidic cleaner for old wells	SU	TH	-	-	Barclay
BARCLAY KLAYSURF	Non-ionic, non-toxic, low-foaming surfactant, detergent	SU	LU	-	-	Barclay
BARCLAY LIG	Lignite	TH	FR	-	-	Barclay
BARCLAY OS	Oxygen extractor	CO	-	-	-	Barclay
BARCLAY OX	Hematite	W	-	-	-	Barclay
BARCLAY PLUG	Natural & synthetic graded LCM	LO	-	-	-	Barclay
BARCLAY S GEL	Attapulgite	V	-	-	-	Barclay
BARCLAY SHALE-CON	Polyacrylamide shale control agent	SH	V	FR	-	Barclay
BARCLAY TRICOR	Three-in-one packer fl., oxygen scav.	CO	B	-	-	Barclay
BARCLAY UNI-PAC	Polyanionic cellulose	FR	V	SH	-	Barclay
BARITE	Barium sulfate	W	-	-	-	Most cos.
BARODENSE	Hematite	W	-	-	-	Baroid
BAROFIBRE	Seepage-loss additive, regular & coarse	LO	-	-	-	Baroid
BAROID	Barite	W	-	-	-	Baroid
BAROID OIL ABSORBENT	Granular attapulgite	-	-	-	-	Baroid
BARO-LUBE	Surfactant blend	LU	-	-	-	Baroid
BARO-LUBE GOLD SEAL	Surfactant/lubricant blend	LU	-	-	-	Baroid
BARO-SEAL	Sized LCM blend	LO	-	-	-	Baroid
BARO-SPOT	Surfactant blend	P	-	-	-	Baroid
BARO-TROL	Shale stabilizer	SH	FL	-	-	Baroid
BARO-TROL PLUS	Enhanced shale stabilizer	SH	FL	-	-	Baroid
BCI 5003-S	Drilling lubricant for improved sliding	LU	P	-	-	Baker
BDBUF54	Drill-in fluid buffer	A	-	-	-	Osca
BDBUF115	Drill-in fluid buffer	A	-	-	-	Osca
BDFL44	Fluid loss control starch	FR	-	-	-	Osca
BDFL70	Fluid loss control starch	FR	-	-	-	Osca
BDVIS114	Viscosifier	V	-	-	-	Osca
BDVIS129	Viscosifier	V	FR	-	-	Osca
BDVIS130	Viscosifier	V	FR	-	-	Osca
BEN-EX	Bentonite extender & seletive flocculant	X	FL	-	-	Kelco
BENTONE 34	Organo bentonite, viscosifier	V	-	-	-	Rheox
BENTONE 38	Organo hectorite high temp. viscosifier	V	-	-	-	Rheox
BENTONE 128	Easy-dispersing organo bentonite viscosifier	V	-	-	-	Rheox
BENTONE 150	Rapid, high yielding organo bentonite viscosifier	V	-	-	-	Rheox
BENTONE 155	High yielding mud plant organo bentonite viscosifier	V	-	-	-	Rheox
BENTONE 160	Vegetable oil-based fluid viscosifier	V	-	-	-	Rheox
BENTONE 910	Economy organo bentonite viscosifier	V	-	-	-	Rheox
BENTONE 920	Economy, easy-dispersing organo bentonite viscosifier	V	-	-	-	Rheox
BENTONE 990	Amino-attapulgite suspending agent	V	-	-	-	Rheox
BENTONE SD-1	Super-dispersing organo bentonite viscosifier	V	-	-	-	Rheox
BENTONE SD-3	Super-dispersing high temp. organo hectorite viscosifier	V	-	-	-	Rheox
BENTONITE	Wyoming bentonite	V	FR	-	-	Most cos.
BENTONITE EXTENDER	Bentonite ext. & selective flocculant	FL	-	-	-	Baker

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
BENTONITE EXTENDER	Bentonite ext. & selective flocculant	FL	V	-	-	General
BICARBONATE OF SODA	Sodium bicarbonate	CA	A	-	-	Most cos.
BIO 3	High molecular filming amine	B	CA	-	-	Deep South
BIO CHECK	Modified starch	FR	-	-	-	Flowsa
BIOCLEAR 1000	Biocide for mud/water systems	-	-	-	-	Clearwater
BIO-DRILL	Anti-bit balling additive and lubr.	SH	LU	-	-	BH Inteq
BIOFLOW	Liquid biocide	B	-	-	-	Flowsa
BIOLAM XA	Biopolymer derivative polymeric viscosifier	V	FR	-	-	Lamberti
BIOLAM XG	Xanthan derivative polymeric viscosifier	V	FR	-	-	Lamberti
BIOLAM XT	Biopolymer derivative polymeric viscosifier	V	FR	-	-	Lamberti
BIO-LOSE	Modified polysaccharide	FR	-	-	-	BH Inteq
BIO-PAQ	Water soluble, organic polymer	FR	V	-	-	BH Inteq
BIOPOLY-E	Xanthan biopolymer	V	FR	E	-	EMEC
BIO SOLVE	Non terpene displacement	SU	-	-	-	Deep South
BIO-SPOT	Non-hydr. low-toxic spotting fluid	P	-	-	-	BH Inteq
BIO-SPOT II	Non-hydr. low-toxic spotting fluid	P	-	-	-	BH Inteq
BIOVIS	Xanthan biopolymer	V	FR	-	-	Messina
BIOVIS	Temp.stable biopolymer	V	FR	LU	-	SKW
BIOVIS-D	Dispersible xanthan biopolymer	V	-	-	-	Messina
BIOVIS-HT	High temp. biopolymer	V	-	-	-	Messina
BIOZAN	Welan gum	V	-	-	-	Kelco
BIT LUBE	Lubricant	LU	-	-	-	M-I
BLACK FREE	Solid spotting agent	P	-	-	-	Flowsa
BLACK LUBE	Oil-based lubricant	LU	-	-	-	Flowsa
BLACK MAGIC	Oil-based spotting fluid	P	-	-	-	BH Inteq
BLACK MAGIC CLEAN	Envr.-friendly spotting fluid	P	-	-	-	BH Inteq
BLACK MAGIC PHALT FREE	Environmentally safe spotting fluid	P	-	-	-	BH Inteq
BLACK MAGIC SFT	Oil-based spotting fluid concentrate	P	-	-	-	BH Inteq
BLACKNITE	Multi-particle gilsonite liquid dispersion	SH	FR	LU	-	Sun
BLEN 2000	Synthetic lubricant	LU	SH	-	-	BCI
BLEN-CARB	Calcium carbonate	LO	P	-	-	BCI
BLEN-FYBER	High strength micronized cellulose fiber to prevent/cure seepage loss	LO	P	-	-	BCI
BLEN-HEC L	Liquid HEC	V	LO	FR	-	BCI
BLEN-NO FOAM	Defoamer	D	-	-	-	BCI
BLEN-PLEX	Multivalent ion, polymer crosslinking agent	LO	A	-	-	BCI
BLEN-PLUG	Mixed coarse cellulose fibers	LO	-	-	-	BCI
BLEN-SEAL	Preabsorbed, high-strength micronized cellulose fibers with low toxicity l	LO	P	-	-	BCI
BLEN-SQUEEZE	Cellulose LCM w/cross-linkable polymer	LO	V	-	-	BCI
BM-NITE	Chrome lignite	FR	SH	TH	-	Telnite
BM-NITE-K	Potassium chrome lignite	FR	SH	TH	-	Telnite
BOHRAMYL BR	Mod. potato starch polymer; non-fermenting	FR	SH	-	-	Avebe
BORE CHECK	Shale & gumbo control	SH	FR	TH	-	Global
BORECLEAN	Clay stabilizer	-	-	-	-	TBC-Brinadd
BORE MASTER	Modified lignosulfonic Resin	FR	SH	TE	-	Setac
BORE-PLATE	Water dispersible, envr. safe shale-control agent	SH	LU	FR	-	Am. Gilsonite
BORE-PLATE	Water-dispersible gilsonite blend	SH	LU	FR	-	Kelco
BORE SEAL COARSE	Sized cellulosic fibers for fluid-loss control	LO	SU	LU	-	Global
BORE SEAL FINE	Sized cellulosic fibers for seepage-loss control	LO	SH	LU	-	Global
BORE-TROL	Shale stabilizer/mud conditioner	SH	FR	LU	-	Messina
BORE-TROL-II	Potassium enhanced Bore-Trol	SH	FR	LU	-	Messina
BP 83 HF	Low toxicity base oil (high flash)	-	-	-	-	BP
BRANDEXX	Sealing agent for pay zone loss circulation	LO	FR	-	-	AVA
BREAKE C	Alkaline earth peroxide	-	-	-	-	TBC-Brinadd
BRIDGE SAL PLUS	Sized salt and polymer blend	W	LO	V	-	AVA
BRIDGECARB-ULTRA	Polymer & sized calcium carbonate	LO	V	FR	-	TBC-Brinadd
BRIDGECARB-ULTRA SF	Polymer & sized calcium carbonate	LO	V	FR	-	TBC-Brinadd
BRIDGESAL	Polymer and sized salt	FR	LO	V	-	Osca
BRIDGESAL-ULTRA	Polymer & sized salt blend	FL	LO	V	-	TBC-Brinadd
BRIDGESAL-ULTRA SF	Polymer & sized salt blend	FL	LO	V	-	TBC-Brinadd
BRINE CON LQ	Brine fluid-loss control	FR	-	-	-	Barclay
BRINE COR	Brine corrosion inhibitor	CO	-	-	-	Barclay
BRINEDRIL	Brine-based drill-in fluid from 9-18 ppg	W	SH	FR	-	Osca
BRINE-PAC	Corr. inh. for solids free fluids	CO	-	-	-	BH Inteq
BRINE SEAL	Brine filtrate control agent	FR	-	-	-	Telnite
BRINESHIELD	Brine additive to protect human tissue	-	-	-	-	Integrity
BRINE VIS	Hydroxyethyle cellulose	V	FR	-	-	EMEC
BRINE-VIS-XHT	High temp. brine viscosifier	V	-	-	-	Messina
BRINEWATE-A	Sized salt blend	W	LO	-	-	AVA
BRINEWATE ULTRA	Sized salt weighting material	W	LO	-	-	TBC-Brinadd
BRINEWATE ULTRA SF	Sized salt weighting material	W	LO	-	-	TBC-Brinadd
BRINHIB 100	Organic packer fluid treatment	CO	B	-	-	Filco
BRINHIB 250	Inorganic, low temp., brine corrosion inhibitor	CO	B	-	-	Filco

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
BRINHIB HTI	Inorganic, high temp., brine corrosion inhibitor	CO	B	-	-	Filco
BROMA BOOST	Viscosity stabilizer	TE	-	-	-	TBC-Brinadd
BROMACARB Z	Specially sized zinc carbonate	FR	W	LO	-	TBC-Brinadd
BROMA FLA	Non-ionic derivatized starch	FR	V	-	-	TBC-Brinadd
BROMATROL	Non-ionic derivatized starch	FR	V	-	-	TBC-Brinadd
BROMATROL L	Liquid Non-ionic derivatized starch	FR	V	-	-	TBC-Brinadd
BROMATROL T	Non-ionic derivatized starch	FR	V	-	-	TBC-Brinadd
BROMIMUL	Brine-in-oil emulsifier	E	-	-	-	Baroid
BROMI-VIS	Pre-dispersed polymer suspension	V	-	-	-	Baroid
BT-93	Chrome free mod. lignite thinner	TH	TE	FR	-	General
BTF-5M	Fresh water foaming agent	FO	-	-	-	Clearwater
BTF-311	All purpose foaming agent	FO	-	-	-	Clearwater
BTF-418	Oil-tolerant foaming agent	FO	-	-	-	Clearwater
BTF COR-CLEAR AF	Corr. inh. for air drilling	CO	-	-	-	Clearwater
BTF DIONIC-5M	Fresh water foaming agent w/shale-control polymer	FO	SH	FL	-	Clearwater
BTF DIONIC-311	All purpose foaming agent w/shale-control polymer	FO	SH	FL	-	Clearwater
BTF FOAM CLEAR HC	Oil based defoamer	D	-	-	-	Clearwater
BTF FOAM CLEAR SI	Silicone based defoamer	D	-	-	-	Clearwater
BTF-NF	Mist foamer for low pressure	-	-	-	-	Clearwater
BUBBLE BUSTER	Low toxicity defoamer	D	-	-	-	M-I
BUFFER PLUS	Magnesium oxide	A	-	-	-	Drilpro
BWRHEODRILLD	Xanthan Gum	V	-	-	-	BW Group
BW BAR	Barite	W	-	-	-	BW Group
BW BIOCIDE	Bactericide	B	CO	-	-	BW Group
BW BIOLUBE	Ester-based lubricant	LU	-	-	-	BW Group
BW BRINE CLEAN	High density compl. fluid cleaner	SU	-	-	-	BW Group
BW CARB	Graded calcium carbonate	W	FR	-	-	BW Group
BW CHROME-FREE	Dechromed lignosulfonate	TH	FR	-	-	BW Group
BW DEFOAMER	Silicone/alcohol based defoamer	D	-	-	-	BW Group
BW DEMULSIFIER	High density compl. fluid demulsifier	SU	-	-	-	BW Group
BW ECO EMUL	Synthetic oil mud emulsifier	E	-	-	-	BW Group
BW ECO EMUL 50	Synthetic oil mud emulsifier	E	-	-	-	BW Group
BW ECO EMUL FL	Synthetic oil mud emulsifier	E	FL	-	-	BW Group
BW ECO EMUL TS	Synthetic oil mud emulsifier	E	TE	-	-	BW Group
BW ECOMUL	Synthetic oil based mud	-	-	-	-	BW Group
BW ECOSOL	Synthetic oil mud solvent	-	-	-	-	BW Group
BW ECO TECH	Synthetic oil mud fluid loss reducer	FR	-	-	-	BW Group
BW EMUL HIVIS	Gelling agent for invert emulsions	V	FR	-	-	BW Group
BW EMUL LIFT A	Surface active agent for rheology modification	V	SU	-	-	BW Group
BW EMUL LIG HT	Amine treated lignite	FR	-	-	-	BW Group
BW EMUL LIG HTS	Premium amine treated lignite	FR	-	-	-	BW Group
BW EMUL THIN S	Oil mud thinning agent	TH	-	-	-	BW Group
BW EMUL TREAT	Oil wetting agent	SU	TH	-	-	BW Group
BW EMUL VIS	Gelling agent for invert emulsions	V	-	-	-	BW Group
BW ENVIROCLEAN	Biodegradable surfactant blend	SU	-	-	-	BW Group
BW ENVIROCOR	Environmentally friendly corrosion inhibitor	CO	-	-	-	BW Group
BW ENVIROFLOC	Vegetable fatty acid derivatives	FL	SU	-	-	BW Group
BW ENVIROSOLV	Ethoxylated solvent blend	SU	-	-	-	BW Group
BW ENVIROWASH 2	Biodegradable nonionic surfactant blend	SU	-	-	-	BW Group
BW ESTER	Ester oil mud solvent	-	-	-	-	BW Group
BW ESTERKLEEN	Ester oil based mud	-	-	-	-	BW Group
BW EUROGEL	Calcium montmorillonite	V	FR	-	-	BW Group
BW GEL	Wyoming bentonite	V	FR	-	-	BW Group
BW GLYCOL	Polyacrylene glycol co-polymer	SH	LU	-	-	BW Group
BW HI-CELL	High M.W. sodium CMC	V	FR	-	-	BW Group
BW HI-SPERSE	SSMA copolymer	-	TE	-	-	BW Group
BW HI-THERM	Temperature stable lignin polymer	FR	TH	-	-	BW Group
BW HTS 350	High temp. stabilizer for water muds	TE	-	-	-	BW Group
BW INVERKLEEN	Low aromatic oil mud system	-	-	-	-	BW Group
BW KLEEMUL	Emulsifier for low-toxicity oil mud	E	FR	-	-	BW Group
BW KLEEMUL 50	Emulsifier for low-toxicity oil mud	E	FR	-	-	BW Group
BW KLEEMUL FL	High temp. fluid loss additive	FR	E	-	-	BW Group
BW KLEEMUL TS	High temp. emulsifier	E	FR	TE	-	BW Group
BW LO-CELL	Medium M.W. sodium CMC	FR	-	-	-	BW Group
BW LUBRA BEADS	Polymeric beads	LU	-	-	-	BW Group
BW METACARB	Graded calcium carbonate	LO	W	-	-	BW Group
BW PIPE-LOOSE	Surfactant for stuck pipe	P	SU	-	-	BW Group
BW PLUG	Ground walnut shells	LO	-	-	-	BW Group
BW POLSEAL K	Potassium/sodium silicate fluid	SU	CA	CO	-	BW Group
BW POLYLUBE	Lubr. for silicate muds	LU	-	-	-	BW Group
BW POLYSEAL	Sodium silicate-base fluid	SH	CA	CO	-	BW Group
BW RHEOCAP S	Polymeric shale encapsulator	SH	-	-	-	BW Group
BW RHEOCOAT	Modified starch	FR	-	-	-	BW Group
BW RHEOLIG CC	Causticized lignite	TH	FR	-	-	BW Group
BW RHEOPOL R	Polyanionic cellulosic	V	FR	-	-	BW Group
BW RHEOPOL SL	Polyanionic cellulosic	FR	-	-	-	BW Group

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
BW RHEOSPERSE HT	Polyacrylate dispersant	TH	FR	-	-	BW Group
BW RHEOVIS	Viscosifying starch	V	FR	-	-	BW Group
BW SCALEREAT C	Scale inhibitor	CO	CA	SU	-	BW Group
BW SCALETREAT S	Scale inhibitor	CO	SU	-	-	BW Group
BW SPUD MUD	Guar gum	V	-	-	-	BW Group
BW SURE LIFT	Brine cleaner for high density compl. fluids	SU	-	-	-	BW Group
BW ULTRA VIS	Gelling agent for invert emulsions	V	-	-	-	BW Group
BXR	Borehole stabilizer	SH	LU	FR	-	Baroid
BXR-L	Borehole stabilizer suspension	SH	FR	SU	-	Baroid
C 70-1005	Deflocculant	TH	SH	FL	-	Polacryl
CALCIUM BROMIDE	CaBr2	W	SH	-	-	Most cos.
CALCIUM CARBONATE	-	LO	-	-	-	Most cos.
CALCIUM CHLORIDE	Calcium chloride, powdered, granular or flaked	W	SH	-	-	Most cos.
CALCIUM NITRATE	Calcium nitrate brine & dry calcium nitrate	W	SH	-	-	Hydro
CALCIUM SULFATE	Industrial-grade gypsum	SH	TE	-	-	Baker
CALOTEMP	Lignite-based filtrate reducer for high temp. muds	FR	-	-	-	Dowell
CANE FIBER	Shredded fiber blend	LO	-	-	-	M-I
CAN-SEAL	Proprietary seepage loss material	LO	-	-	-	DX Oilfield
CAN-THIN	Chrome free thinner	TH	FR	TE	-	DX Oilfield
CARBO BEADS	Small carbon spheres	LO	SU	LU	-	Global
CARBOCEL AG/15	Bentonite extender, modifier	V	-	-	-	Lamberti
CARBOCEL AG/EHV	Bentonite extender, modifier	V	-	-	-	Lamberti
CARBOCEL EHV	Tech. grade, extremely high visc. CMC OCMA/API	FR	V	-	-	Lamberti
CARBOCEL EHV-P	Pure grade, extremely high visc. CMC	FR	V	-	-	Lamberti
CARBOCEL EHV-S	Semipure grade, extra high visc. CMC	FR	V	-	-	Lamberti
CARBOCEL HV	Tech. grade, high visc. CMC	FR	V	-	-	Lamberti
CARBOCEL HV-P	Pure grade, high visc. CMC	FR	V	-	-	Lamberti
CARBOCEL LV	Tech. grade, low visc. CMC OCMA/API	FR	-	-	-	Lamberti
CARBOCEL LV-P	Pure grade, low visc. CMC	FR	-	-	-	Lamberti
CARBOCEL LV-S	Semi-pure grade, low visc. CMC	FR	-	-	-	Lamberti
CARBO CORE	Emulsifier for low water content native state coring fluids	E	-	-	-	BH Inteq
CARBO-GEL	Organophilic hectorite viscosifier for suspension of solids in oil muds	V	FR	-	-	BH Inteq
CARBO-GEL 2	Economic organoclay viscosifier	V	-	-	-	BH Inteq
CARBO-GEL N	Organoclay viscosifier for low temp. applications	V	-	-	-	BH Inteq
CARBOLOSS	LCM calcium carbonate sized	LO	-	-	-	Flowsa
CARBO-MUL HT	High temp. oil mud emulsifier & wetting agent	E	SU	TE	-	BH Inteq
CARBONITE	Lignite	TH	FR	-	-	Global
CARBONITE CA	Caustic lignite	TH	FR	-	-	Global
CARBONITE K	Potassium lignite	TH	FR	-	-	Global
CARBONOX	Lignite material	TH	FR	E	-	Baroid
CARBOSAN 135/TR	General purpose biocide	B	-	-	-	Lamberti
CARBO-SEAL	Coarsely ground, non-asphaltic material for seepage and LC	LO	FR	-	-	BH Inteq
CARBO-TEC	High temp. emulsifier for oil base muds and envr. sensitive areas	E	FR	TE	-	BH Inteq
CARBO-TROL	Filtration control agent	FR	-	-	-	BH Inteq
CARBO-TROL A-9	Non-asphaltic filtration control agent	FR	-	-	-	BH Inteq
CARBO-TROL HT	Non-asphaltic high temp. filtration control additive	FR	-	-	-	BH Inteq
CARBO-VIS	Organophilic clay viscosifier for solids suspension	V	-	-	-	BH Inteq
CARBWATE-ULTRA	Sized calcium carbonates	W	LO	-	-	TBC-Brinadd
CARBWATE-ULTRA-COARSE	Sized calcium carbonates	W	LO	-	-	TBC-Brinadd
CARBWATE-ULTRA SF	Sized calcium carbonate	W	LO	-	-	TBC-Brinadd
CASED-HOLE	Specifically sized micronized polycrystalline-asphaltite material	LO	SH	FR	-	Liquid Csg.
CAT-300	Modified organic polymer	FR	-	-	-	Baroid
CAT-GEL	Sized kaolinite	FR	-	-	-	Baroid
CAT-HI	Non-ionic modified cellulose	FR	V	-	-	Baroid
CAT-LO	Non-ionic modified cellulose	FR	-	-	-	Baroid
CAT-VIS	Welan gum	V	-	-	-	Baroid
CAUSTIC LIGNITE	Causticized North Dakota lignite	TH	FR	TE	-	Most cos.
CAUSTIC POTASH	Potassium hydroxide	A	-	-	-	Most cos.
CAUSTIC SODA	Sodium hydroxide	A	B	CO	-	Most cos.
CAUSTILIG	Causticized lignite	TH	FR	TE	-	M-I
CAVI-SEAL-AS	Acid soluble HT LCM	LO	FR	-	-	Messina
CB-250	Filming amine corr. inhibitor	CO	-	-	-	Osca
CC-16	Causticized lignite	TH	FR	E	-	Baroid
CC-50	Calcium carbonate, coarse	LO	W	-	-	Baker
CC-200	Calcium carbonate, medium	LO	W	-	-	Baker
CC-300	Calcium carbonate, fine	LO	W	-	-	Baker
CC-400	Calcium carbonate, extremely fine	W	LO	FR	-	Baker
CEBOBAR	Barite	W	-	-	-	Cebo
CEBODOL	Dolomite	W	-	-	-	Cebo
CEBOGEL	European bentonite	V	FR	-	-	Cebo
CEBO P-H 63	Hematite	W	-	-	-	Cebo
CEBOSWDC	Saltwater drilling clay	V	FR	-	-	Cebo

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
CEBOWYOGEL	Wyoming bentonite	V	FR	-	-	Cebo
CEDAR FIBER	Shredded cedar	LO	-	-	-	Most cos.
CELFLO R	Semi-pure polyanionic cellulose, reg. type	V	FL	SH	-	Metsa
CELFLO SL	Semi-pure anionic cellulose, superlow type	FL	TH	-	-	Metsa
CELLEX HV	Sodium CMC	FR	V	-	-	Baroid
CELLEX REGULAR	Sodium CMC	FR	V	-	-	Baroid
CELLOPHANE	Shredded and sized cellophane	LO	-	-	-	Most cos.
CELPAC	Tech. grade PAC	FR	V	SH	-	Messina
CELPAC-R	Tech. grade PAC	FL	V	SH	-	Messina
CELPAK-SL	Tech. grade PAC	FL	V	SH	-	Messina
CELPOL ESL	Polyanionic cellulose, extreme superlow vis.	FR	FL	TH	-	Metsa
CELPOL R	Polyanionic cellulose, reg. GRADE	V	SH	FR	-	Metsa
CELPOL RX	Premium-grade polyanionic cellulose, reg. extra	V	SH	FR	-	Metsa
CELPOL SL	Polyanionic cellulose, superlow grade	FL	SH	TH	-	Metsa
CELPOL SLX	Premium-grade polyanionic cellulose, superlow extra	FL	SH	TH	-	Metsa
CELTROL-II	Tech. grade CMC	FL	SH	-	-	Messina
CELTROL-LV	Organic polymer	FR	SH	-	-	Messina
CELTROL-SPI	Tech. grade CMC	FL	SH	-	-	Messina
CEPAC LOVIS	Low visc. cost effective polyanionic cellulose	FR	SH	-	-	Lamberti
CEPAC REGULAR	High visc. cost effective polyanionic cellulose	FR	SH	V	-	Lamberti
CESCO BRINE LUBE	Lubricant for "drill-in" fluids	LU	-	-	-	Cesco
CESCO CG	Pre-treated gilsonite	SH	LU	FR	-	Cesco
CESCO COUPLER	Surfactant wetting agent for gilsonite and asphalts	SU	SH	LU	-	Cesco
CESCO DEFOAM	Water-based defoamer	D	-	-	-	Cesco
CESCO PACKER MATE	Packer fluid inhibitor for low density brines	CO	-	-	-	Cesco
CESCO PORE	Acid soluble, fiberous LCM	LO	FR	-	-	Cesco
CESCO PORE SEAL	Cellulosic, fiberous LCM	LO	FR	-	-	Cesco
CESCO SACK SPOT	Spotting fluid (envr. safe)	P	-	-	-	Cesco
CESCO SPOT A-25	Water-based spotting fluid additive	P	-	-	-	Cesco
CESCO SURFACE SWEEP	Acid soluble, fiberous LCM for use in sweeps	LO	FR	-	-	Cesco
CESCO WBL 1600	Water based lubricant	LU	SH	SU	-	Cesco
CESIUM FORMATE	Cesium formate	W	-	-	-	AVA
CESIUM ACETATE	Cesium acetate	W	TE	SH	-	Cabot
CESIUM FORMATE	Cesium formate	W	TE	SH	-	Cabot
CFL-II	Chrome-free lignosulfonate	TH	TE	FR	-	DX Oilfield
CFL-II	Lignosulfonate, chrome-free	TH	FR	SH	-	Baker
CFR	Catalyzed friction reducer	LU	FR	-	-	GEO
CHEK-LOSS	Seepage loss control, diff. sticking preventative	LO	-	-	-	BH Inteq
CHEK-LOSS COARSE	Fibrous LCM	LO	-	-	-	BH Inteq
CHELATED ZINC	Hydrogen sulfide gas remover	B	-	-	-	Baker
CHEMSPERSE	Tannin based thinner	TH	FI	-	-	Ambar
CHEMTEMP	Sulfonated high temp. polymeric thinner	TH	TE	FI	-	Ambar
CHEMTHIN D	Dry SPA thinner	TH	SH	-	-	Ambar
CHEMTHIN L	Liquid SPA thinner	TH	SH	-	-	Ambar
CHEMTONE X	HTHP fluid loss reducer & shale stabilizer	SH	LU	TE	-	Ambar
CHEMTROL X	Selected polymer blend for high temp. stabilization of filtration properties	FR	TE	TH	-	BH Inteq
CHEMVIS D	Dry PHPA	SH	V	LU	-	Ambar
CHEMVIS L	30% Liquid PHPA	SH	V	LU	-	Ambar
CHEMVIS L PLUS	50% Liquid PHPA	SH	V	LU	-	Ambar
CHEM-X II	Xanthan Gum	V	-	-	-	Ambar
CHROME-FREE II	Lime-based mud thinner	TH	FR	-	-	BH Inteq
CHROME LIGNITE	Chrome lignite	TE	TH	FR	-	Most cos.
CHROMEX	Modified lignite	TE	TH	FR	-	M-I
CHROME LIGNOSULFONATE	Chrome lignosulfonate	TH	FR	E	-	Most cos.
CHROME FREE LIGNOSULFONATE	Chrome-free lignosulfonate	TH	FR	-	-	Most cos.
CI-323	Corr. inhibitor-filming amine	CO	-	-	-	Baker
CIB	Filming amine	CO	-	-	-	TBC-Brinadd
CIDE-COR	Corrosion inhibitor/biocide	CO	B	-	-	Messina
CIDE-COR-PLUS	Corrosion inhibitor/biocide	CO	B	-	-	Messina
CITRIC ACID	Citric acid	A	-	-	-	AVA
CLAIRCUT 20	Cuttings cleaning fluid	-	LU	-	-	Carless
CLAIRSOL 350M HF	Low toxicity base oil (low visc.)	LU	-	-	-	Carless
CLAIRSOL 370	< 1% aromatic-base oil	LU	-	-	-	Carless
CLAIRSOL 440	Very high flash, base oil	LU	-	-	-	Carless
CLAIRSOL NS	Very low toxicity base oil	LU	-	-	-	Carless
CLAIRSOL NS-P	Ultra low aromatic base oil	LU	-	-	-	Carless
CLAYSEAL	Amphoteric compound	SH	SU	-	-	Baroid
CLAYSEAL PLUS	Amphoteric compound	SH	SU	-	-	Baroid
CLAYTONE 38-H-DG	High temp. drilling smectite	V	-	-	-	So. Clay
CLAYTONE AF	Activator free guar gum susp. aid	V	-	-	-	So. Clay
CLAYTONE-EM	Rapid dispersing organoclay gellant	V	-	-	-	So. Clay

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
CLAYTONE II	Economy organo bentonite visc.	V	-	-	-	So. Clay
CLAYTONE IMG-400	High yield organo bentonite visc.	V	-	-	-	So. Clay
CLEAN-LUBE	Non-oil high performance lubricant	LU	SH	P	-	Telnite
CLEAN UP	Surfactant Cleaner	SU	-	-	-	M-I
CLEARDRILL 300	Polymer for pit clean-up	-	-	-	-	Clearwater
CLS	Chrome lignosulfonate	TH	TE	FR	-	DX Oilfield
CMC	Sodium CMC various grades	V	FR	-	-	Most cos.
CMC HV P	CMC high viscosity pure grade	V	FR	SH	-	AVA
CMC HV S	CMC high viscosity semipure grade	V	FR	SH	-	AVA
CMC HV T	CMC high viscosity technical grade	V	FR	SH	-	AVA
CMC LV P	CMC low viscosity pure grade	FR	SH	-	-	AVA
CMC LV S	CMC low viscosity semipure grade	FR	SH	-	-	AVA
CMC LV T	CMC low viscosity technical grade	FR	SH	-	-	AVA
CMC HV	Carboxy methyl cellulose, high vis	FI	V	SH	-	Ambar
CMC LV	Carboxy methyl cellulose, low vis	FI	SH	-	-	Ambar
CM STARCH	Carboxy methyl starch	FI	SH	-	-	Ambar
CM STARCH	Fluid-loss reducer	FR	SH	-	-	Baker
CM-TH	Treatment for cement contamination	CA	-	-	-	TBC-Brinadd
C-MUL	Polyalphaolefin (PAO) base lub. and ROP additive	LU	SU	SH	-	Coastal Superior
C-MUL	PAO - ROP enhancer	LU	SH	-	-	Sun
PAO	PAO based lubricant / ROP enhancer	LU	SH	-	-	Sun
COASTAL SPOT	Polyalphaolefin (PAO) base spotting fluid	P	LU	SU	-	Coastal Superior
COASTAL SPOT	Envr. safe spotting fluid/lube	P	LU	-	-	Sun
COASTALUBE	Polyalphaolefin (PAO) base lubricant	LU	SU	SH	-	Coastal Superior
COATEX 300 LX/BT	Biodegradable extreme pressure lubr.	LU	SU	-	-	Coatex
COATEX 1001 LX/BT	Extreme pressure lubricant	LU	SU	-	-	Coatex
COATEX EP 150	Biodegradable extreme pressure lubr.	LU	SU	-	-	Coatex
COATEX EP 400	Extreme pressure lubricant	LU	SU	-	-	Coatex
COATEX FP 30 S	High temp. thinner	TH	FR	-	-	Coatex
COATEX FP 31 S	High temp. thinner for high density muds	TH	FR	-	-	Coatex
COATEX FP 100	Acrylic polymer, high temp. dispersant	TH	FR	-	-	Coatex
COATEX FP 101	High temp. dispersant for high density muds	TH	FR	-	-	Coatex
CONCENTRADO 111	Extreme pressure lubricant	LU	-	-	-	Bolland
CON DET	Mud detergent	SU	E	-	-	Baroid
CONQOR 101	Water dispersible blended amine	CO	-	-	-	M-I
CONQOR 202 B	Persistent filming amine	CO	-	-	-	M-I
CONQOR 303 A	Brine soluble filming amine	CO	-	-	-	M-I
CONQOR 404	Phosphorus based corr. inhibitor	CO	-	-	-	M-I
CONQOR 505	General purpose corrosion	CO	-	-	-	M-I
CONQOR 7	Film froming amine corrosion inhibitor	CO	-	-	-	M-I
CONQOR P	Corrosion inhibitor/biocide	CO	B	-	-	M-I
CONTROL 1920	Deflocculant, calcium control agent for lime muds	TH	SH	FL	-	Horizon
CONTROL I-10F	White starch	FL	V	-	-	Horizon
CONTROL I-99F	Crosslinked starch	FL	V	SH	-	Horizon
CONTROL I-100	Natural white starch	FL	SH	V	-	Horizon
CONTROL I-165	Liquid alkaline starch polymer	FL	A	SH	-	Horizon
CONTROL I-166	Liquid alkaline starch polymer	FL	A	SH	-	Horizon
CORSAF-HT	High temp. corr. inhibitor	CO	-	-	-	TETRA
CORSAF-Z	Zinc fluid corr. inhibitor	CO	-	-	-	TETRA
CORSTOP	Oxygen and H2S remover	CO	-	-	-	AVA
COTTONSEED HULLS	Cottonseed hulls	LO	-	-	-	Most cos.
COUPLER	Coupler, emilsifier	E	-	-	-	Ambar
CROM-LIG	Modified lignite	TE	FR	TH	-	Bolland
CRUSEAL	Acid soluble, graded & sized crustacean flakes	LO	FR	W	-	BCI
CRW-132	Packer fluid corrosion inhibitor	CO	-	-	-	Aquaness
CYBER COAT	Surfactant	SU	E	FR	-	Newpark
CYBER G	Gilsonite	FR	SH	LU	-	Newpark
CYBER LSR	Organo-polymeric viscosofier	V	E	FR	-	Newpark
CYBER MUL	Low toxicity emulsifier	E	SU	FR	-	Newpark
CYBER PLUS	Low toxicity emulsifier	E	SU	FR	-	Newpark
CYBER TROL	Organo-leonardite	FR	-	-	-	Newpark
CYBER VIS	Organo-bentonite	V	FR	-	-	Newpark
CYDRIL 735	Powder polyacrylamide viscosifier, shale stabilizer	SH	V	FL	-	Cytec
CYDRIL 4000	Dry high M.W. anionic polymer	V	SH	FR	-	Cytec
CYDRIL 5300	Liquid high M.W. anionic polymer	V	SH	FR	-	Cytec
CYDRIL 5320	Liq. polyacrylamide viscosifier, shale stabilizer	SH	V	FL	-	Cytec
CY-EX	Sodium polyacrylate (high M.W.)	V	FL	-	-	Cytec
CY FLOC 4300	Complete flocculant	FL	-	-	-	Cytec
CY FLOC 4500	Polyacrylamide-high M.W.-selective	FL	-	-	-	Cytec
CY FLOC 5500	Polyacrylamide-high M.W.-selective	FL	-	-	-	Cytec
CYPAN	Sodium polyacrylate	FR	SH	TE	-	Cytec
CYTEMP	Liquid low M.W. polyacrylate	TH	-	-	-	Cytec
DALLEN DEFOAM	All purpose defoamer	D	-	-	-	Dallen
DALLEN FOAMER	Foaming agent for air drilling	FO	-	-	-	Dallen
DALLEN GUMBO SLIDE	Gumbo shale inhibitor	SH	LU	-	-	Dallen
DALLEN MUD LUBE	Environmentally safe lubricant	LU	-	-	-	Dallen

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
DALLEN PACKER FLUID INHIBITOR	Packer fluid inhibitor for low density brines	CO	-	-	-	Dallen
DALLEN QUICK THIN	Tannin mud thinner	TH	-	-	-	Dallen
DALLEN SULFIDE SCAVENGER	Soluble H2S scavenger	CO	-	-	-	Dallen
DALLEN TREATED GILSONITE	Surfactant treated gilsonite	SH	FR	LU	-	Dallen
DALLEN WATER WET	Wetting agent for gilsonite and asphalt	SU	-	-	-	Dallen
DATA LUBE ES	Non-toxic, water based drilling lubricant	LU	-	-	-	DataChem
DBEX	Bentonite extender	FL	-	-	-	Flowsa
DC 150	Magnesium aluminum silicate	V	FR	-	-	Engelhard
DCP 101	Polyalkylene glycol	SH	FR	LU	-	BP
DCP 202	Polyalkylene glycol	SH	FR	LU	-	BP
DCP 208	Polyalkylene glycol	SH	FR	LU	-	BP
DCP 503	Polyalkylene glycol lubricant	SH	LU	FR	-	BP
DCP 510	Lubricant, biodegradable	LU	-	-	-	BP
D-D	Drilling detergent	SU	E	LU	-	M-I
DE BLOCK S	Weighted mud-free pipe agent	P	-	-	-	AVA
DE BLOCK S LT	Low toxicity weighted mud-free pipe ag.	P	-	-	-	AVA
DE-2000	Synthetic based ROP enhancer	LU	SH	-	-	Ambar
DEEP DRILL INHIBITOR	Proprietary Shale Inhibitor	SH	LU	-	-	Newpark
DEEPKLEEN	Water wetting agents	SU	TH	-	-	Filco
DEEP-TREAT	Wetting agent	SU	TH	-	-	Baroid
DEFOAM	Defoamer for drilling/completion fl.	-	-	-	-	Osca
DEFOAM-2	Defoamer	D	SU	-	-	Osca
DEFOAM 2	Defoaming agent	D	-	-	-	TBC-Brinadd
DEFOAM-A	All purpose alcohol based defoamer	D	-	-	-	M-I
DEFOAMER	Alcohol blend for foam abatement	D	-	-	-	Dowell
DEFOAMER	Liquid non-alcohol base defoamer	D	TH	-	-	General
DEFOAMER-15	High alcohol compound	D	-	-	-	Telnite
DEFOAMER-30 C	Silicon emulsion	D	-	-	-	Telnite
DEFOAMER A	Higher alcohol based defoamer liq.	D	-	-	-	Baker
DEFOAMER FN	Foam preventer and defoamer	D	-	-	-	Clariant
DEFOAMER S-106	Silicone-based defoamer liq.	D	-	-	-	Baker
DEFOAMER S-110	Silicone-based defoamer liq.	D	-	-	-	Baker
DEFOAMER TBP	Tri-butyl phosphate defoamer liq.	D	-	-	-	Baker
DEFOAMER TIP	Foam destroyer	D	-	-	-	Clariant
DEFOAMER TW	Foam preventer and defoamer	D	-	-	-	Clariant
DEFOAM S	Silicon based defoamer	D	-	-	-	Ambar
DEFOAM S	Silicone based defoamer	D	-	-	-	M-I
DEFOAM-X	All purpose liquid defoamer	D	-	-	-	M-I
DEFOMEX	General purpose silicone based defoamer	D	-	-	-	Lamberti
DEFOMEX 42	Long chain hydroxy compound, defoamer	D	-	-	-	Lamberti
DEFOMEX 610/L	General purpose, high M.W. alcohol-based defoamer	D	-	-	-	Lamberti
DEFOMEX 620	Surfactant based defoamer	D	-	-	-	Lamberti
DEHYDRIL P 15	Anti stuck pipe	P	-	-	-	Henkel
DEHYCOR A 31	Acid corrosion inhibitor	CO	-	-	-	Henkel
DEHYCOR A 213	Acid corr. inhibitor, HCl & HF	CO	-	-	-	Henkel
DEHYCOR A 788	Acid corr. inh, HCl and HF	CO	-	-	-	Henkel
DEHYDEM 3 E 7	Demulsifier, acidic systems	-	-	-	-	Henkel
DEHYDOL D 4	Wettting agent	SU	-	-	-	Henkel
DEHYDRIL DF 462	Liquid defoamer	D	-	-	-	Henkel
DEHYDRIL S 106 S	Drilling detergent	SU	-	-	-	Henkel
DEHYLUB 532	Hydrolytical stable lubricant	LU	-	-	-	Henkel
DEHYLUB 1757	Lubricant	LU	-	-	-	Henkel
DEHYQUART LDB 50	Bactericide	B	CO	-	-	Henkel
DENSIMIX	High specific-gravity hematite	W	-	-	-	BH Inteq
DENSIMIX	Hematite, Fe2O3	W	-	-	-	Densimix
DEOXI AS	Oxygen remover	CO	-	-	-	AVA
DEOXI SS	Oxygen remover	CO	-	-	-	AVA
DESCO	Organic mud thinner	TH	TE	D	-	Drill Spec.
DESCO CF	Organic mud thinner	TH	TE	D	-	Drill Spec.
DESIA 52 FLOC	Cationic flocculant	FL	-	-	-	Barclay
DETERGENT	Drilling detergent	SU	E	-	-	General
DEXTRID	Modified starch with biocide	FR	SH	-	-	Baroid
DEXTRID E	Modified starch	FR	SH	-	-	Baroid
DEXTRID LT	Modified starch with biocide	FR	SH	-	-	Baroid
DEXTRID LTE	Modified starch with biocide	FR	SH	-	-	Baroid
D-FLOC (L)	Liquid thinner	TH	-	-	-	FDF
DFS-4M	Defoamer for air drilling	-	-	-	-	Clearwater
DGS-9	Polyalcohols medium M.W.	SH	LU	-	-	Flowsa
DIACEL D	Diatomaceous earth filter material	LO	-	-	-	Drill Spec.
DIAPLUG	High filtration lost circ. squeeze	LO	-	-	-	Messina
DIASEAL M	Blended high solids squeeze materials	LO	-	-	-	Drill Spec.
DIATOMITE	High purity diatomaceous earth	LO	-	-	-	AVA
DIONIC 900	Polymer for shale control	-	-	-	-	Clearwater
DI-PLUG	Diatomaceous earth	LO	-	-	-	Dowell
DIRT MAGNET	Well displacement clean-up fluid	FL	SU	P	-	Well-Flow
DISPERSAN	Chrome-free modified tannin	TH	TE	FR	-	Bolland
DL-100	Drilling lubricant	LU	-	-	-	Ambar

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
DME	Drilling mud emulsifier	E	SU	-	-	Baker
DMS	Drilling mud surfactant	SU	E	-	-	Baker
DMWA III	Wetting agent	-	-	-	-	FDF
DODIFOAM 2968	Liquid foaming agent for brines	FO	-	-	-	Clariant
DODIFOAM ES	Liquid foaming agent	FO	-	-	-	Clariant
DODIGEN 213	Corr. inhibitor, water dispersible	CO	-	-	-	Clariant
DODIGEN 3485	Biocide for SRBs (H2S)	B	-	-	-	Clariant
DODIGEN 5594	Corr. inhibitor, water soluble	CO	-	-	-	Clariant
DOLSAL	Sepiolite clay	V	-	-	-	AVA
DOLSAL B	Attapulgite clay	V	-	-	-	AVA
DOWN & DIRTY	Liquid casing scrub	CO	SU	-	-	Ambar
DREE PAC R	Polyanionic cellulose	FR	V	SH	-	Akzo-Dreeland
DREE PAC LV	Polyanionic cellulose	FR	SH	SU	-	Akzo-Dreeland
DRILBEX 19	Bentonite extender, modifier	V	-	-	-	Lamberti
DRILCIDE	Paraformaldehyde	B	-	-	-	Messina
DRILFLO	Modified tanic	TH	-	-	-	Flowsa
DRILFOAM	Foaming agent	FO	LU	SU	-	Baroid
DRIL-KLEEN	Mild detergent, low toxicity	SU	E	LU	-	M-I
DRILLAID P-469	Polymer shale stabilizer	V	-	-	-	Aquaness
DRILLAID SPA	Fluid loss agent	FR	-	-	-	Aquaness
DRILLAID WD-1000	Wellbore cleaner	SU	-	-	-	Aquaness
DRILLAID XTD II	Bentonite extender	V	FL	-	-	Aquaness
DRILLAM EL	Shale inhibitor	SH	FR	V	-	Lamberti
DRILLFAST	Penetration rate enhancer, lubricant	LU	SH	-	-	Setac
DRILLING DETERGENT	Non-ionic surfactant blend	SU	LU	-	-	Baker
DRILLING DETERGENT	Non-ionic detergent	SU	E	-	-	Dowell
DRILLING PAPER	Shredded paper LCM	LO	-	-	-	M-I
DRILL LUBE II	Non-toxic, biodegradable drilling lubr.	LU	-	-	-	Baker
DRILLMAX	Invert emulsion	E	P	-	-	FDF
DRILL-OUT	Powdered bentonite extender	V	-	-	-	Drill Spec.
DRILL PAC	Purified Polyanionic cellulose	FR	V	SH	-	Drill Spec.
DRILL PAC HV	Purified polyanionic cellulose	FR	V	SH	-	Drill Spec.
DRILL PLUG	Cellulosic lost circulation additive	LO	-	-	-	DrillTech
DRILLPOLYMER	Polymer blend for inhibited polymer sys.	V	FL	B	-	BDC
DRILLSTAR-HT	Pregelatinized drilling starch	FR	-	-	-	Baker
DRILLSTAR-Y	Pregelatinized drilling starch	FR	-	-	-	Baker
DRILL-THIN DISPERSANT	Chrome-free tannin mud conditioner	TH	E	D	-	Drill Spec.
DRILLWATE	Selected & sized calcium carbonate	LO	W	-	-	Drillsafe
DRIL-N-SLIDE	ROP enhancer	LU	-	-	-	Baroid
DRILPRO DEFOAM A	Higher alcohol defoamer	D	-	-	-	Drilpro
DRILPRO FLC	Non-fermenting starch	FR	-	-	-	Drilpro
DRILPRO HI-TEMP FLC	Temp. stabilized polymer	FR	-	-	-	Drilpro
DRILPRO MUD DETERGENT	Non-ionic surfactant	SU	LU	E	-	Drilpro
DRILSTAR HT	Pre-gel white starch	FR	SH	E	-	Chemstar
DRILSTAR P	Pre-gel white potato starch	FR	SH	V	-	Chemstar
DRILSTAR Y	Pre-gel starch	FR	SH	E	-	Chemstar
DRILTAL 131	Drilling fluids surfactant	SU	E	-	-	Lamberti
DRILTREAT	Oil wetting agent	SU	E	-	-	Baroid
DRIL-XT	ROP enhancer	SU	SH	-	-	M-I
DRISCAL	Polymer	FR	TE	LU	-	Drill Spec.
DRISCAL D	Dry form synthetic polymer	TE, FR	SH	V	-	Drill Spec.
DRISCOSE	Pure grade CMC	FR	V	SH	-	Drill Spec.
DRISPAC	Polyanionic cellulose	FR	V	SH	-	Drill Spec.
DRISPAC LIQUID	Liquid polyanionic cellulose	FR	V	SH	-	Drill Spec.
DRISPAC PLUS	Polyanionic cellulose polymer	FL	V	SH	-	Drill Spec.
DRISPAC PLUS SL	Polyanionic cellulose polymer	FR	SH	V	-	Drill Spec.
DRISPAC SUPERLO	Polyanionic cellulose	FR	SH	LU	-	Drill Spec.
DRYOCIDE	Thiocarbonate-based biocide-powder	B	-	-	-	BH Inteq
DS-501E	Water-soluble biocide/corr. inh.	B	CO	-	-	Drillsafe
DS-506	Oil soluble filming agent	CO	E	-	-	Drillsafe
DSB-200	Biodegradable biocide	B	-	-	-	Drillsafe
DSB-301	Water-soluble, biodegradable biocide	B	CO	-	-	Drillsafe
DSC 300	Heterocyclic filming amine	CO	-	-	-	Deep South
DSC 450	Corrosion inhibitor to 450°F	CO	-	-	-	Deep South
DSC BF 30	Thiocarbonate bactericide	B	-	-	-	Deep South
DSC CIDE	Organic sulfur antimicrobial agent	B	-	-	-	Deep South
DSC INSOL	Asphaltic inhibitor & dispersant	SU	-	-	-	Deep South
DSC 02 50	Sulfite based oxygen scavenger	CO	-	-	-	Deep South
DSCO DEFOAM	Synthetic defoamer	D	LU	FR	-	Drill Spec.
DSCVIS	Non-ionic pure hydroxyethyl cellulose	V	FR	-	-	Deep South
DS-POL SP	Pipe-freeing concentrate	P	LU	CO	-	Drillsafe
D TORQUE	Extreme pressure lubricant	LU	SU	-	-	Frontier
DUALFLO	Modified polysaccharide polymer	FR	-	-	-	Dowell
DUO-VIS	Xanthan gum	V	-	-	-	M-I
DURALON	Filtration control high temp. polymer	FR	TE	-	-	M-I
DURASTAR	HT-HP filtrate reducer	FR	V	-	-	M-I

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
DURATONE E	Oil mud filtration control additive	FR	-	-	-	Baroid
DURATONE HT	Oil mud filtration control additive	FR	-	-	-	Baroid
DURENEX PLUS	Hi-temp filtration control additive	FR	-	-	-	Baroid
DUROGEL	Sepiolite clay, API specs	V	TE	FR	-	M-I
DV-68	Synthetic polymer bentonite extender	V	FR	-	-	Dowell
D-WASH	Surfactant detergent	SU	E	-	-	Lamberti
DX-DEFOAM	Proprietary defoamer	D	-	-	-	DX Oilfield
DX-EXTEND	Bentonite extender, selective flocculant	V	FL	-	-	DX Oilfield
DX-HPL	High pressure, high temp. lubricant	LU	-	-	-	DX Oilfield
DX-LG 20	Liquid graphite lubricant	LU	-	-	-	DX Oilfield
DX-PAL 30	Liquid emulsion PHPA	SH	V	FL	-	DX Oilfield
DX-PAM	Nonionic polyacrylamide emulsion	SH	FL	-	-	DX Oilfield
DX-PHPA-D	High M.W. dry PHPA	SH	V	FL	-	DX Oilfield
DX-PHPA-DS	Dispersible PHPA powder	SH	V	FL	-	DX Oilfield
DX-SAPP	Sodium acid pyrophosphate	TH	-	-	-	DX Oilfield
DX-THIN	Liquid polymeric thinner	TH	-	-	-	DX Oilfield
DX-THIN XD	High Temp., calcium tolerant thinner	TH	TE	FR	-	DX Oilfield
DX-THIN XL	High Temp., calcium tolerant thinner	TH	TE	FR	-	DX Oilfield
DX-ZINC CARB	Zinc carbonate	SU	-	-	-	DX Oilfield
DYNA CIDE	Isothiazolin	B	-	-	-	Newpark
DYNA COL	Immiscible glycols	LU	SH	-	-	Newpark
DYNA DET	Detergent	SU	-	-	-	Newpark
DYNA-DRILL 330-L	High temp. polymeric thinner	TH	-	-	-	Baker
DYNA-DRILL 660-L	High temp. polymeric thinner	TH	TE	-	-	Baker
DYNA-DRILL 990-L	High-temp. contaminant resistant thinner, liquid	TH	TE	-	-	Baker
DYNA-DRILL BEADS	Sized composite spherical drlg lubr.	LU	P	-	-	Baker
DYNA-DRILL BX-1	Dry bentonite extender	V	FL	-	-	Baker
DYNA-DRILL D-	High-temp. contaminant resistant thinner, powder	TH	TE	-	-	Baker
DYNA-DRILL DEFLOC HT	High temp. filtrate stabilizer	FR	TE	SH	-	Baker
DYNA-DRILL DL-350	Drilling lubricant, torque and drag reducer	LU	-	-	-	Baker
DYNA-DRILL F-1	Dry selective flocculant	FL	-	-	-	Baker
DYNA-DRILL FL	High temp. contaminant-resistant fluid-loss stabilizer	FR	TE	-	-	Baker
DYNA-DRILL GL-100	Drilling lubricant, shale stabilizer	LU	SH	FR	-	Baker
DYNA-DRILL GL-150	Drilling lubricant	LU	FR	-	-	Baker
DYNA-DRILL HTHP	High-temp. filtrate stabilizer	FR	TE	SH	-	Baker
DYNA-DRILL HV-4000	Guar gum blend	V	-	-	-	Baker
DYNA-DRILL PAC TECH	PAC, tech-grade	FR	SH	-	-	Baker
DYNA-DRILL PHPA 35-D	Dispersible dry PHPA polymer	SH	V	LU	-	Baker
DYNA-DRILL PHPA 35-L	Liq. high M.W. PHPA polymer	SH	V	LU	-	Baker
DYNA-DRILL PHPA 55-D	Dispersible dry PHPA polymer	SH	V	LU	-	Baker
DYNA-DRILL PHPA 55-L	Liq. high M.W. PHPA polymer	SH	V	LU	-	Baker
DYNA-DRILL RESIN-PLEX	High temp. synthetic resin-fluid loss stabilizer	FR	TE	-	-	Baker
DYNA-DRILL TECH CMC	CMC, tech-grade	FR	SH	-	-	Baker
DYNA FIBER	Micronized cellulose	LO	FR	-	-	Newpark
DYNA FREE	Blend of lubricants and surfactants	P	-	-	-	Newpark
DYNA LOSE CM	Modified starch	FR	V	-	-	Newpark
DYNA LOSE W	White starch	FR	-	-	-	Newpark
DYNA LOSE Y	Yellow starch	FR	-	-	-	Newpark
DYNA LUBE	Blend of organic lubricants	LU	-	-	-	Newpark
DYNA LUBE II	Blend of organic lubricants and graphite	LU	-	-	-	Newpark
DYNA NITE	Gilsonite	FR	SH	LU	-	Newpark
DYNA PLEX	Resin	FR	-	-	-	Newpark
DYNA SLIDE	Blend of organic lubricants	LU	-	-	-	Newpark
DYNA SOL	Liquid sulfonated asphalt	SH	FR	-	-	Newpark
DYNA-SPOT	Safe spotting fluid additive	P	-	-	-	Baker
DYNA THIN	Sulfonated polymeric deflocculant	TH	TE	FR	-	Newpark
DYNA THIN HTZ	Zirconium complex	TH	TE	FR	-	Newpark
DYNOWASH	Water wetting, mud cleaning detergent	SU	-	-	-	Filco
EASY OUT 100	Spotting fluid-non-weighted	P	LU	-	-	Global
EASY OUT 200	Spotting fluid-weighted	P	LU	-	-	Global
E.C.L. 3000	Second generation synthetic fluid	P	LU	SH	-	Exper-Chem
E.C.L. 3000 W.B.	Water based lubr.-shale control-emulsifier	LU	SH	E	-	Exper-Chem
E.C.L. 4000	100% active mud cond., corr. inh. (torque, drag, diff. sticking, gumbo)	LU	P	SH	-	Exper-Chem
E.C.L.-4000-SYN.-"PAO"	100% active oil-base syn. drlg fluid additive	LU	P	SH	-	Exper-Chem
ECO-DRILL	Olefin based ROP enhancer	LU	SH	SB	-	Ambar
ECO-GEL H	Hectorite clay	V	FI	-	-	Ambar
ECO-GEL M	Montmorillonite clay	V	FI	-	-	Ambar
ECOGREEN B	Ester base fluid	TH	LU	-	-	M-I
ECOGREEN F	Polymeric fluid loss reducer	FR	V	-	-	M-I

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
ECOGREEN M	Low-end rheology modifier	V	-	-	-	M-I
ECOGREEN PE	Primary emulsifier	E	SU	-	-	M-I
ECOGREEN S	Secondary emulsifier	E	SU	-	-	M-I
ECOL LUBE	Biodegradable lubricant	LU	FR	-	-	AVA
ECOL LUBE HT	Mud lubricant for geothermal wells	LU	FR	-	-	AVA
ECO-MUL FLR	Fluid loss reducer for synthetic muds	FI	E	-	-	Ambar
ECO-MUL PE	Primary emulsifier for synthetic muds	E	-	-	-	Ambar
ECO-MUL SE	Secondary emulsifier for synthetic muds	E	SU	-	-	Ambar
ECO-MUL SYNTHETIC	Olefin based synthetic muds	SB	-	-	-	Ambar
ECO-MUL WA	Wetting agent for synthetic muds	E	SU	-	-	Ambar
ECO-PHALT	Asphalt for oil mud	FI	SH	-	-	Ambar
ECO-SEAL	Cellulose fibers w/o hydrocarbon derivatives	LO	FR	W	-	BCI
ECO-SORB	Oil absorbant granules	-	-	-	-	Ambar
ECO-SPERSE	Emulsifier for Eco-Drill system	E	-	-	-	Ambar
ECO-THIN	Sythetic mud thinner	TH	-	-	-	Ambar
ECOTROL	Polymeric fluid loss reducer	FR	V	-	-	M-I
ECO-VIS S	Low end rheology modifier for synthetics	V	-	-	-	Ambar
EDTI AGB	Aluminum graphite beads	LU	P	-	-	EDTI
EDTI BAT	Ultra-low solids mud bentonite extender	V	-	-	-	EDTI
EDTI BIO-SEAL	Ultra-low solids filtate loss control additive	FR	SH	-	-	EDTI
EDTI BIO-STOP	Ultra-low solids lost circulation control agent	LO	-	-	-	EDTI
EDTI BIO-SWEEP	Hole sweep additive	V	-	-	-	EDTI
EDTI BIO-VIS	Ultra-low solids mud viscosifier	V	-	-	-	EDTI
EDTI CATS	Custom advanced technology system	V	FR	SH	-	EDTI
EDTI COM	Cellulose obturant material	LO	FR	P	-	EDTI
EDTI DWC	Ultra-low solids, non-invasive mud	V	FR	SH	-	EDTI
EDTI FLC	Filtrate loss control	FR	SH	P	-	EDTI
EDTI GEL-SEAL	LSND fluid loss control additive	FR	-	-	-	EDTI
EDTI GEL-STOP	LSND lost circulation material	LO	-	-	-	EDTI
EDTI GEL-VIS	LSND mud	V	FR	-	-	EDTI
EDTI KFA	Potassium fluid additive	SH	LU	D	-	EDTI
EDTI LCP	Lost circulation pill slurry	LO	V	FR	-	EDTI
EDTI MLC	Mud loss control material	LO	-	-	-	EDTI
EDTI ULS-VIS	Ultra low solids organic viscosifier	V	-	-	-	EDTI
E.L.S.	Modified lignosulfonate	TH	FR	SH	-	Setac
EMEC BAR	Barium sulfate (API specs)	W	-	-	-	EMEC
EMEC BUF	pH buffer for solids water-base muds	A	-	-	-	EMEC
EMEC CARB	Calcium carbonate; acid soluble	LO	W	FR	-	EMEC
EMEC CIDE	Liquid biocide, preservative	B	-	-	-	EMEC
EMEC CMC-HV	Carboxy methyle cellulose; high visc. Rn OCH2 COONa	FR	V	SH	-	EMEC
EMEC CMC-LV	Carboxy methyle cellulose; low visc. Rn OCH2 COONa	FR	SH	-	-	EMEC
EMEC COAT-B	Corr. inh. for compl. fluids	CO	-	-	-	EMEC
EMEC COAT-D	Corr. inh. for water-base mud	CO	-	-	-	EMEC
EMEC CON	Secondary emulsifier	E	FR	SU	-	EMEC
EMEC FOAM	Water-base mud foamer	FO	-	-	-	EMEC
EMEC GEL	Bentonite (OCMA spec DFCP4)	V	FR	-	-	EMEC
EMEC LIG	Causticized lignite	TH	FR	-	-	EMEC
EMEC LUBE	Lubricant for water-base mud	LU	-	-	-	EMEC
EMEC MIL	Drilling fluid viscosifier	V	SH	-	-	EMEC
EMEC MUL	Primary emulsifier	E	FR	TE	-	EMEC
EMEC PAC-R	Polyanionic cellulose; high visc.	FR	V	SH	-	EMEC
EMEC PAC-SL	Polyanionic cellulose; low visc.	FR	SH	LU	-	EMEC
EMEC RESIN	Water soluble H/T synthetic resin	FR	TE	TH	-	EMEC
EMEC SEAL	Blended variation of fibrous material; fine, med. & coarse	LO	-	-	-	EMEC
EMEC SPOT	Oil-base surfactant for freeing stuck pipe	P	-	-	-	EMEC
EMEC SURF	Blend of surface active agent	SU	LU	SH	-	EMEC
EMEC TEX	Mod. asphalt filsonite & lignite compound	SH	FR	LU	-	EMEC
EMEC TEX-A	Modified sulfonated asphalt	SH	FR	LU	-	EMEC
EMEC THIN	Oil-base mud thinner	TH	SU	-	-	EMEC
EMEC TONE	Asphaltic blend	FR	E	TE	-	EMEC
EMEC TONE II	Non-asphaltic filtration agent	FR	E	-	-	EMEC
EMEC VIS	Organophilic clay	V	-	-	-	EMEC
EMEC VIS II	Organophilic clay for low toxicity oil mud	V	-	-	-	EMEC
EMEC WATE	Iron oxide (hematite)	W	CO	-	-	EMEC
EMEC WET	Wetting agent for oil mud	SU	TH	-	-	EMEC
EMELOY	Pregelatinized starch	FR	-	-	-	EMEC
EML I	Primary emulsifier	E	-	-	-	FDF
EML II	Secondary emulsifier	E	-	-	-	FDF
EMULAM F694	Deflocculant/Superwetting agent for invert muds	TH	-	-	-	Lamberti
EMULAM P	Primary emulsifier for invert muds	E	FR	SU	-	Lamberti
EMULAM S	Secondary emulsifier for invert muds	E	TE	FR	-	Lamberti
EMULAM ST	Rheology modifier/viscosifier for invert muds	V	-	-	-	Lamberti
ENVIRO-BEADS	Non-polluting friction reducer, lubr.	LU	FL	SH	-	Progress
ENVIRO-BLEND SYSTEM	Glycerine-base,envr. safe drilling fluid	SH	LU	FL	-	Progress
ENVIRO-CHEK	Gilsonite shale control	SH	FL	TH	-	Progress
ENVIRO-CLEAR	Clarify water from mud system	FL	-	-	-	Progress
ENVIRO-DET	Non-poluting detergent	SU	-	-	-	Progress
ENVIRO-FLUID	Glycerol base safe additive-liq.	SH	LU	FL	-	Progress
ENVIRO-LO-THIN	Safe liquid organic mud thinner	TH	TE	D	-	Progress
ENVIRO-LUBE	Lubricant	LU	FR	-	-	Sun
ENVIRO-PAC	Safe liquid organic mud thinner	TH	TE	D	-	Progress
ENVIRO-	Mud preservative	B	-	-	-	Progress

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
ENVIRO-SEAL	Non-polluting lost circ. additive	LO	LU	-	-	Progress
ENVIRO-SLICK	Pollution free lubricant	LU	FL	SH	-	Progress
ENVIRO-SLICK HT	Glycerine-base, high temp. lubricant	LU	-	-	-	Progress
ENVIRO-SLIDE	Treated beads	LU	-	-	-	Progress
ENVIRO-SOL IC	Iron solubilizer for completions	-	-	-	-	Progress
ENVIRO-SORB	Oil absorbant, biodegradable	-	-	-	-	Progress
ENVIRO-SPOT	Spotting fluid concentrate	P	LU	-	-	Baroid
ENVIRO-SWEEP	Safe liquid hole sweep	LU	TH	TE	-	Progress
ENVIRO-SWEET D	Gas sweetener for drilling	-	-	-	-	Progress
ENVIRO-TEX	Non polluting high temp. stabilizer	SH	FR	TE	-	Progress
ENVIROTHERM D	HPHT synthetic deflocculant polymer	TH	TE	FR	-	M-I
ENVIROTHERM F	HPHT fluid loss synthetic polymer	FR	TE	-	-	M-I
ENVIROTHERM R	HPHT fluid loss resin polymer	FR	TE	-	-	M-I
ENVIRO-THIN	Chrome-free lignosulfonate	TH	FL	-	-	Baroid
ENVIRO-TORQ	Broad-spectrum lubricant	LU	-	-	-	Baroid
ENVIRO-TREAT	Non polluting gilsonite base dispersant	FL	TE	SH	-	Progress
ENVIRO-VIS	Liquid viscosifier 500 deg. non polymer	V	LU	TE	-	Progress
EP-22	Oil mud emulsifier	E	FR	-	-	Bolland
E. P.-LUBE	Extreme pressure lubricant	LU	-	-	-	M-I
EP MUDLUBE	Extreme pressure lubricant	LU	-	-	-	Baroid
ESAPAL DME	Drilling mud emulsifier	E	SU	LU	-	Lamberti
ESAPAL DMS	Drilling mud surfactant	SU	SH	LU	-	Lamberti
ESD-100	Envr. safe, water-based defoamer	D	-	-	-	LCS
ETHYL-CELLO-	Liquid HEC	V	FR	-	-	Barclay
E TORQUE	Environmentally friendly lubricant for offshore	LU	SU	-	-	Frontier
EX-CORR	Aerated corrosion fluid	CO	D	E	-	Exper-Chem
EX-DE-FLOC	Liquid organic polymer viscosifier	FL	V	-	-	Exper-Chem
EXSTAR	Drilling starch for higher temps.	FR	-	-	-	Baker
EXSTAR	High temp. stable starch for brine-based fluids	TE	FR	V	-	Chemstar
EXSTAR-HT	Drilling starch for higher temps.	FR	-	-	-	Baker
EXSTAR HT	Viscosifier & fl. loss control in brine, silicates	V	FR	-	-	Chemstar
EXTENSOL	Salt crystal growth inhibitor	TE	-	-	-	Baroid
EZ-CORE	Fatty acid emulsifier	E	-	-	-	Baroid
EZE-VIS-LT	Liquid viscosifier	V	-	-	-	Integrity
EZ-MUD	Shale stabilizing polymer solution	V	SH	FR	-	Baroid
EZ-MUD DP	Powdered shale stabilizing polymer	SH	V	FR	-	Baroid
EZ MUL	Oil mud emulsifier	E	SU	-	-	Baroid
EZ MUL 2F	Synthetic mud emulsifier	E	SU	-	-	Baroid
EZ MUL NT	Oil mud emulsifier	E	SU	-	-	Baroid
EZ MUL NTE	Synthetic mud emulsifier	E	SU	-	-	Baroid
EZ-VIS-OLS	Envr. liquid viscosifier	V	-	-	-	Integrity
F 910	H2S remover for acid systems	CO	SU	-	-	Frontier
F 3000C	H2S remover	CO	SU	-	-	Frontier
FASGEL	High-yield, 200 bbl, bentonite	V	-	-	-	Baker
FAST SEAL	Blended fiber, flake & granular LCM	LO	-	-	-	LCS
FC-8	Ferro-chrome lignosulfonate	TH	FR	SH	-	EMEC
FC-10	Chrome-free lignosulfonate	TH	FR	SH	-	EMEC
FDF ENVIROCAL	Calcium lignin	TH	FR	-	-	FDF
FDF NO-PHALT	Sulfonated asphalt	SH	FR	TE	-	FDF
FDF POLYPLEX	Risin lignin	FR	TE	SH	-	FDF
FDF PURESAFE	Environmental spot	P	-	-	-	FDF
FDF VISPLUG	Cross link polymer	LO	-	-	-	FDF
FDM	Water based surfactant	SU	-	-	-	Flowsa
FER-OX	Hematite, API specs	W	-	-	-	M-I
FERRO-SPONGE	H2S remover	CO	-	-	-	Messina
FIBERSOL	Acid soluble LCM	LO	-	-	-	Sun
FIBERTEX	Shredded cane fibers	LO	-	-	-	Baroid
FILTER-CHEK	Fermentation-resistant modified starch	FR	V	-	-	Baroid
FILTRACEL	Tech. grade CMC	FR	SH	V	-	Messina
FILTREX	Polyanionic lignin resin	FR	TH	-	-	BH Inteq
FILTROL	Modified polysaccharide	FR	-	-	-	Messina
FILTROL-LV	Carboxymethylated polymer	FR	-	-	-	Messina
FILTROL-PLUS	Premium modified hydrocolloid	FR	-	-	-	Messina
FILTRON	Mod. polysaccharide-slightly anionic	FR	-	-	-	M-I
FINAGREEN BDMF	Synthetic-based fluid	LU	P	LO	-	Fina Chem.
FINAGREEN EBL	Ester-based lubr. for water-based muds	LU	P	LO	-	Fina Chem.
FINAGREEN SL	Envr. friendly lubricant for high ph water based (silicate muds)	LU	P	-	-	Fina Chem.
FINNFIX H	Purified, high-viscous grade CMC	V	SH	FL	-	Metsa
FINNFIX HC	Technical CMC, extreme high vis. grade	V	SH	FR	-	Metsa
FINNFIX L	Purified, low-viscous grade CMC	FL	SH	TH	-	Metsa
FINNFIX LC	Technical CMC, low vis. grade	FR	SH	FL	-	Metsa
FINNFIX RC	Technical CMC, high vis. grade	V	FR	SH	-	Metsa
FINNPOL 35	H.M.W. polyacrylamide polymer	SH	FR	FL	-	Metsa
FINNPOL 215	Medium H.M.W. polyacrylamide polymer	SH	FR	FL	-	Metsa
FINNPOL 315	Extra H.M.W. polyacrylamide polymer	SH	FL	FR	-	Metsa
FL-1000	Carboxymethylated polysaccharide	FL	SH	-	-	Liquid Csg.
FL-1000 HV	Carboxymethylated polysaccharide-biopolymer	FR	V	SH	-	Liquid Csg.
FL-7 PLUS	Crosslinked derivatized starch	FR	-	-	-	TBC-Brinadd
FL7-PLUS I	Semi synthetic polymer	FR	-	-	-	AVA
FLAKE	Cellophane flakes	LO	-	-	-	M-I
FLC	Cellulosic blend	FR	-	-	-	Baroid
FLOCGEL EHV	Hydroxyalkylated polymer; extra high visc.	V	FR	-	-	Avebe
FLOCGEL HV	Mod. starch polymer for workover fluids	FR	V	-	-	Avebe
FLOCGEL HV/TA	Mod. natural polymer; high visc.	V	FR	-	-	Avebe

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
FLOCGEL LV	Mod. potato starch, low visc.	FR	SH	-	-	Avebe
FLOCGEL W	CMS-polymer; high visc.	V	FR	-	-	Avebe
FLO-CLEAN MD	Flocculant for calcium brines	FL	-	-	-	Baroid
FLO-CLEAN Z	Flocculant for zinc brines	FL	-	-	-	Baroid
FLOCGEL EHV	Hydroxyalkylated polymer; extra high visc.	V	FR	-	-	Avebe
FLOCGEL HV	Mod. starch polymer for workover fluids	FR	V	-	-	Avebe
FLOCGEL HV/TA	Mod. natural polymer; high visc.	V	FR	-	-	Avebe
FLOCGEL LV	Mod. Potato starch; low visc.	FR	SH	-	-	Avebe
FLOCGEL W	CMS-polymer; high visc.	V	FR	-	-	Avebe
FLOPLEX	Modified polysaccharide polymer	FR	-	-	-	Dowell
FLORIGEL	Attapulgite clay	V	-	-	-	General
FLORIGEL H-Y	Salt gel attapulgite drilling clay	V	-	-	-	Floridin
FLO-TROL	Starch derivative	FR	V	-	-	M-I
FLO-VIS	Clarified xanthan gum	V	-	-	-	M-I
FLOWCAT 628	PHPA	FL	-	-	-	Flowsa
FLOWCAT LP	Polyelectrolyte	FL	-	-	-	Flowsa
FLOWCAT P	Polyelectrolyte	FL	-	-	-	Flowsa
FLOWCHECK	Sodium Lignosulphonate	TH	FR	E	-	Flowsa
FLOWCOM 1	Polymeric mix	FR	SH	-	-	Flowsa
FLOWCOM 2	Organic salt	SH	-	-	-	Flowsa
FLOWDRILL 30	PHPA solid high M.W.	SH	-	-	-	Flowsa
FLOWDRILL 30 L	PHPA solution high M.W.	SH	V	-	-	Flowsa
FLOWDRILL 100	PHPA polymer high M.W.	SH	V	-	-	Flowsa
FLOWFLOC I	PHPA	FL	-	-	-	Flowsa
FLOWFLOC N	PHPA	FL	-	-	-	Flowsa
FLOWLIG	Lignite	TH	FR	-	-	Flowsa
FLOWMULSE	Emulsifying mix/surfactant	E	FR	-	-	Flowsa
FLOWMULSE HT	Emulsifyer/wetting agent	E	FR	-	-	Flowsa
FLOW PAC HV/LV	Technical grade PAC HV/LV	FR	-	-	-	Flowsa
FLOWPHALT HT	Modifying asphalt	FR	V	LO	-	Flowsa
FLOWPHILIC	Organophilic clay	V	-	-	-	Flowsa
FLOWSAL	Aluminum complex salts	SH	-	-	-	Flowsa
FLOWSULF	Modified asphalt	SH	FR	TE	-	Flowsa
FLOWTEM	High temperature dispersant	TH	TE	-	-	Flowsa
FLOWTHIN	Liquid deflocculant polymer	TH	-	-	-	Flowsa
FLOWTROL	Polyacrilate fluid loss reducer	FR	-	-	-	Flowsa
FLOWVIS	Viscosifying polymeric mix	V	-	-	-	Flowsa
FLOWZAN	Xanthan gum biopolymer	V	-	-	-	Drill Spec.
FLOWZAN LIQUID	Liquid xanthan gum biopolymer	V	-	-	-	Drill Spec.
FLOXIT	Clay flocculant	FL	SH	-	-	M-I
FLR-A	Oil soluble asphalt	FR	TE	-	-	FDF
FLR-L	Amine treated lignite	FR	TE	-	-	FDF
FOAM BLOCK	Water miscible liquid	D	SU	-	-	Drilpro
FOAMBUSTER	Water-base defoamer	D	SU	-	-	Sun
FOAMER F-500	Foaming agent, field strength	FO	-	-	-	Baker
FOAMER F-550	Foaming agent, concentrate	FO	-	-	-	Baker
FOAMEX S	Anionic foaming agent	FO	-	-	-	Lamberti
FOAMEX TS	Concentrated foaming agent	FO	-	-	-	Lamberti
FOAM-FREE-A	Defoamer liquid	D	-	-	-	Messina
FOAM-FREE-ALS	Powdered defoamer	D	-	-	-	Messina
FOAM-FREE-V	Liquid defoamer	D	-	-	-	Messina
FOAM-FREE-WF 9	Liquid antifoam agent	D	-	-	-	Messina
FOAM MASTER	Blended defoamer liquid	D	-	-	-	Baker
FOAM TREAT	Surface-active shale stabilizer for air, mist & foam	SH	FO	SU	-	Anchor
FOMEX	Foaming agent	FO	-	-	-	Flowsa
FORALYS 180 E	Mod. potato starch, low visc.	FR	V	SH	-	Roquette
FORALYS 180 PE	Mod. potato starch, low visc. with biocide	FR	V	SH	-	Roquette
FORALYS 380	Pregelatinized drilling starch	FR	V	SH	-	Roquette
FORALYS 380 P	Pregelatinized drilling starch with biocide	FR	V	SH	-	Roquette
FORM-A-PLUG	Acid soluble plug	LO	FR	-	-	M-I
FORM-A-SET	Fiberous lost circulation material	LO	-	-	-	M-I
FOSTERGE LF ACID	Wetting agent	SU	-	-	-	Henkel
FOSTERGE LFS	Paraffin dispersant	TH	-	-	-	Henkel
FOSTEX 617 B	Scale inhibitor	CA	TH	-	-	Henkel
FOSTEX 740	Scale inhibitor	CA	TH	-	-	Henkel
FOSTEX AMP	Scale inhibitor	CA	-	-	-	Henkel
FOSTEX P	Scale inhibitor	CA	-	-	-	Henkel
FRAC-PAK	High solids, high-fluid loss LCM	LO	-	-	-	BCI
FRONTIER C.I.	Drilling corrosion inhibitor	CO	E	-	-	Frontier
FRONTIER DRILLING DETERGENT	Drilling detergent	SU	E	FO	-	Frontier
FRONTIER EMUL	Oil into water emulsifier	E	CO	-	-	Frontier
FRONTIER FOAMING AGENT	Drilling foaming agent	FO	SU	-	-	Frontier
FRONTIER LUBE II	Biodegradable, non-toxic lubr.	LU	SH	SU	-	Frontier
G-500S	High temp. polymeric dispersant	TE	TH	-	-	Telnite
GABROIL HV	Polyanionic cellulose, tech grade, high visc.	FL	V	SH	-	Akzo Nobel
GABROIL LV	Polyanionic cellulose, tech grade, low visc.	FL	SH	LU	-	Akzo Nobel
GABROSA EHVT	Carboxymethyl cellulose (API 13A)	FR	V	SH	-	Akzo-Dreeland
GABROSA EHV TECH	Extra high visc. CMC (OCMA DFCP-7, API 13A)	FL	V	SH	-	Akzo Nobel
GABROSA HVP	Carboxymethyl cellulose	FR	V	SH	-	Akzo-Dreeland

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
GABROSA HVT	Carboxymethyl cellulose	FR	V	SH	-	Akzo-Dreeland
GABROSA HV TECH	High visc. CMC	FL	V	SH	-	Akzo Nobel
GABROSA LVP	Carboxymethyl cellulose	FR	SH	LU	-	Akzo-Dreeland
GABROSA LVT	Carboxymethyl cellulose (API 13A)	FR	SH	LU	-	Akzo-Dreeland
GABROSA LV TECH	Low visc. CMC (OCMA DFCP-2, API 13A)	FL	SH	-	-	Akzo Nobel
GB-SEAL	Blended cementitious gunk squeeze	LO	-	-	-	Messina
GEL-ASPHATEX	Asphaltic shale stabilizer	SH	LU	FL	-	Gumpro
GEL BAR	Barite	V	-	-	-	Gumpro
GEL BEN	Bentonite	V	FL	-	-	Gumpro
GEL BIO	Biocide	B	-	-	-	Gumpro
GEL CELL	Cellophane flakes	LO	-	-	-	Gumpro
GEL CORR	Corrosion inhibitor	CO	B	-	-	Gumpro
GEL CR	Chrome lignite	TE	TH	FL	-	Gumpro
GEL DET	Drilling detergent	SU	E	-	-	Gumpro
GEL DE FOAM	Surface acting liquid defoamer	D	FL	-	-	Gumpro
GEL EP LUBE	Blend of organic compounds	LU	CO	-	-	Gumpro
GEL EX	Bentonite extender	FL	V	-	-	Gumpro
GELEX	Bentonite extender & selective flocculant	V	FL	-	-	M-I
GEL FIB	Fiberous material	LO	-	-	-	Gumpro
GEL FREE	Special blend of emulsifiers and lubr. to free stuck pipe	P	LU	-	-	Gumpro
GELITE	Saponite clay	V	FR	TE	-	M-I
GEL-K-SEAL	Low-density fibers/flakes/minerals blend	LO	-	-	-	Gumpro
GEL-LC-SEAL	Micro celluar wet casing	LO	LU	-	-	Gumpro
GEL LIG	Processed lignite	TH	FL	E	-	Gumpro
GEL-LIGNITE	Lignite powder	FL	TH	E	-	Gumpro
GEL LUBE	Blend of monohydric alcohols	LU	-	-	-	Gumpro
GELMUL	Primary emulsifier for oil base mud	E	-	-	-	Gumpro
GEL OIL	Organophilic clay	V	-	-	-	Bolland
GEL SEAL M	High water-loss plug	LO	-	-	-	Gumpro
GEL SHELL	Nut shells	LO	-	-	-	Gumpro
GELSILLUB	Special lubricant for silicate mud system	LU	-	-	-	Gumpro
GEL STARCH	Pre-gel starch	FL	V	-	-	Gumpro
GEL SUPREME	Non-treated bentonite, API spec	V	FR	-	-	M-I
GELTEX CP	Biodegradable polysaccharide	FL	V	-	-	Gumpro
GELTONE	Oil mud viscosifier	V	-	-	-	Baroid
GELTONE II	Oil mud viscosifier	V	-	-	-	Baroid
GELTONE III	Oil mud viscosifier	V	-	-	-	Baroid
GELTONE IV	Oil mud viscosifier	V	-	-	-	Baroid
GELTONE V	Oil mud viscosifier	V	-	-	-	Baroid
GELTROL	HTHP OBM fluid loss controller	FL	-	-	-	Gumpro
GELWET	Secondary emulsifier cum wetting agent	E	W	-	-	Gumpro
GEL WHITE	Sizecalcium carbonate for drill in fluid	LO	V	FL	-	Gumpro
GEM 2000	Polyglycerol	SH	-	-	-	Baroid
GEM CP	Polyglycol	SH	-	-	-	Baroid
GEM GP	Polyglycol	SH	-	-	-	Baroid
GEM SP	Polyglycol	SH	-	-	-	Baroid
GEO-MEG	Methyl glucoside, envr. safe water-soluble system	SH	LU	CO	-	Horizon
GILSONITE	Natural, envr. safe shale control agent	SH	FR	LU	-	Am. Gilsonite
GILSONITE	Untreated gilsonite	FI	LU	-	-	Ambar
GILSONITE 400 PLUS	Withstands 400 degree temp.	FI	LU	-	-	Ambar
GILSONITE NT	Shale stabilizer	SH	FR	-	-	Baker
GILSONITE ST	Shale stabilizer	SH	FR	-	-	Baker
GILSONITE T	Treated gilsonite	FI	LU	-	-	Ambar
GLIDE HS	Biodegradable lubricant	LU	-	-	-	M-I
GLOBAL-AAA	Cleaner of wellbore	SU	FO	-	-	Global
GLOBAL BIOPOLYMER	Xanthan gum	V	-	-	-	Global
GLOBAL CAT-FLOC 2000	Flocculant & clarifier	FL	TH	-	-	Global
GLOBAL ECCO DEGREASER	Cleaning rig, rigfloor & equipment	SI	FO	-	-	Global
GLOBAL ECCO SPOT	Environmental spotting fluid	P	SH	LU	-	Global
GLOBAL LFT	Liq. pipe-freeing agent	P	LU	-	-	Global
GLOBAL POLY VIS H.T.	High temp. viscosifier	V	FL	TE	-	Global
GLOBAL SFT	Pipe-freeing compound	P	LU	-	-	Global
GLOBAL XXX	Oxygen scavenger	CO	-	-	-	Global
GLOBAL ZZZ	Bactericide	B	CO	-	-	Global
GLO COR 120	Filming agent for CO2 & H2S environments	CO	-	-	-	Global
GLO-COR 300	Corrosion control	CO	-	-	-	Global
GLO-COR 500	Corrosion control	CO	SU	-	-	Global
GLO-COR 700	Corrosion control	CO	TH	-	-	Global
GLO COR FA	All purpose filming amine	CO	-	-	-	Global
GLO D-FOAM	Defoamer for salt-water muds	D	-	-	-	Global
GLO D-FOAM 100	Alcohol-based defoamer	D	-	-	-	Global
GLO D-FOAM 250	Blended polyol	D	-	-	-	Global
GLO D-FOAM 400	Aluminum stearate suspension	D	-	-	-	Global
GLO FLOC SPM	Flocculant & clarifier	FL	TH	-	-	Global
GLO-FOAM	Foaming agent	FO	SU	-	-	Global
GLOFOAM 500	Foaming agent	FO	SU	-	-	Global

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		Function 1	Function 2	Function 3	Function 4	
GLOFOAM 600	Foaming agent	FO	SU	-	-	Global
GLO FOAM 736	Foaming agent	FO	SU	-	-	Global
GLO MER FLC	High temp. fluid-loss control	FR	TE	-	-	Global
GLO POLY LOSS 500	Fluid-loss control, protective colloid	FR	E	TE	-	Global
GLO POLY LOSS 700 L	Fluid-loss control	FR	SH	TE	-	Global
GLO POLY LOSS 700 S	Fluid-loss control	FR	SH	TE	-	Global
GLO POLY THIN H.T.	Mud thinner, high temp.	TH	FL	-	-	Global
GLO SCALE CONTROL 101	Scale inhibitor	CA	-	-	-	Global
GLO SEAL 400	Blended lost circulation material	LO	SU	LU	-	Global
GLO SLICK-90	Shale control & lubricant	SH	LU	FL	-	Global
GLO THIN H.T.	High temp. mud thinner	TH	TE	FR	-	Global
GLO-TREAT 100	pH control	A	SH	-	-	Global
GLO-X-LUBE 100	E. P. lube for water-based systems	LU	-	-	-	Global
GLO-X-LUBE 125	Oil-based E. P. lubricant	LU	-	-	-	Global
GLO-X-LUBE 150	Environmentally safe E.P. lubr.	LU	-	-	-	Global
GLUTE-10	Glutaraldehyde, 10%	B	-	-	-	M-I
GLYDRIL DG	Water miscible glycol	TE	SU	-	-	M-I
GLYDRIL GP	Polyalkylene glycol	SH	FR	LU	-	M-I
GLYDRIL HC	Polyalkylene glycol	SH	FR	LU	-	M-I
GLYDRIL LC	Polyglycol shale inhibitor	SH	FR	LU	-	M-I
GLYDRIL MC	Glycerol/glyceride blend	SH	FR	LU	-	M-I
GOLD CLEAN	Solvent/surfactant surface cleaner	SU	-	-	-	Deep South
GOLD FLUSH	Solvent tubing cleaner & pipe pickle	SU	-	-	-	Deep South
GOLD FLUSH CM	Solvent wall cake removal	SU	-	-	-	Deep South
GOLD FLUSH II	Wellbore displacement solvent	SU	-	-	-	Deep South
GOLD FLUSH SB	Wellbore displacement additive	SU	-	-	-	Deep South
GOLD SURF	Water wetting surfactant	SU	-	-	-	Deep South
GOLD SURF S	Cement spacer additive, non-ionic surfactant	SU	-	-	-	Deep South
GOLD VIS	Viscosity agent for Gold Flush	V	SU	-	-	Deep South
GRANULAR	LCM vegetable shell, F.M.C	LO	-	-	-	AVA
GRAPHITE	Granular graphite lubricant	LU	-	-	-	Most cos.
GRAPHITE HT	Powdered lubricant for hot holes	LU	-	-	-	Baker
G-SEAL	Graphite plugging agent	LO	LU	-	-	M-I
GUAR GUM	Spud mud viscosifier	V	-	-	-	Most cos.
GUAR GUM CP 3500	Polysaccharide used as viscosofier	V	-	-	-	Molen
GUMBO-SHIELD	Gumbo shale inhibitor stablizer	SH	LU	-	-	Sun
GYPSUM	Hydrated calcium sulfate	SH	TE	-	-	Most cos.
H2LESS	Liquid H2S extractor	CO	-	-	-	Messina
HE-100 POLYMER	Synthetic water soluable co-polymer	V	FR	TE	-	Drill Spec.
HE-300 POLYMER	Synthetic water soluable co-polymer	V	FR	TE	-	Drill Spec.
HEC	Hydroxyethyl cellulose polymer	V	FR	-	-	Most cos.
HEC LIQUID	Pure HEC in non-setting liq. suspension	V	FR	-	-	Drill Spec.
HEC LIQUID (E)	Pure HEC in non-settling emulsion liquid	V	FR	-	-	Baker
HEC LIQUID (S)	Pure HEC in non-settling suspension liquid	V	FR	-	-	Baker
HEMATECH	Micaceous hematite	W	-	-	-	Densimix
HEMATITE	Hematite	W	-	-	-	AVA
HE POLYMERS	Synthetic polymers	V	FL	-	-	Drill Spec.
HGA 37/48	Gelling system for crude/diesel	-	-	-	-	Clearwater
HIDROCOM-HM	Mixed metal hydroxides	SH	-	-	-	Flowsa
HI-FLOW 25	High temp. polymeric dispersant	TH	TE	-	-	Telnite
HI-FLOW 30	High temp. polymeric dispersant	TH	TE	-	-	Telnite
HI-FOAM	Foaming agent	FO	-	-	-	Dowell
HIGH TEMP PLUS	Gilsonite blended sack material	FR	SH	-	-	Sun
HI-K	Tetra potassium pyro phosphate	W	SH	-	-	M-I
HILUBE	Biodegradable lubricant	LU	FR	-	-	M-I
HIPERGEL	Synthetic inorganic viscosifier	V	FR	-	-	Telnite
HI THERM 100	Resinated lignite	FR	TE	TH	-	Global
HI-THIN	Organic thinner	TH	FR	-	-	Messina
HI-WATE	Galena	W	-	-	-	Messina
HK-84	Viscosity breaker	TH	-	-	-	Osca
HME ENERGIZER	Selective non-ionic surface active agents, gilsonite & asphalt wetting ager	SU	-	-	-	Montello
HOGWASH	Wellbore cleanup fl./oil & water based muds	FL	SU	P	-	Well-Flow
HOLECOAT	Water dispersible asphaltic blend	SH	FR	LU	-	M-I
HOLE PAK	Bentonite based grout	LO	-	-	-	GEO
HOLE-SEAL-II	Fibrous LCM	LO	-	-	-	Messina
HOLE-SEAL-OB	Fibrous LCM	LO	-	-	-	Messina
HOSTADRILL 2825	Synthetic, high temp. polymer	FL	TE	SH	-	Clariant
HOSTADRILL 4008	Synthetic, high temp. polymer	FL	TE	SH	-	Clariant
HOSTAFLUID 4120	Acetal-based liq. for pseudo-oil muds, biodegradable	-	-	-	-	Clariant
HOTGEL	Sepiolite	V	FR	-	-	Messina
HPG LUBE	High performance graphite	LU	FR	-	-	DrillTech
HP LUBE	Extreme pressure lubricant	LU	-	-	-	EMEC
HSS	Envr. acceptable zinc-based H2S scavenger	CO	-	-	-	EMEC
HTFLC	High temperature fluid loss pill	LO	FR	W	-	Osca
HTI-400	High temp. brine corr. inhibitor	CO	-	-	-	Osca
HT POLYMER	Modified organic polymer	FR	-	-	-	EMEC
HYBILD 201	Oil-based mud rheology modifier	V	-	-	-	BP
HYCAL I	Calcium chloride solution (to 11.6ppg)	W	SH	-	-	Osca

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
HYCAL II	Calcium chloride/calcium bromide sol'n (to 15.1ppg)	W	SH	-	-	Osca
HYCAL III	Calcium chloride/bromide-zinc bromide sol'n (to 19.2ppg)	W	SH	-	-	Osca
HYCAL IIISB	Calcium bromide/zinc bromide sol'n (to 19.2ppg)	W	SH	-	-	Osca
HYCAL IISB	Calcium bromide solution (to 15.3ppg)	W	SH	-	-	Osca
HY-DENS STABILIZER	Water miscible glycol ether	SU	-	-	-	TBC-Brinadd
HYDRATED LIME	Hydrated lime	A	SH	-	-	AVA
HYDRO MAG	pH buffer for fresh & brine waters	A	-	-	-	Deep South
HYDRO-WET	Surfactant wetting agent/dispersant	SU	-	-	-	Messina
HYFORM	Potassium formate brine	W	SH	-	-	BP
HYMUL	Non-ionic surfactant	SU	E	-	-	Dowell
HYPAC	Potassium acetate brine	W	SH	-	-	BP
HYPERDRILL AE 843	Emulsion polyacrylamide total flocculant	FL	-	-	-	Hychem
HYPERDRILL AE 853	Emulsion polyacrylamide shale inhibitor, viscosifier	SH	V	FR	-	Hychem
HYPERDRILL AE 856	Low M.W. PHPA shale inhibitor	SH	-	-	-	Hychem
HYPERDRILL AE 859	50% active liquid PHPA, shale inhibitor, viscosifier	SH	V	FR	-	Hychem
HYPERDRILL AF 204	Dry polyacrylamide total flocculant	FL	-	-	-	Hychem
HYPERDRILL AF 207	Dry polyacrylamide shale inhibitor, visicosifier	SH	V	FR	-	Hychem
HYPERDRILL AF 207S	Dispersible PHPA shale inhibitor, viscosifier	SH	V	FR	-	Hychem
HYPERDRILL AF 211	Dry polyacrylate bentonite extender	V	-	-	-	Hychem
HYPERDRILL AF 215	Dry selective flocculant and bentonite extender	V	FL	-	-	Hychem
HYPERDRILL AF 247	Low M.W. PHPA shale inhibitor	SH	-	-	-	Hychem
HYPERDRILL AF 250	Sodium polyacrylate	FR	SH	TE	-	Hychem
HYPERDRILL CE 809	Emulsion cationic flocculant	FL	-	-	-	Hychem
HYPERDRILL CP 905	Dry cationic flocculant	FL	-	-	-	Hychem
HYPERDRILL DF 2010	Liquid polymeric thinner	TH	-	-	-	Hychem
HYPERDRILL DF 2020	Liquid contaminant tolerant thinner	TH	-	-	-	Hychem
HYPERDRILL NE 823	Emulsion polyacrylamide selective flocculant	FL	-	-	-	Hychem
HYPERDRILL NF 201	Dry polyacrylamide selective flocculant	FL	-	-	-	Hychem
HYSAL	Sized salt and polymer	FR	LO	-	-	Osca
HYSAL II	Sodium chloride sized salts and polymers	W	LO	-	-	AVA
HYSAL ACTIVATOR	Water miscible polar additive	SU	-	-	-	TBC-Brinadd
HYSAL HD	Polymer & sized salt blend	FL	LO	-	-	TBC-Brinadd
HYSAL SUPERFINE	Polymer & sized salt blend	FR	LO	-	-	TBC-Brinadd
HY-SEAL	Shredded organic fibers	LO	-	-	-	Baroid
HYVIS	Stabilized sub-micron oxide	V	-	-	-	TBC-Brinadd
HYVIS-L	Stabilized sub-micron oxide liq conc.	V	-	-	-	TBC-Brinadd
HYZINC	Zinc bromide solution (to 21.5 ppg)	W	SH	-	-	Osca
IDBEADS	Polystyrene beads for lubricity	LU	-	-	-	Dowell
IDBOND	Anionic water soluble polymeric shale encapsulator	SH	-	-	-	Dowell
IDBOND P	Anionic powdered polymeric shale encapsulator	SH	-	-	-	Dowell
IDBRIDGE CUSTOM	Oil-soluble, graded resin bridging agent	FR	LO	-	-	Dowell
IDBRIDGE L	Oil-soluble resin bridging agent in liq. suspension	FR	LO	-	-	Dowell
IDBRINE P	Completion fluid for H2S and CO2 environments	W	CO	A	-	Dowell
IDCAP	Polymeric shale inhibitor	SH	FR	-	-	Dowell
IDCAP D	Polymeric shale inhibitor for dispersible shales	SH	FR	-	-	Dowell
IDCARB 75	Acid-soluble graded calcium carbonate	W	FR	LO	-	Dowell
IDCARB 150	Acid-soluble graded calcium carbonate	FR	LO	W	-	Dowell
IDCARB CUSTOM	Custom ground acid-soluble calcium carbonate	FR	LO	W	-	Dowell
IDCIDE L	Non-phenolic liquid bactericide	B	-	-	-	Dowell
IDCIDE P	Granular bactericide	B	-	-	-	Dowell
IDF-FLR	Pure grade, high visc., polyanionic cellulose	V	FR	-	-	Dowell
IDF-FLR XL	Pure grade, low visc., polyanionic cellulose	FR	-	-	-	Dowell
IDFILM 220X	General purpose film-forming corr. inh.	CO	-	-	-	Dowell
IDFILM 620	Corrosion inhibitor for pipeyards and storage	CO	-	-	-	Dowell
IDFILM 820X	Combined corr. inh., oxygen scavenger and biocide	CO	B	-	-	Dowell
IDFLO	Non-viscosifying polymeric fluid loss reducer	FR	-	-	-	Dowell
IDFLO B	Non-viscosifying polymer with biocide	FR	-	-	-	Dowell
IDFLOC	Liq., high M.W. flocculant	FL	-	-	-	Dowell
IDFLO HTR	High temp. stable polymeric fluid loss reducer	FR	-	-	-	Dowell
IDFLO LT	Non-viscosifying polymeric fluid loss reducer	FR	-	-	-	Dowell
IDFREE	Weightable surfactant blend for stuck pipe	P	SU	-	-	Dowell
IDFREE NT	Water-based stuck-pipe release agent	P	-	-	-	Dowell
IDFREE (UW)	Unweighted surfactant blend for freeing pipe	P	SU	-	-	Dowell
IDHEC	Synthetic cellulosic polymer for rheological control	V	FR	-	-	Dowell

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
IDHEC L	Liquid HEC suspension	V	FR	-	-	Dowell
IDLUBE	Vegetable oil derived lubricant	LU	-	-	-	Dowell
IDLUDE XL	High-performance lubricant	LU	CO	SH	-	Dowell
IDPAC	High performance, semi-purified PAC	V	FR	-	-	Dowell
IDPAC RD	Readily dispersible PAC for easy mixing	V	FR	-	-	Dowell
IDPAC XL	High performance, semi-purified low M.W. PAC	FR	-	-	-	Dowell
IDPLEX 100	Scale inhibitor for barium and strontium scale	SU	-	-	-	Dowell
IDSALT 75	Sized salt weighting agent	W	-	-	-	Dowell
IDSALT FK	Potassium salt of organic acid	W	SH	-	-	Dowell
IDSALT FS	Sodium salt of organic acid	W	-	-	-	Dowell
IDSCAV 110	Liquid oxygen scavenger	CO	-	-	-	Dowell
IDSCAV 210	Powdered oxygen scavenger	CO	-	-	-	Dowell
IDSCAV 510	Ox scav. and corr. inh. compatible with Ca and Zn	CO	-	-	-	Dowell
IDSCAV ES	Zinc-free H2S remover for envr. sensitive areas	CO	-	-	-	Dowell
IDSEAL	Mixture of fibers, granules and flakes	LO	-	-	-	Dowell
IDSPERSE XT	Chrome free, salt tolerant liquid dispersant	TH	FR	-	-	Dowell
IDSURF	Concentrated, non-ionic surfactant	SU	-	-	-	Dowell
IDTEX	Processed hydrocarbon for shale stabilization	SH	FR	-	-	Dowell
IDTEX W	Partially soluble sulfonated hydrocarbon	SH	FR	-	-	Dowell
IDTHIN 500	Synthetic polymer for high temp. muds	TH	FR	-	-	Dowell
IDVIS	Polymeric viscosifier	V	FR	-	-	Dowell
IDVIS L	Pure xanthan gum in liq. solution	V	-	-	-	Dowell
IDZAC	Chelated H2S remover	CO	-	-	-	Dowell
IDZAC L	Liq., chelated, zinc-based H2S remover	CO	-	-	-	Dowell
IMPERMEX	Pre-gelatinized starch	FR	-	-	-	Baroid
INCORR	Water dispersible corrosion inhibitor	CO	-	-	-	AVA
INCORR BD	Bromide brine corrosion inhibitor	CO	-	-	-	AVA
INCORR BHT	HT corrosion inhibitor	CO	-	-	-	AVA
INCORR OS	Oil soluble corrosion inhibitor	CO	-	-	-	AVA
INHIBISAL ULTRA	Low molecular weight polyglycol	SH	LU	-	-	TBC-Brinadd
INICOR A	Corr. inhibitor, oil soluble, water dispersible	CO	-	-	-	Lamberti
INICOR BF	Corr. inhibitor, water and acid soluble	CO	-	-	-	Lamberti
INICOR BN	Corr. inhibitor, water soluble	CO	-	-	-	Lamberti
INICOR MF27	Corr. inhibitor, oil soluble	CO	-	-	-	Lamberti
INICOR R200	Corr. inhibitor, oil soluble	CO	-	-	-	Lamberti
INICOR W380	Corr. inhibitor/biocide, water soluble	CO	-	-	-	Lamberti
INSTAVIS	Non-ionic high visc. polymer for top-hole drlg	V	FR	-	-	Dowell
INSULGEL	Insulating packer fluid	TE	FR	-	-	Osca
INTASOL	Specially ground calcium carbonate, F.M&C	LO	-	-	-	AVA
INTERDRILL DEFLOC	Polymeric deflocculant	TH	-	-	-	Dowell
INTERDRILL	Emulsifier	E	FR	-	-	Dowell
INTERDRILL EMUL D	Rheological modifier	V	E	FR	-	Dowell
INTERDRILL EMUL HT	Primary emulsifier	E	FR	-	-	Dowell
INTERDRILL FL	Fluid loss reducer & secondary emulsifier	FR	E	-	-	Dowell
INTERDRILL NA	Non-asphaltic fluid loss reducer	FR	-	-	-	Dowell
INTERDRILL OW	Oil wetting agent	SU	TH	-	-	Dowell
INTERDRILL RM	Rheological modifier	V	E	FR	-	Dowell
INTERDRILL S	Fluid-loss reducer	FR	-	-	-	Dowell
INTERDRILL VISTONE	Organophilic clay viscosifier	V	FR	-	-	Dowell
INTERFLOW	Oil emulsifier for water-base mud	E	V	-	-	BH Inteq
INTERSOLV H	Clean-up agent for dissolving CaCO3 pills	CA	-	-	-	Dowell
INTERSOLV XFE	Barite dissolver for perforating fluids	-	-	-	-	Dowell
INTOIL P	Co-polymer filtration control additive	FR	V	-	-	BH Inteq
INTOIL S	Surfactant for SBM/OBM	FR	TH	-	-	BH Inteq
INVERMUL	Oil-mud emulsifier	E	SU	-	-	Baroid
INVERMUL NT	Oil-mud emulsifier	E	SU	-	-	Baroid
INVERSOR BASICO	Primary emulsifier	E	FR	V	-	Bolland
INVERSOR BASICO XP-S1	Oil wetting agent	SU	E	-	-	Bolland
IRONITE SPONGE	H2S scavenger	CO	W	-	-	Ironite
ISO-TEQ	Olefin base for synthetic fluids	SB	-	-	-	BH Inteq
JET-BORE KLEEN	Wellbore clean-out fluid	SU	-	-	-	Chemject
JET CIDE SERIES	Bactericide, glutaraldehyde, quat, thiocarbamide	B	-	-	-	Chemject
JET CIDE 250	Glutaraldehyde 25%	B	-	-	-	Chemject
JET CIDE 300	Glutaraldehyde 50%	B	-	-	-	Chemject
JET DEFOAM SERIES	Defoamer (custom formulations)	D	-	-	-	Chemject
JET DRILFOAM 2	Brine drilling foamer	FO	-	-	-	Chemject
JET EMULZ 1	Oil mud emulsifier, primary	E	SU	SH	-	Chemject
JET EMULZ 2	Oil mud emulsifier, secondary/oil wetter	E	SU	SH	-	Chemject
JET HIB	Corr. inh. for low density brines	CO	-	-	-	Chemject
JET HIB DRIL-O	Corr. inh., oil soluble for drill pipe	CO	-	-	-	Chemject
JET HIB DRIL-W	Corr. inh., water soluble	CO	-	-	-	Chemject
JET HIB-PAK	Three-in-one corr. inh., packer fluid	CO	-	-	-	Chemject
JET LUBE XPG	Lubricant/ROP Improver	LU	SH	-	-	Chemject
JET-NO MULZ	Surfactant for emulsion & water block prevention	-	-	-	-	Chemject
JET-NO OX	Oxygen scavenger	CO	-	-	-	Chemject
JET-NO SCALE	Scale inhibitor	-	-	-	-	Chemject
JET OXYNOL 100	Wide range polyglycol lubricant/shale control	LU	SH	-	-	Chemject

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
JET POLYOXYNOL 200	Polyglycol/polymer lubricant/shale control	LU	SH	-	-	Chemject
JET-SOL	Well displacement clean-up fluid	SU	FL	-	-	Chemject
JET SPACE I	Spacer mud removal	SU	-	-	-	Chemject
JET SPACE II	Spacer wash	V	SU	-	-	Chemject
JET SPACE III	Spacer sweep	V	SU	-	-	Chemject
JET-SPERSE	Dispersant-acrylate	TH	-	-	-	Chemject
JET-SPOT	Lubricant, freeing stuck pipe	P	-	-	-	Chemject
JET SURF	Surfactant	SU	-	-	-	Chemject
JET-WASH	Alkaline surfactant	SU	-	-	-	Chemject
K-17	Potassium lignite	TH	FR	SH	-	M-I
K-52	Potassium supplement	SH	-	-	-	M-I
KAN-FLOC 5B	Low M.W., low anionic flocculant	FL	-	-	-	Kem-Tron
KAN-FLOC 500 M	Dewatering polymer	FL	-	-	-	Kem-Tron
KAN-FLOC 3504 S2	Dewatering polymer	FL	-	-	-	Kem-Tron
KAN-FLOC SELECT	Non-ionic selective flocculant	FL	-	-	-	Kem-Tron
KAT-DRILL	Low charge, high M.W. cationic polymer	SH	FR	-	-	BH Inteq
KD-40	Drilling mud corrosion inhibitor (anionic)	CO	-	-	-	Aquaness
KD-700	Drilling mud corrosion inhibitor (anionic)	CO	-	-	-	Aquaness
KELZAN L	Drilling grade xanthan gum	V	-	-	-	Kelco
KELZAN XC POLYMER	Xanthan gum	V	-	-	-	Kelco
KELZAN XCD POLYMER	Dispersible xanthan gum	V	-	-	-	Kelco
KELZAN XCD HV POLYMER	High viscosity dispersible xanthan gum	V	-	-	-	Kelco
KELZAN XCD HV	High viscosity xanthan gum	V	-	-	-	Ziegler
KELZAN XC HV POLYMER	High viscosity xanthan gum	V	-	-	-	Kelco
KEMFLO	High temperature fluid loss reducer	FR	TH	-	-	Flowsa
KEMIRA CC-TECH	Calcium chloride liquid & solid	W	V	-	-	Kemira Kemi
KEM-PAK ULV	Carboxymethylated polymer	FR	LU	-	-	Kem-Tron
KEM-PA S	Synthetic anionic polymer	SH	FR	V	-	Kem-Tron
KEM PA S (L)	Synthetic anionic polymer-liquid	SH	FR	V	-	Kem-Tron
KEM-SEAL	Copolymer for high temp. filtration control	FR	V	-	-	BH Inteq
KEM-THIN 5A	Anionic systhetic copolymer-dry	TH	-	-	-	Kem-Tron
KEM-THIN SUPER	Anionic synthetic copolymer-liq.	TH	-	-	-	Kem-Tron
KEM-X	Synthetic polymer	V	FR	-	-	Kem-Tron
K-FLOC F190 S2	Dewatering polymer	FL	-	-	-	Kem-Tron
KLA-CURE	Hydration suppressant	SH	-	-	-	M-I
KLA-CURE II	Shale inhibitor-surfactant blend	SH	SU	-	-	M-I
KLA-GARD	Shale stabilizer-inhibitor	SH	FL	-	-	M-I
KLAY FLOC	Non-ionic flocculant (broad spectrum)	FL	-	-	-	Barclay
KLAY TEMP	High temp. polymeric thinner	TH	TE	FR	-	Barclay
KLAY TEX	Sulfonate-based modified asphalt	SH	LU	TE	-	Barclay
KLEEN-BAR	Barium carbonate	CO	W	-	-	Messina
KLEEN-BLOCK	Sized carbonates	LO	FR	-	-	Messina
KLEEN-BLOCK X	Maximum sized carbonates	LO	-	-	-	Messina
KLEEN-BRIDGE	Oil-soluble resin	FL	LO	-	-	Messina
KLEEN-CON	Low toxicity invert emulsifier	E	SU	FR	-	Messina
KLEEN-DRIL	Polymer blend	FR	V	-	-	Messina
KLEEN-MUL-L	Low toxicity invert emulsifier	E	FR	TE	-	Messina
KLEEN-OIL	Low toxicity base oil	-	-	-	-	Messina
KLEEN-PAK	Polymer packer fluid	V	A	FR	-	Messina
KLEEN-PIL	Polymer blend	LO	FR	-	-	Messina
KLEEN-SEAL	Polymer/carbonate blend	LO	-	-	-	Messina
KLEEN-SWEEP	Displacement fluid	SU	-	-	-	Messina
KLEEN-THIN	Surfactant; lwo-tox invert muds	TH	SU	-	-	Messina
KLEEN-VIS	Polymer/carbonate blend	V	FR	-	-	Messina
KLEEN-VIS-2	Low residue polysaccharide	V	FR	-	-	Messina
KLEEN-VIS X	Non-damaging polymer	V	FR	-	-	Messina
KLEEN-WATE	Heavy clear brines	W	-	-	-	Messina
KLEEN-WET	Wetting agent; low-tox invert muds	SU	W	-	-	Messina
K-LIG	Potassium lignite	TH	FR	E	-	Baroid
K-LIGNITE	Potassium chrome lignite	FR	SH	TH	-	EMEC
KO 1200	Water soluble zinc chelate for H2S	SU	-	-	-	Deep South
K-TROL	Potassium based inhibitor	SH	A	-	-	Ambar
KWIKCLEAN	Brine clarification additive	SU	-	-	-	Dowell
KWIKSEAL	Blended fibrous/granular LCM	LO	-	-	-	BH Inteq
KWIKSEAL	Loss circulation material	LO	-	-	-	Kelco
KWIK-SEAL	Blended LCM	LO	-	-	-	Messina
KWIKSEAL LCM	Optimum blend LCM	LO	-	-	-	Baker
KWIK-THIK	Extra high yield bentonite	V	FR	FL	-	M-I
LAMGUM 200	High visc. guar gum	V	-	-	-	Lamberti
LAMGUM HPG	Hydroxypropyl guar	V	-	-	-	Lamberti
LAMOX SC	Oxygen remover	CO	-	-	-	Lamberti
LAMPAC CHL	Premium grade, low visc. polyanionic cellulose	FR	SH	-	-	Lamberti
LAMPAC CHR	Premium grade, high visc. polyanionic cellulose	FR	SH	V	-	Lamberti
LAMPAC LOVIS	Pure grade, low visc. polyanionic cellulose	FR	SH	-	-	Lamberti
LAMPAC REGULAR	Pure grade, high visc. polyanionic cellulose	FR	SH	V	-	Lamberti
LAMSPERSE 100	Chrome free dsipersant, synthetic thinner	TH	TE	FR	-	Lamberti
LAMSPERSE 300	High-temp copolymer thinner	TH	TE	FR	-	Lamberti

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
L.C.B.	Liquid carbon black	SH	LU	TE	-	Advanced
LCM MICA	Coarse and fine mica	LO	-	-	-	Pacer
LD-8	Non-hydrocarbon defoamer for wtr-base fluids	D	-	-	-	BH Inteq
LD-9	Non-hydrocarbon defoamer for wtr-base fluids	D	-	-	-	BH Inteq
LE BASE	Olefin base fluid	-	-	-	-	Baroid
LE MUL	Emulsifier for synthetic fluids	E	FR	SU	-	Baroid
LEP 55	Extreme pressure lubricant	LU	FR	-	-	Bolland
LE SUPERMUL	Emulsifier for synthetic fluids	E	SU	-	-	Baroid
LE THIN	Dispersant for synthetic fluids	TH	-	-	-	Baroid
LIBONITE	Modified boron lignite	TH	FR	E	-	Telnite
LIBROL	Surfactant to free pipe	P	SU	-	-	Bolland
LIGCO	Ground leonardite	FR	TH	-	-	BH Inteq
LIGCON	Causticized leonardite	FR	TH	-	-	BH Inteq
LIGNAS-10	Polyanionic lignin dispersant, iron	TH	-	-	-	Telnite
LIGNATE	Mod. lignite/lignosulfonate compound	TH	FR	E	-	Telnite
LIGNATE K	Mod. potassium lignite/lignosulfonate compound	TH	FR	E	-	Telnite
LIGNOSULFONATE	Chrome lignosulfonate	TH	TE	-	-	Baker
LIGNO-THIN	Ferrochrome lignosulfonate	TH	FR	-	-	Baroid
LIGNOX	Lime mud thinner	TH	SH	-	-	Baroid
LIGTHIN	Modified lignin	TH	-	-	-	M-I
LIME	Hydrated lime	A	B	CO	-	Most cos.
LINTAX	Blend of vegetable fibers	LO	-	-	-	AVA
LIQUA-BEADS	Copolymer polyols	LU	SH	-	-	Advanced
LIQUID CASING	Micronized polycrystalline material	LO	SH	LU	-	Liquid Csg.
LIQUID CASING II	Micronized polycrystalline material, less than 170 mesh	LO	SH	LU	-	Liquid Csg.
LIQUID HEC	Liq. high visc., pure hydroxyethyl cellulosic polymer	V	FR	-	-	Drill Spec.
LIQUID GUAR E	Liquid viscosifier using unmodified guar	V	-	-	-	Deep South
LIQUID POLYMER	Polyacrylamide	TH	SH	FR	-	General
LIQUI-DRIL	ROP enhancer	LU	-	-	-	Baroid
LIQUID SCRAPER	Weighted spacer sys. for mud displacement	SU	-	-	-	Well-Flow
LIQUID VIS E	Hydroxyethyl celluslose polymer	V	-	-	-	Deep South
LIQUI-GIL	Shale stabilizer & H.T. fluid loss control	SH	FR	P	-	Global
LIQUI-SAFE B	Liquid H2S extractor	CO	-	-	-	Drilpro
LIQUI-THIN HT	Liquid thinner	TH	-	-	-	Drilpro
LIQUI-VIS EP	Non-ionic polymer dispersion	V	-	-	-	Baroid
LIQUI-VIS NT	Non-ionic polymer dispersion	-	-	-	-	Baroid
LITE PLUG FINE	Sized borate salts	W	LO	-	-	AVA
LITEPLUG	Sized borate salts	W	LO	-	-	AVA
LITEPLUG X	Sized borate salts	W	LO	-	-	AVA
LITESEAL	Blend of polymers and sized borate salts	V	LO	-	-	AVA
LITHIUM CHLORIDE	Tracer for determining filtration invasion	SH	-	-	-	Most cos.
LITHIUM HYPOCHLORITE	Breaker for biopolymers	-	-	-	-	Baker
LO-RM	Rheological modifier for oil-based muds	V	E	FR	-	Dowell
LO-WATE	Acid soluble, powdered calcium carbonate	W	FR	LO	-	M-I
LP 701	High M. W. viscosifier & shale inhibitor	V	SH	FR	-	GEO
LST-MD	Liquid sulfonated asphalt	SH	FR	-	-	Newpark
LUBE-100	Low toxicity lubricant	LU	SH	-	-	M-I
LUBE-167	Low toxicity lubricant	LU	SU	SH	-	M-I
LUBE 177	Water soluble lubricant	LU	-	-	-	M-I
LUBETEX	Nonpolluting oils & surfactant blend	LU	-	-	-	TBC-Brinadd
LUBE ZOL 1000	Water-base mud & brine lubricant	LU	-	-	-	Lubrizol
LUBE ZOL 1001	Oil mud lubricant	LU	-	-	-	Lubrizol
LUBE ZOL 1030	Water base mud lubricant	LU	-	-	-	Lubrizol
LUBRA-BEADS	Co-polymer bead lubricant	LU	-	-	-	Baroid
LUBRA-FIBER	Severe loss LCM	LO	-	-	-	Sun
LUBRA-GLIDE	Mechanical solid lubricant	LU	-	-	-	Sun
LUBRA-SEAL	Cellulosic blend	LO	FR	-	-	Sun
LUBRICANT CD	Effective, all purpose lubricant	LU	TE	FR	-	Lamberti
LUBRICANT EP	Extreme pressure lubricant	LU	-	-	-	Lamberti
LUBRICANT F/458	High temperature lubricant	LU	SU	-	-	Lamberti
LUBRICANT RB	Biodegradable, non-toxic lubricant	LU	-	-	-	Lamberti
LUBRICANT WS	Water soluble lubricant	LU	SU	-	-	Lamberti
LUBRI-FILM	Extreme pressure lubricant	LU	CO	-	-	BH Inteq
LUB-SOL	Powdered lubricant	LU	SH	-	-	Bolland
LVO-69	Organophilic clay and gelling agent	V	FR	-	-	M-I
MAGIC FOAM	Anionic surfactant foaming agent, liq.	FO	SU	-	-	Anchor
MAGMA FIBER FINE	Acid soluble mineral fiber LCM	LO	V	FR	-	LCS
MAGMA FIBER REGULAR	Acid soluble mineral fiber LCM	LO	V	FR	-	LCS
MAGNACIDE 407	Bactericide for water injection, packer fluids, drilling muds	B	-	-	-	Aquaness
MAGNA-LUBE	Vertical reach lubricant/enhancer	LU	-	-	-	Integrity
MAGNELOG	Magnetic logging additive, tracer for muds	-	-	-	-	Messina
MAGNE-SET	Acid soluble cement	LO	-	-	-	BH Inteq
MAGNESIUM OXIDE	Magnesium oxide	A	-	-	-	AVA
MAGOX	Magnesium oxide	A	FL	SH	-	Most cos.
MARITE	Micaceous hematite	W	-	-	-	Messina
MASTERGEL	Wyoming bentonite	V	FR	-	-	General
MASTER LIG	Lignite based thinner	FL	TH	E	-	General
MAXIASFALT	Asphaltite shale inhibitor	SH	FR	LU	-	Coastal Drlg Fl

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
MAXIDFOAM	Defoamer, all purpose	D	-	-	-	Coastal Drlg Fl
MAXIFLOW	Potassium salt polyscrylate, liq. deflocculant	TH	FR	-	-	Coastal Drlg Fl
MAXIFIBER	Cellulose LCM fiber	LO	V	-	-	Coastal Drlg Fl
MAXI-LIG	Blend of gilsonite, liq. suspension	SH	FR	LU	-	Coastal Drlg Fl
MAXILO-250	Polyanionic cellulose	FR	V	SH	-	Coastal Drlg Fl
MAXILUBE	Environmentally safe lubricant	LU	-	-	-	Coastal Drlg Fl
MAXISEAL	Combination fiber, flake & granules	LO	-	-	-	General
MAXISPOT	Glycol base spotting fluid additive	P	-	-	-	Coastal Drlg Fl
MAXITONE	Polyol lubricant & shale inhibitor	SH	LU	-	-	Coastal Drlg Fl
MAXIVIS	Polyacrylamide viscosifier and shale controller	V	SH	FR	-	Coastal Drlg Fl
MAYCO-CALWATE	Calcium carbonate	W	-	-	-	Mayco
MAYCO-CARB	Non-thixotropic polymeric blend, graded and sized carbonates	V	FR	SH	-	Mayco
MAYCO-CORCIDE	Corr. inh., oxygen scavenger, biocide	B	CO	-	-	Mayco
MAYCO-DEFOAM	All-purpose defoamer	D	-	-	-	Mayco
MAYCO-FLC	Blend of selected non-ionic polymers for fluid loss control	FR	FL	-	-	Mayco
MAYCO-FLOW	Blend of selected polymers, lignosulfonates & sized calcium carbonates	FR	TH	-	-	Mayco
MAYCO-HELP	Polymeric temperature extender	TE	-	-	-	Mayco
MAYCO-KLAYTROL	Blend of rigid non-ionic polymer, chloride free, potassium and ammonium	SH	FR	-	-	Mayco
MAYCO-LIVIS	Liquid HEC polymer	V	-	-	-	Mayco
MAYCO-MAD SEAL	Acid-degradable blend of granules, flakes and fibrous material	LO	-	-	-	Mayco
MAYCO-MAPP	Blend of non-ionic drilling polymers	V	FR	-	-	Mayco
MAYCO-pH BUFFER	Magnesium oxide	A	-	-	-	Mayco
MAYCO-SEAL	Graded & sized calcium carbonates	LO	FR	-	-	Mayco
MAYCO-SEAL COARSE	Graded & sized calcium carbonates	LO	FR	-	-	Mayco
MAYCO-SEAL MEDIUM	Graded & sized calcium carbonates	LO	-	-	-	Mayco
MAYCO-SLURRY	Polymers, lignosulfonates and graded/sized calcium carbonates	LO	FR	-	-	Mayco
MAYCO-TREAT	Surfactants for emulsion & water block prevention	SU	-	-	-	Mayco
MAYCO-VIS	Thixotropic polymers & sized calcium carbonates	V	FR	-	-	Mayco
MAYCO-VIS EXTRA	Free-flowing HEC	V	-	-	-	Mayco
MCAT	Cationic encapsulating polymer	SH	V	FR	-	M-I
MCAT-A	Cationic swelling suppression polymer	SH	-	-	-	M-I
MD	Drilling detergent	SU	-	-	-	Flowsa
MEGA-LINK	LCM crosslinker	LO	A	-	-	Messina
MEGA-SEAL	Polymer LCM	LO	-	-	-	Messina
MESUCO-BAR	Barite	W	-	-	-	Messina
MESUCO-BEN	OCMA bentonite	V	FR	LU	-	Messina
MESUCO-BEN-M	Special drilling clay	V	FR	LU	-	Messina
MESUCO-CL	Causticized lignite	TH	E	FR	-	Messina
MESUCO-CRCL	Chrome causticized lignite	TH	TE	E	-	Messina
MESUCO-CRL	Chrome lignite	TE	TH	FL	-	Messina
MESUCO-FIBER	Fibrous LCM	LO	-	-	-	Messina
MESUCO-FLAKE	Cellophane flakes	LO	-	-	-	Messina
MESUCO-FOAM	Foaming agent	FO	-	-	-	Messina
MESUCO-GEL	API bentonite	V	FR	LU	-	Messina
MESUCO-HEC	Hydroxyethyl cellulose polymer	V	FL	-	-	Messina
MESUCO-KCRL	Potassium chrome lignite	TE	TH	FL	-	Messina
MESUCO-KL	Potassium humate	TH	SH	E	-	Messina
MESUCO-LIG	Lignite	TH	E	FR	-	Messina
MESUCO-PAC	Tech. grade PAC	FR	V	SH	-	Messina
MESUCO-PLUG	Ground nut shells	LO	LU	-	-	Messina
MESUCO-SALT-CLAY	Attapulgite	V	-	-	-	Messina
MESUCO-SEAL	Blended LCM	LO	-	-	-	Messina
MESUCO-SORB	Powdered H2S remover	CO	-	-	-	Messina
MESUCO-STARCH	Drilling starch	FR	-	-	-	Messina
MESUCO-SUPER-GEL	Extended bentonite	V	FR	LU	-	Messina
MF-1	Non-ionic polyacrylamide	FL	SH	-	-	Kelco
MF-55	Non-ionic polyacrylamide emulsion	SH	FL	-	-	Kelco
M-I BAR	Barite, API spec	W	-	-	-	M-I
MICA	Mica flakes in various grades	LO	-	-	-	Most cos.
MICATEX	Sized mica flakes	LO	-	-	-	Baroid
MICRO LUBE	Pulverized gilsonite, non-treated	SH	LU	-	-	Montello
MICRO-SEAL	Liq. shale stabilizer, mud conditioner	SH	LU	-	-	Messina
M-I FREE	Pipe freeing agent with KCl and citric acid	P	-	-	-	M-I
M-I GEL	Wyoming bentonite, API spec	V	FR	-	-	M-I
MIL-BAR	Barite meeting API specs	W	-	-	-	BH Inteq
MIL-BEN	Bentonite, OCMA spec. DFCP4	V	FR	-	-	BH Inteq
MIL-CARB	Sized ground calcium carbonate	LO	V	FR	-	BH Inteq
MIL-CLEAN	Water soluble, biodegradable detergent	SU	-	-	-	BH Inteq
MIL-FIBER	Shredded cane fiber	LO	-	-	-	BH Inteq
MILFLAKE	Shredded cellophane	LO	-	-	-	BH Inteq
MIL-FREE	Vegetable oil base spotting fluid	P	-	-	-	BH Inteq
MIL-GARD	H2S extractor (basic zinc carbonate)	CO	-	-	-	BH Inteq
MIL-GARD L	Liquid zinc chelate (H2S extractor)	CO	-	-	-	BH Inteq
MIL-GARD R	Sulfide extractor (soluble chelated zinc)	CO	-	-	-	BH Inteq
MILGEL	API spec Wyoming bentonite	V	FR	-	-	BH Inteq

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
MILGEL NT	Untreated, API spec Wyo. bentonite	V	FR	-	-	BH Inteq
MIL-LUBE	Vegetable oil-base boundary and extreme pressure lubr.	LU	-	-	-	BH Inteq
MIL-PAC	Polyanionic cellulose	FR	V	-	-	BH Inteq
MIL-PAC LV	Low visc. polyanionic cellulose	FR	V	-	-	BH Inteq
MILPARK MD	Drilling mud detergent	SU	E	-	-	BH Inteq
MIL-PLUG	Ground pecan shells	LO	-	-	-	BH Inteq
MIL-REZ	Polyanionic lignin resin polymer	FR	-	-	-	BH Inteq
MIL-SEAL	Blended LCM product	LO	-	-	-	BH Inteq
MIL-SPOT 2	Conc. for invert emulsion weighted spotting fluid	P	-	-	-	BH Inteq
MILSTARCH	Pre-gelatinized starch	FR	V	-	-	BH Inteq
MIL-TEMP	Sulfonated styrene, maleic anhydrite co-polymer to stabilize flow properti	TH	FR	-	-	BH Inteq
M-I LUBE	General purpose lubricant	LU	-	-	-	M-I
M-I LUBE ENV	Low toxicity general purpose lubr.	LU	-	-	-	M-I
MINERAL-LUBE	ROP enhancer	LU	-	-	-	Integrity
MIN-LOSS	Acid-soluble polymer	FR	-	-	-	Drilpro
M-I PAC R	Pure PAC polymer, regular grade	FR	V	SH	-	M-I
M-I PAC SR	High viscosity PAC, semi-pure grade	FR	V	SH	-	M-I
M-I PAC SUL	Low viscosity PAC, semi-pure grade	FR	SH	-	-	M-I
M-I PAC UL	Pure PAC polymer, low viscosity	FR	SH	-	-	M-I
M-I QUEBRACHO	Tannin extract & lignite blend	TH	FR	E	-	M-I
M-I SEAL	All purpose lost circ. blend	LO	-	-	-	M-I
M-I-X II	Ground cellulose LCM and plugging agent	LO	FR	-	-	M-I
MODIBAR	High density (4.3) barite	W	-	-	-	BDC
MODICIDE 340	Liq. bactericide for mud and H2S treatment	B	CO	-	-	BDC
MODIFOAM 735	High elasticity foam for rotary and hammer drilling	FO	-	-	-	BDC
MODIMUD 800	Instant drilling mud with bactericide	V	FL	B	-	BDC
MODIPOL 600	CMC based polymer mix with extreme high visc.	V	FL	-	-	BDC
MODIPOL LV	Low viscosity CMC	FL	-	-	-	BDC
MOLEN'S CALCICARB	Weighting agent	W	-	-	-	Molen
MON PAAL	Dry polymer, PHPA, shale stabilizer	SH	FL	FR	-	Montello
MON PAC	Polyanionic cellulose	FR	V	SH	-	Montello
MON PAC ULTRA LO	Low visc. polyanionic cellulose	FR	SH	-	-	Montello
MOR-REX 1920	Deflocculant, calcium control agent for lime muds	TH	SH	FL	-	Horizon
MUDDET	Non-ionic detergent blend	SU	LU	E	-	Messina
MUD FIBER	Fibrous LCM	LO	-	-	-	Dowell
MUD-FLUSH	Wellbore wash for completions	SU	-	-	-	Progress
MUD-LINER COARSE	Cellulosic LCM & seepage control	LO	-	-	-	Baker
MUD-LINER FINE	Cellulosic LCM & seepage control	LO	-	-	-	Baker
MUD-LINER G	Carbon based seepage loss agent, friction reducer	LO	FR	-	-	Baker
MUD-LINER MEDIUM	Cellulosic LCM & seepage control	LO	-	-	-	Baker
MUD-MUL	Blended surfactant	SU	E	LU	-	Messina
MUD-PAC	Corr. inh. for solids-laden fluid	CO	-	-	-	BH Inteq
MUD-SAVE F	Thermoset rubber LCM (10-100 mesh)	LO	-	-	-	Ecofluids
MUD-SAVE M	Thermoset rubber LCM (6-20 mesh)	LO	-	-	-	Ecofluids
MUD-SAVE SF	Themoset rubber seepage loss additive	LO	-	-	-	Ecofluids
MUD SEAL	Cellulose fibers	LO	-	-	-	Telnite
MUDUP	Natural polymer	V	FR	FL	-	Messina
MUDUP-PLUS	Modified polysaccharide	V	FR	-	-	Messina
MUD-WISER FC	Fluid loss reducer/stabilizer	FR	SH	-	-	Baker
MUD-WISER PLUS HV	Fluid loss reducer, extended range	FR	SH	-	-	Baker
MUD-WISER PLUS LV	Fluid loss reducer, extended range	FR	SH	-	-	Baker
MUDZYMES	Polymer-linkage specific enzymes for removal of filter cake residue	-	-	-	-	BJ
MUL I	Oil mud emulsifier	E	FR	-	-	GEO
MUL I	Primary emulsifier	E	SU	FR	-	Newpark
MUL II	Oil mud emulsifier & oil wetting agent	E	FR	-	-	GEO
MUL II	Organic emulsifier	E	SU	FR	-	Newpark
MULSPERSE	Asphalt and gilsonite coupler	SU	E	-	-	Coastal Superior
MUL SPERSE	Wetting agent/coupler	SU	E	-	-	Sun
MUL TEMP	Non-asphaltic high temp. fluid loss additive	FR	TE	-	-	GEO
MUL THIK	Oil base viscosifier	V	-	-	-	GEO
MULTICEL	CMC, all grades	FR	V	SH	-	Drillsafe
MULTICOAT	Water-dispersible asphaltic blend	SH	E	LU	-	Drillsafe
MULTICRYL	Acrylic polymer	FR	SH	V	-	Drillsafe
MULTIDET	Mud detergent	SU	E	-	-	Drillsafe
MULTI-DF	Fresh & saltwater defoamer	D	SU	-	-	Drillsafe
MULTIDRILL	Modified starch polymer	FR	V	-	-	Drillsafe
MULTILIG K	Potassium lignite	TH	FR	SH	-	Drillsafe
MULTILUBE B	Non-toxic, biodegradable lubr.	LU	TH	SU	-	Drillsafe
MULTIPLAST	Bi-component polymer	LO	-	-	-	Drillsafe
MULTISAL	Carboxymethylated Polymer	FR	V	SH	-	Drillsafe
MULTISEAL LCM	Optimum blend LCM	LO	-	-	-	Baker
MULTITHIN F	Chrome-free lignosulfonate	TH	FR	SH	-	Drillsafe
MULTITHIN FC	Ferrochrome lignosulfonate	TH	FR	SH	-	Drillsafe
MULTIVIS A	High M.W. cellulosic polymer	V	SH	FR	-	Drillsafe
MULTIVIS S	High M.W. polysaccharidic polymer	V	SH	FL	-	Drillsafe
MUL TREAT	Oil wetting surfactant	E	SU	-	-	GEO
MUL TROL	Asphaltic fluid loss additive	FR	SU	-	-	GEO
MY-LO-JEL	Pre-gelatinized starch	FR	-	-	-	M-I

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
NATROSOL	Hydroxyethyl cellulose	V	FR	-	-	Aqualon
NATROSOL	Powdered hydroxyl ethyl cellulose	V	-	-	-	AVA
N-DRIL	Modified starch	FR	-	-	-	Baroid
N-DRIL HI	High M.W. HEC	V	FR	-	-	Baroid
N-DRIL HT PLUS	Modified starch	FR	-	-	-	Baroid
N-DRIL LO	Low M.W. HEC	FR	V	-	-	Baroid
NEW 100N	Glycerols	LU	SH	-	-	Newpark
NEW ARMOR	Alcohol solution of an amine salt	CO	-	-	-	Newpark
NEW BAR	Barite	W	-	-	-	Newpark
NEW CARB	Sized calcium carbonate	LO	W	-	-	Newpark
NEW-DRILL	Liquid high M.W. anionic polymer	SH	-	-	-	BH Inteq
NEW-DRILL HP	Powdered polymer used for controlling troublesome shales	SH	-	-	-	BH Inteq
NEW-DRILL PLUS	Powdered high M.W. partially hydrolyzed polyacrylamide	SH	-	-	-	BH Inteq
NEW FLOW	Chrome lignosulfonate	TH	FR	E	-	Newpark
NEW FLOW CF	Chrome-free lignosulfonate	TH	FR	E	-	Newpark
NEW GEL	Montmorillonite	V	FR	-	-	Newpark
NEW LIG	Lignite	FR	TH	E	-	Newpark
NEW LIG C	Causticized lignite	FR	TH	E	-	Newpark
NEW PAC LV	Polyanionlc cellulose	FR	V	-	-	Newpark
NEW PAC R	Polyanionlc cellulose	FR	V	-	-	Newpark
NEW PHPA	PHPA	SH	V	-	-	Newpark
NEW PHPA D	PHPA	SH	V	-	-	Newpark
NEW PLUG	Nut shells	LO	-	-	-	Newpark
NEW-THIN	Polymeric deflocculant	TH	-	-	-	BH Inteq
NEW THIN	Sodium polyacrylate	TH	TE	FR	-	Newpark
NEW-TROL	Sodium polyacrylate	FR	-	-	-	BH Inteq
NEW-VIS	Organic polymer blend	V	-	-	-	BH Inteq
NEW XAN	Bioploymer	V	FR	-	-	Newpark
NF 2	Gas hydrate inhibitor	-	SH	FR	-	BH Inteq
NF 3	Gas hydrate inhibitor	-	SH	FR	-	BH Inteq
NO BLOK C	Emulsion preventor for calcium brines	SU	-	-	-	Baroid
NO BLOK Z	Emusion preventor for zinc based brines	SU	-	-	-	Baroid
NOCALFB	Formate/bromide drill-in, completion fluid	W	TE	-	-	Osca
NOCALHTLC	High temperature packer fluid	W	TE	-	-	Osca
NOCAL I	Sodium chloride solution (to 10ppg)	W	-	-	-	Osca
NOCAL II	Sodium chloride/bromide sol'n (to 12.8ppg)	W	-	-	-	Osca
NOCAL IISB	Sodium bromide solution (to 12.8ppg)	W	SH	-	-	Osca
NOCAL K	Potassium chloride solution (to 9.7ppg)	W	SH	-	-	Osca
NO FOAM	Defoamer for water-base mud	D	-	-	-	EMEC
NOFOAM	Defoamer	D	-	-	-	M-I
NO FOAM	Defoamer	D	-	-	-	Newpark
NO FOAM A	Alcohol based defoamer	D	-	-	-	Newpark
NO FOAM X	Concentrated defoamer	D	-	-	-	Newpark
NOMULC	Non-emulsifier for calcium fluids	SU	-	-	-	Osca
NOMUL Z	Non-emulsifier for zinc bromide	SU	-	-	-	Osca
NO-PHALT 91	Non-aromatic asphaltine dispersant	SU	-	-	-	Well-Flow
NO SLUF 300	Modified gilsonite	SH	LU	TE	-	Global
NO SLUF 400	Modified H.T. asphaltine	SH	LU	TE	-	Global
NO SLUF 500	Modified asphalt	SH	LU	TE	-	Global
NO-SULF	Zinc compound for sulfide scavenging	CO	-	-	-	Baroid
NOVAMOD	Viscosifier, gelling agent for syn. fluid emulsion muds	V	-	-	-	M-I
NOVAMUL	Primary emulsifier for syn. brine emulsion muds	E	SU	FR	-	M-I
NOVASOL	Synthetic base fluid	TH	-	-	-	M-I
NOVATEC B	LAO base fluid	TH	LU	-	-	M-I
NOVATEC F	Fluid loss reducer	FR	-	-	-	M-I
NOVATEC M	Low-end rheology modifier	V	-	-	-	M-I
NOVATEC PE	Primary emulsifier	E	FR	-	-	M-I
NOVATEC SE	Secondary emulsifier	E	FR	-	-	M-I
NOVATEC VIS	Organophillic hectorite clay	V	FR	-	-	M-I
NOVATHIN	Thinner for synthetic system	TH	SU	E	-	M-I
NOVAWET	Wetting agent for syn. fluid emulsion muds	SU	E	TH	-	M-I
NOXYGEN	Liquid oxygen scavenger	CO	-	-	-	BH Inteq
N-PLEX	Activator for N-Squeeze	V	-	-	-	Baroid
N-SEAL	Inorganic LCM	LO	-	-	-	Baroid
N-SQUEEZE	Lost circulation material	LO	-	-	-	Baroid
NUPERM BREAKER	Drill-in fluid filter cake clean-up fluid	SU	-	-	-	Osca
NUT PLUG	Ground nut hulls	LO	-	-	-	M-I
NUTPLUG	Lost circulation material	LO	-	-	-	Molen
N-VIS	Biopolymer	V	-	-	-	Baroid
N-VIS HB	Cellulosic biopolymer dispersion	V	-	-	-	Baroid
N-VIS HI	Mixed metal silicates	V	-	-	-	Baroid
N-VIS L	Liquid xanthan gum	V	-	-	-	Baroid
N-VIS O	Organophilic clay	V	FR	-	-	Baroid
N-VIS P PLUS	Blend of polymers	V	FR	-	-	Baroid
OA-13	Viscosity breaker	-	-	-	-	Osca
OB-101	Primary emulsifier	E	-	-	-	Baker
OB-201	Secondary emulsifier/wetting agent	E	SU	-	-	Baker
OB-301	Thinner/wetting agent	TH	SU	-	-	Baker
OB-390	Organophylic clay viscosifier	V	-	-	-	Baker
OB-400	Organophilic clay viscosifier	V	-	-	-	Baker
OB-401	Organophilic clay viscosifier	V	-	-	-	Baker
OB-402	Organophilic clay viscosifier	V	-	-	-	Baker
OB-403	Hectorite-organophilic clay viscosifier	V	-	-	-	Baker

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
OB-404	Viscosifier for synthetic fluids	V	-	-	-	Baker
OB-501 C	Seepage loss control agent	LO	-	-	-	Baker
OB-502 T	Seepage loss control agent	LO	-	-	-	Baker
OB-601	Fluid loss control agent	FR	TE	-	-	Baker
OB-602	Fluid loss control agent	FR	TE	-	-	Baker
OB-604	Mod. asphalt-based HTHP fluid-loss stabilizer	FR	TE	-	-	Baker
OB-606	Organolignite fluid-loss stabilizer	FR	-	-	-	Baker
OB-607	Organolignite fluid-loss stabilizer	FR	-	-	-	Baker
OB-801	Dry weightable spotting additive	P	-	-	-	Baker
OBS	Oil base mud powdered concentrate	FR	E	SU	-	Bolland
OILAID-CI	Corrosion inhibitor series	CO	-	-	-	Messina
OILCON	Invert emulsifier	E	FR	SU	-	Messina
OIL DRY	Oil absorbent	-	-	-	-	Newpark
OIL FAZE	Sacked oil base concentrate	E	FR	V	-	M-I
OILFOS	Sodium glassy phosphate	TH	CA	-	-	BH Inteq
OILMUL-L	Invert emulsifier	E	FR	TE	-	Messina
OILMUL-P	Powdered primary emulsifier	E	FR	TE	-	Messina
OILPACK	Oil base packer fluid	E	V	-	-	Messina
OILSEAL	Sized resinous particles	LO	-	-	-	Messina
OILSPOT-FT	Weighted spotting fluid	P	-	-	-	Messina
OILSPOT-L	Weighted spotting fluid	P	-	-	-	Messina
OILSPOT-P	Weighted spotting fluid	P	-	-	-	Messina
OILTHIN	Oil mud thinner	TH	SU	-	-	Messina
OILTONE-1	Asphaltic blend	FR	E	TE	-	Messina
OILTONE-2, 3, 4	Non-asphaltic filtration agent	FR	E	-	-	Messina
OILVIS	Organophilic clay	V	-	-	-	Messina
OILVIS-HT	High temp. organoclay	V	-	-	-	Messina
OILVIS PLUS	Polymeric oil mud viscosifier	V	FR	TE	-	Messina
OILVIS-S	Non-gelling organoclay	V	-	-	-	Messina
OILWET	Wetting agent, dispersant	SU	TH	-	-	Messina
OMC	Oil mud conditioner	TH	-	-	-	Baroid
OMC 2	Oil mud conditioner	TH	-	-	-	Baroid
OMC 42	Oil mud conditioner	TH	-	-	-	Baroid
OMC 280	Foamer	FO	-	-	-	Henkel
OMC 639 W	Liquid lubricant	LU	SU	-	-	Henkel
OMC 809	Well cleaning agent	SU	-	-	-	Henkel
OMC 853 B	Low tox. surfactant	SU	-	-	-	Henkel
OMC 2000	Oil mud conditioner	TH	-	-	-	Baroid
OMNI-COTE	Wetting agent for synthetic muds	SU	-	-	-	BH Inteq
OMNI-MIX	High-temp. emulsifier/emulsion stabilizer	E	FR	TE	-	BH Inteq
OMNI-MUL	High-temp. emulsifier & wetting agent for syn. muds	E	SU	TE	-	BH Inteq
OMNI-PLEX	Polymeric additive for enhancing low shear rate rheology	V	FR	-	-	BH Inteq
OMNIPOL II	Liquid deflocculant-thinner	TH	FR	TE	-	GEO
OMNI-TEC	High-temp. emulsifier for syn. muds	E	FR	TE	-	BH Inteq
OMNI-TROL	High-temp. filtration control additive for syn. muds	FR	-	-	-	BH Inteq
OMNI-VERT	High temp. emulsifier& wetting agent for syn. Muds	-	-	-	-	BH Inteq
OM-SEAL	Micronized polycrystalline material	LO	SH	-	-	Liquid Csg.
OPTI G	Gilsonite	FR	SH	LU	-	Newpark
OPTI MUL	Primary Emulsifier	E	SU	FR	-	Newpark
OPTI PLUS	Secondary emulsifier	E	SU	FR	-	Newpark
OPTI-SEAL LCM	Optimum blend LCM	LO	-	-	-	Baker
OPTI THIN	Organic thinner	TH	FR	-	-	Newpark
OPTI VIS	Ogano-bentonite	V	FR	-	-	Newpark
OPTI VIS HT	Ogano-hectorite	V	FR	-	-	Newpark
OPTI VIS PS	Polymeric viscosifier	V	FR	-	-	Newpark
OPTI VIS RM	Polymeric rheological modifier	V	E	FR	-	Newpark
OPTI WET	Oil wetting agent	SU	E	FR	-	Newpark
ORGANO-C	Organophilic clay	V	-	-	-	FDF
ORGANO-H	Hectorite clay	V	TE	-	-	FDF
OS-7	Oxygen scavenger	CO	-	-	-	Osca
OS-8	Filming amine corr. inhibitor	CO	-	-	-	Osca
OS-112	Oxygen scavenger, liquid	CO	-	-	-	Baker
OSC-40	Liq. catalyzed oxygen scavenger	CO	B	-	-	Drillsafe
OSI-9	Sea water oxygen scavenger/inhibitor	CO	-	-	-	Osca
OS-IL	Sulfite-based oxygen scavenger	CO	TE	-	-	M-I
OSL	Bisulfite oxygen scavenger	CO	TE	-	-	EMEC
OSS PILL	Polymers, sized oil-soluble material for clay-free fluids	V	LO	FR	-	Osca
OSS PILL	Polymer & sized oil-soluble-resin blend	FR	LO	V	-	TBC-Brinadd
OW-66	Oil wetting agent	SU	E	TH	-	Bolland
OXICOR	Ammonium bisulphide	CO	-	-	-	Flowsa
OXYGON	Oxygen scavenger	CO	-	-	-	Baroid
PAC-L	Low visc. polyanionic cellulose	FR	SH	E	-	Baroid
PAC PLUS	Polyanionic cellulose, premium grade	FR	SH	V	-	M-I
PAC PLUS UL	Polyanionic cellulose, premium grade, ultra low visc.	FR	SH	V	-	M-I
PAC-R	Regular polyanionic cellulose	FR	SH	V	-	Baroid
PANGEL B20	Amino-sepiolite	V	-	-	-	Tolsa
PANGEL FF	Sepiolite	V	-	-	-	Tolsa
PARAFORMALDEHYDE	Paraformaldehyde	B	-	-	-	Most cos.
PARA-TEQ	Paraffin base for synthetic fluids	SB	-	-	-	BH Inteq
PAYZONE 530	Fine grade, acid soluble, fibrous LCM	LO	FR	V	-	TETRA
PAYZONE 532	Medium grade, acid soluble, fibrous LCM	LO	FR	V	-	TETRA
PAYZONE A.C.T.	Advanced cleanup technology: drill-in fluids	FR	W	LO	-	TETRA

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
PAYZONE CARB-PRIME	Highly acid soluble, broad PSD, fine grind CaCo3, 1 to 74 microns	FR	W	LO	-	TETRA
PAYZONE CARB-ULTRA	Ultra fine grind, narrow PSD range CaCo3, 95% less than 15 microns	FR	W	LO	-	TETRA
PAYZONE DF-CC	Brine based drill-in fluid with calcium carbonate	W	FR	V	-	TETRA
PAYZONE DF-SS	Saturated NaCl brine based drill-in fluid with sized salt	W	FR	V	-	TETRA
PAYZONE FLUIDS	CBF based drilling fluid	W	V	LO	-	TETRA
PAYZONE HPS	Chemically modified high performance starch	FR	V	-	-	TETRA
PAYZONE POLYCARB	Selected polymer blend, sized CaCo3 pH buffer	V	FR	A	-	TETRA
PAYZONE PSEUDOPOL	High performance synthetic polymer	V	FR	-	-	TETRA
PAYZONE SS-PRIME	Fine grind, broad PSD range NaCl, 95% less than 74 microns	FR	LO	W	-	TETRA
PAYZONE SS-ULTRA	Ultra fine grind, narrow PSD range NaCl, 95% less than 44 microns	FR	W	LO	-	TETRA
PENETEQ	Penetrating lubr. for ROP enhancement	LU	-	-	-	BH Inteq
PENETREX	ROP enhancer	LU	SH	FR	-	BH Inteq
PENETREX L	ROP enhancer	LU	SU	SH	-	BH Inteq
PERCOL 351	Non-ionic selective flocculant powder	FL	-	-	-	Allied
PERCOL 368	Solid grade cationic coagulant	FL	-	-	-	Allied
PERCOL 406	Liq. grade cationic coagulant	FL	-	-	-	Allied
PERCOL 728	High M.W. cationic flocculant/powder/med. charge	FL	-	-	-	Allied
PERCOL 737	High M.W., 50% active, liq. cationic flocculant	FL	-	-	-	Allied
PERCOL 757	High M.W. cationic flocculant/bead/high charge	FL	-	-	-	Allied
PERCOL E-24	Total flocculant, anionic bead	FL	-	-	-	Allied
PERFAL	Modified asphalt	SH	-	-	-	Flowsa
PERFFLOW 100	Drill-in fluid for reservoir applications	LO	V	FR	-	BH Inteq
PERFFLOW DIF	Drill-in fluid for reservoir applications	LO	V	FR	-	BH Inteq
PERFSAL 30	Sized salts	W	LO	-	-	AVA
PERMA-LOSE HT	Non-fermenting polymerized starch	FR	V	-	-	BH Inteq
PERMATROL-LV	Tech. grade CMC	FL	SH	-	-	Messina
PETROBRIDGE C	Sized calcium carbonate	LO	-	-	-	Drilpro
PETROBRIDGE R	Sized oil-soluble resins	LO	-	-	-	Drilpro
PETROCURE C	Calcium carbonate based blend	LO	-	-	-	Drilpro
PETROCURE R	Oil-soluble resin based blend	LO	-	-	-	Drilpro
PETROFREE	Ester based fluid	-	-	-	-	Baroid
PETRO-SORB	Oil absorbent	-	-	-	-	Integrity
PETROVIS D	HEC polymer	V	FR	-	-	Drilpro
PETROVIS DB	Polymer blend for drilling	V	FR	-	-	Drilpro
PETROVIS L	Liquid HEC	V	FR	-	-	Drilpro
PETROVIS ND	Non-damaging viscosifier, fluid loss additive, water-soluble polysaccharid	V	FR	LC	-	Drilpro
PETROWEIGHT	High density acid-soluble weight material	W	-	-	-	Drilpro
PFI 2000	Packer fluid inhibitor	CO	-	-	-	New-Chem
PFL-1500	100% oil based lubricant/shale inh.	SH	LU	E	-	Cesco
pH 6	Carboxylic acid buffer blend	A	-	-	-	TBC-Brinadd
PHASE ONE	Treated brine	P	-	-	-	Baroid
PHASE TWO	Water based spotting fluid	P	-	-	-	Baroid
pH BAN	pH reducer	A	-	-	-	Ambar
pH BUFFER	Fine grind alkaline salt	A	FR	-	-	TBC-Brinadd
PHENO SEAL-F,M,C	Thermoset plastic laminate flakes for bridging and lost circ.	LO	-	-	-	Montello
PHOS	Sodium tetraphosphate	CA	TH	-	-	M-I
PIPE-LAX	Oil base surfactant for freeing stuck pipe	P	-	-	-	M-I
PIPE-LAX ENV	Low toxicity liq. stuck pipe soaking fluid	P	LU	SH	-	M-I
PIPE-LAX W	Oil base liq. stuck pipe soaking fluid	P	-	-	-	M-I
PIPE SPOT DFT-L	Additive for freeing stuck pipe	P	LU	-	-	Baker
PIPE SPOT DFT-L ES	Hydrocarbon-free spotting additive	P	-	-	-	Baker
PL 1400	Liquid PHPA	SH	V	LU	-	Akzo-Dreeland
PL 3100	Polymeric flocculant	FL	SH	LU	-	Akzo-Dreeland
PLUG-GIT	Processed cedar fiber	LO	-	-	-	Baroid
PLUG-SAL	Sized salt with dispersant	LO	-	-	-	TBC-Brinadd
PLUG-SAL X	Sized salt	LO	-	-	-	TBC-Brinadd
PLUG-SAL XC	Sized salt	LO	-	-	-	TBC-Brinadd
PLUGSEAL	Sized salts	W	LO	-	-	AVA
PLUGSEAL-X	Sized salts	LO	-	-	-	AVA
PLUGSEAL-XC	Sized salts	LO	-	-	-	AVA
PLUS 5	PHPA low M.W.	FR	SH	-	-	Flowsa
POLACRYL 1001 LX/BT	Extreme pressure lubricant	LU	SU	-	-	Polacryl
POLACRYL A55-35AM	High temp. dispersant for high density mud	TH	FR	-	-	Polacryl
POLACRYL A55-41S	High temp. dispersant	TH	FR	-	-	Polacryl
POLACRYL C70-37AM	High temp. thinner for high density mud	TH	FR	-	-	Polacryl
POLACRYL C70-41S	High temp. thinner	TH	FR	-	-	Polacryl
POLACRYL EP 400	Extreme pressure lubricant	LU	SU	-	-	Polacryl
POLACRYL M 350	Foaming agent	FO	-	-	-	Polacryl
POLICELL RG	Technical grade PAC regular	V	FR	SH	-	AVA
POLICELL SL	Technical grade PAC low viscosity	FR	SH	-	-	AVA
POLIFLUID	Synthetic chrome-free thinner	TH	TE	FR	-	AVA

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
POLIVIS	Modified liquid PHPA	SH	V	-	-	AVA
POLYAC	Polyacrylate	FR	FL	TH	-	Baroid
POLY-BEADS	Copolymer solid friction reducer	LU	-	-	-	DrillTech
POLY-BEN	Bentonite extender	V	FL	-	-	Messina
POLY-BEN-L	Liquid bentonite extender	V	FL	-	-	Messina
POLYBLOC	Polymer lost circ. bridge	LO	-	-	-	GEO
POLYBRINE	Polymer bridging alkalinity agent	V	FR	LO	-	M-I
POLYCAL	Modified lignosulphonate	TH	SH	-	-	Flowsa
POLYCARB	Sized carbonate drill-in fluid	FR	V	-	-	GEO
POLYDRILL	High temp. stable fluid loss polymer	FI	TE	SH	-	SKW
POLYFIX	Polymer thermal stabilizer	TE	-	-	-	Messina
POLY-FLOC	Flocculant	FL	SH	-	-	Messina
POLYFLOS 18	Viscosifier for brines	-	-	-	-	Lamberti
POLYFLOS HM 21	Non damaging fluid loss reducer	FR	-	-	-	Lamberti
POLY-KAT	High charge, low M.W. cationic polymer	SH	FR	-	-	BH Inteq
POLY-KEM D	High M.W., dry, partially hydrolyzed polyacrylamide	SH	FR	FL	-	Kem-Tron
POLY-KEM L	High M.W., liq., partially hydrolyzed polyacrylamide	SH	FR	FL	-	Kem-Tron
POLYLIG	Chrome-free, oxidised lignin derivative	TH	SH	-	-	Dowell
POLYMER 303	Viscosifying polymeric mix	V	-	-	-	Flowsa
POLYMER 214	Scale inh. and low hardness mud dispersant	TH	CA	-	-	Aquaness
POLYMER 2214	Low hardness mud dispersant and scale inh. concentrate	TH	CA	-	-	Aquaness
POLYNUT	Inert LCM	LO	LU	-	-	General
POLYOX	Polymer mix	SH	-	-	-	Flowsa
POLYPAC	Polyanionic cellulose	FR	SH	V	-	M-I
POLYPAC ELV	Extra low viscosity PAC	FR	SH	-	-	M-I
POLYPAC UL	Polyanionic cellulose, ultra low visc.	FR	SH	-	-	M-I
POLY PLUG	LCM mixed material	LO	-	-	-	Flowsa
POLY-PLUS	Liquid high M.W. PHPA polymer	SH	FR	FL	-	M-I
POLY-PLUS RD	Readily dispersible powdered high M.W. PHPA polymer	SH	FR	FL	-	M-I
POLY-SAL	Preserved non-fermenting starch	FR	V	-	-	M-I
POLY SEAL	Polymer modifier cellulosic fibers	LO	SU	LU	-	Global
POLY-SLICK	Copolymer beads	LU	-	-	-	Messina
POLYSPERSE	Polymeric deflocculant	TH	TE	FR	-	Messina
POLYSPERSE-XCL	Harsh-condition polymeric deflocculant	TH	TE	FL	-	Messina
POLYSPERSE-XHT	High performance polymeric deflocculant	TH	TE	FR	-	Messina
POLYTEMP	Synthetic polymer for high temp. muds	FR	-	-	-	Dowell
POLYTEX AHT	Organic polymer	FR	-	-	-	TBC-Brinadd
POLYTHERM-FX	High temp. filtration polymer	TE	FL	SH	-	Messina
POLYTHERM-FX2	High temp. filtration control polymer	TE	FL	SH	-	Messina
POLYTHERM-FX2L	High temp. filtration control polymer	TE	FL	SH	-	Messina
POLYTHERM-FX3	High temp. filtration control polymer	TE	FL	SH	-	Messina
POLYTHERM-FX31	High temp. filtration control polymer	TE	FL	SH	-	Messina
POLYTHERM-FXL	High temp. liq. filtration polymer	TE	FL	SH	-	Messina
POLYTHIN	Mud thinner	TH	FR	E	-	EMEC
POLYTHIN	High temp. deflocculant, thinner	TH	TE	FI	-	SKW
POLYTREX	Fermentation resistant starch	FR	V	-	-	EMEC
POLYTROL	Liquid polymer, non-damaging viscosifier	V	FR	-	-	Messina
POLYTROL	Fluid loss polymer	FR	V	-	-	SKW
POLYTROL-1000	Liquid PHPA	SH	V	LU	-	Messina
POLYTROL-L	Liquid polymer non-damaging viscosifier	V	FR	-	-	Messina
POLYVIS II	Inorganic drilling fluid viscosifier	V	SH	LO	-	SKW
POTASSIUM ACETATE	Potassium acetate	SH	-	-	-	AVA
POTASSIUM ACETATE	Source of potassium ion for inhibited muds	SH	-	-	-	Baker
POTASSIUM ACETATE	Non-caking additive/water-base fl.	SH	-	-	-	Verdugt
POTASSIUM BICARBONATE	Potassium bicarbonate	A	CA	-	-	AVA
POTASSIUM BROMIDE 99.5%	Potassium bromide powder 99.5%	W	SH	-	-	AVA
POTASSIUM CARBONATE	Salt for weighted brines	W	-	-	-	Most cos.
POTASSIUM CHLORIDE	Potassium chloride	SH	-	-	-	Most cos.
POTASSIUM FORMATE	Potassium formate	SH	W	-	-	AVA
POTASSIUM FORMATE	Potassium formate brine & dry potassium formate	W	TE	SH	-	Hydro
POTASSIUM FORMATE	Drill-in fluid base to 13.3 ppg	W	TE	SH	-	Osca
POTASSIUM FORMATE	Water-base fl. additive/65-75% solution	-	-	-	-	Verdugt
POTASSIUM HYDROXIDE	Caustic potash	A	-	-	-	Most cos.
POTASSIUM IODINE	Tracer for determining filtration invasion	SH	-	-	-	Most cos.
POTASSIUM LIGNITE	Modified North Dakota lignite	TH	FR	-	-	Baker
POTASSIUM NITRATE	Tracer for determining filtrate invasion	SH	-	-	-	Most cos.
POWER GLIDE	Wtr dispersible, torque/drag reducer	LU	P	-	-	Barclay
POWERSLIDE	Sized glass beads	LU	-	-	-	Anchor
POWER SURF	Drilling mud surfactant	SU	-	-	-	Barclay

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
POWER VIS	Mixed metal hydroxide	V	SU	-	-	Telnite
PREMIER PAC	Polyanionic cellulose	V	FR	-	-	Premier
PREMIER PAC PLUS	Dispersible polyanionic cellulose (reg. or LV)	V	FR	-	-	Premier
PREMIER PAK	Potassium polyanionic cellulose	V	FR	-	-	Premier
PREMIER SPERSE	Water soluble dispersant, liquid	TH	-	-	-	Premier
PREMIUM BAR	Barite, API grade	W	-	-	-	Baker
PREMIUM GEL	API grade Wyoming bentonite	V	FR	-	-	Baker
PREMIUM GEL NT	API grade Wyoming bentonite, untreated	V	FR	-	-	Baker
PREMIUM SEAL	Cellulose fiber sealant	LO	FR	SH	-	Turbo
PREMPAC EX	Improved rheology polyanionic cellulose polymer	FR	SH	V	-	Lamberti
PREMPAC LOVIS	Low visc. polyanionic cellulose	FR	SH	-	-	Lamberti
PREMPAC REGULAR	High visc. polyanionic cellulose	FR	SH	V	-	Lamberti
PRESANTIL	Pipe freeing agent for unweighted spotting fluids	P	LU	-	-	Lamberti
PRESANTIL W	Pipe freeing agent for weighted spotting fluids	P	LU	-	-	Lamberti
PRESSURE SEAL DF LCM	Expanded aggregate granular LCM	LO	-	-	-	TXI Energy
PRESTA CELL F	For regaining lost circulation	LO	-	-	-	Molen
PRESTA LUBE EP	High press. lubr. for water based systems	LU	-	-	-	Molen
PRESTA MIX R	For curing lost circulation	LO	-	-	-	Molen
PRESTA NITE C	Supplementary lignite for fluid loss control	TH	FR	-	-	Molen
PRESTA SEAL M	For curing severe lost circ. and plugging	LO	-	-	-	Molen
PRESTA TEX G	Mod., biodegradable polysaccharide	TE	-	-	-	Molen
PRO-BAR	Barite-API	W	-	-	-	Progress
PRO-CIDE	Biocide	B	-	-	-	Progress
PRO-DF(A)	Alcohol defoamer	D	-	-	-	Progress
PRO-DF(S)	Silicone defoamer	D	-	-	-	Progress
PROD NES 200	Surface active agent	SU	CO	-	-	Drill Spec.
PRODUCT 47	Foaming agent/resists contamination	CO	-	-	-	Special Prod
PRODUCT 63	Emulsifier & wetting agent	FR	-	-	-	Special Prod
PRODUCT 71	Oxygen scavenger	CO	-	-	-	Special Prod
PRODUCT 239	Clay stabilizer for shale control	FO	SH	-	-	Special Prod
PRODUCT 269	Foamer	FO	E	-	-	Special Prod
PRODUCT 300	Amine water soluble corrosion inhibitor	CO	A	TE	-	Special Prod
PRODUCT 2003	Oxygen scavenger	CO	-	-	-	Special Prod
PRODUCT 2008	Solid tolerant oxygen inhibitor	CO	-	-	-	Special Prod
PRODUCT 2016	Low end rheology modifier	E	CO	-	-	Special Prod
PRODUCT 2039	Packer fluid corrosion inhibitor	CO	-	-	-	Special Prod
PRODUCT 2047	Water dispersible corrosion inhibitor	CO	-	-	-	Special Prod
PRODUCT 2069	H2S remover	SU	CO	-	-	Special Prod
PRODUCT 2071	Solids wetting agent for oil mud	E	SU	-	-	Special Prod
PRODUCT 2077	Corrosion inhibitor for high O2 envr.	CO	SU	-	-	Special Prod
PRODUCT 2078	Atmospheric filming corrosion inhibitor	CO	SU	-	-	Special Prod
PRODUCT 5014	Iron-control sequestering agent	SU	CO	-	-	Special Prod
PRODUCT 6014	Concentrated drilling detergent	SU	TH	-	-	Special Prod
PRODUCT 6016	Primary oil mud emulsifier	E	-	-	-	Special Prod
PRODUCT 6044	Cleaner degreaser	SU	TH	-	-	Special Prod
PRODUCT 6049	Oil mud secondary emulsifier	E	FR	-	-	Special Prod
PRODUCT 6050	Oil mud primary emulsifier	E	-	-	-	Special Prod
PRODUCT 6055	Concentrated pipe-freeing material	P	-	-	-	Special Prod
PRODUCT 6064	Drilling fluid lubricant	LU	SH	SU	-	Special Prod
PRODUCT 6065	Oil-mud emulsifier conc.	E	SU	-	-	Special Prod
PRODUCT 6101	Oil mud secondary emulsifier	-	E	FR	-	Special Prod
PRODUCT 7012	Concentrated defoamer	D	-	-	-	Special Prod
PRODUCT 7013	Foamer	FO	E	-	-	Special Prod
PRODUCT 8015	Salt inhibitor	TH	SU	-	-	Special Prod
PRO-FIBER	LCM-seepage control	LO	-	-	-	Progress
PRO-GEL	Bentonite-API	FL	V	-	-	Progress
PRO-INHIBIT	Corrosion inhibitor	CO	-	-	-	Progress
PRO-LUBE	Non polluting lubricant, temp. stable	LU	TE	-	-	Progress
PRO-OWA	Wetting agent	SU	TH	E	-	Progress
PRO-PAC LO	Polyanionic cellulose	FL	V	SH	-	Progress
PRO-PAC R	Polyanionic cellulose	FL	V	SH	-	Progress
PRO-PIPE PULL	Pipe freeing agent	P	LU	-	-	Progress
PROTECTO FILM 404	Oxygen scavenger, filming amine, biocide blend	CO	B	-	-	Bolland
PROTECTOMAGIC	Oil soluble, air blown asphalt used w/oil	SH	LU	-	-	BH Inteq
PROTECTOMAGIC M	Water-dispersible, air-blown asphalt	SH	LU	-	-	BH Inteq
PRO-TEX	Sulfonated asphalt	SH	LU	TE	-	Progress
PRO-TORQ-LUBE	Diesel base lubricant	LU	SH	SU	-	Progress
PS 31	Emulsifier for synthetic systems	E	-	-	-	FDF
PS 1400	Polyacrylamide granular	SH	V	LU	-	Akzo-Dreeland
PSWA III	Wetting agent for synthetic systems	SU	-	-	-	FDF
PTS-100	pH buffer and temp. stabilizer	TE	A	-	-	Dowell
PTS-200	Polymer temp. stabilizer	TE	A	-	-	Dowell
PTS 300	Polymer temp. stabilizer	TE	A	-	-	Dowell
PURE GEL	Untreated API grade Wyo. bentonite	V	FR	-	-	Baker
PUREGEL	Premium untreated API bentonite	V	FR	LU	-	Messina
PURESAFE II	Emulsifier for synthetic systems	E	TH	TE	-	FDF
PYRO-TROL	Copolymer-acrylamide-AMPS	FR	TE	-	-	BH Inteq
Q-BROXIN	Ferrochrome lignosulfonate	TH	FR	E	-	Georgia-Pacific West
QUEBRACHO 70/30	Tannin blend	TH	FR	-	-	Baker

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
QUEBRACHO 80/20	Tannin blend	TH	FR	-	-	Baker
QUICK VIS	Brine viscosifier	V	FR	-	-	Osca
QUIK-FOAM	Foaming agent	FO	-	-	-	Baroid
RAPID-VIS	Liquid polymer viscosifier (HEC)	V	-	-	-	Progress
RC D&D2	Well displacement clean-up fluid	FL	SU	P	-	Rig-Chem
RC PAK-3	Packer fluid, corr. inhibitor	CO	-	-	-	Rig-Chem
RC PDR-1000	Pipe pickling agent	SU	-	-	-	Rig-Chem
RC RIGFOAM-3	Foaming agent	FO	-	-	-	Rig-Chem
RC RIG-THIN	High temp. thinner	TH	-	-	-	Rig-Chem
RC RIGVIS-L	Liquid HEC viscosifier	V	-	-	-	Rig-Chem
REDI-COAT	Encapsulating polymer	SH	V	FR	-	Messina
REDI-COAT-PLUS	Encapsulating polymer	SH	V	FL	-	Messina
REDI-DRIL	Full-function drilling polymer	V	FR	E	-	Messina
REDI-FLO	Selected cellulosic ether polymer	FR	SH	-	-	Messina
REDIFLO-NHV	Selected cellulosic ether polymer	V	FL	-	-	Messina
REDIFLO-NLV	Selected cellulosic ether polymer	V	FL	-	-	Messina
REDI-pH	Buffered alkalinity agent	A	-	-	-	Messina
REDI-THIN	Polymeric thinner	TH	TE	FL	-	Messina
REDI-X10	Polymer thermal stabilizer	TE	-	-	-	Messina
REKOLL 1309	Wetting agent	SU	-	-	-	Drillsafe
RESINEX	Resinated lignite	FR	TE	TH	-	M-I
RHEOMATE	Complex, thinner/dispersant	TH	TE	FR	-	Lamberti
RHEOMATE	Complex zirconium salt, HT dispersant	TH	-	-	-	Premier
RHEOPOL	Polymeric fluid loss reducer	FR	V	-	-	Dowell
RHEOPOL GX	Polymeric viscosifier	V	FR	-	-	Dowell
RHEOSTAR	HT-HP thinner/deflocculant	TH	TE	-	-	M-I
RHEOTHIN	Modified lignosulfonate	TH	E	FR	-	Messina
RHEOTHIN-CF	Chrome-free lignosulfonate	TH	E	FR	-	Messina
RHEOTHIN-CF-III	Modified, chrome-free lignosulfonate	TH	E	FR	-	Messina
RHEOTHIN-HT	Polymer modified lignin	TH	FL	-	-	Messina
RINSE-AID 91	Biodegradable surfactant to water-wet tubulars	SU	-	-	-	Well-Flow
RM-63	Polymeric rheology modifier	V	-	-	-	Baroid
R.O.P.Enhancer	Protein based lubricant / ROP enhancer	LU	SH	FR	-	Sun
RUST-X	Rust converter and primer	CO	LU	P	-	Integrity
RV-310	Mixed metal silicates	V	-	-	-	Baroid
SAFE BLOCK	Special sized salt	FR	LO	-	-	M-I
SAFE BREAK CBF	Emulsion preventer for brine	SU	-	-	-	M-I
SAFE BREAK L	Breaker for brine viscosifiers	-	-	-	-	M-I
SAFE BREAK S	Breaker for brine viscosifiers	-	-	-	-	M-I
SAFE BREAK ZINC	Emulsion preventer for zinc/bromide brines	SU	-	-	-	M-I
SAFE BRINE LUBE	Lubricant for heavy brine	LU	-	-	-	M-I
SAFE CARB	Ground marble	W	FR	LO	-	M-I
SAFE-C-H2O	Broad base seawater treatment	CA	-	-	-	Filco
SAFE COR	Brine corrosion inhibitor	CO	-	-	-	M-I
SAFE COR C	Brine corrosion inhibitor	CO	-	-	-	M-I
SAFE COR HT	High temp. brine corrosion inhibitor	CO	-	-	-	M-I
SAFE DFOAM	Defaoming agent	D	-	-	-	M-I
SAFE-FLOC 190	De-watering additive (liquid)	FL	-	-	-	Baker
SAFE-FLOC 290	De-watering additive (granular)	FL	-	-	-	Baker
SAFE FLOC I	Flocculant	FL	-	-	-	M-I
SAFE FLOC II	Flocculant	FL	-	-	-	M-I
SAFEGEL H	Liquid HEC concentrate	V	LO	-	-	Filco
SAFE GEL X	Liquid gel bio polymer	V	-	-	-	Filco
SAFE KLEEN	Surfactant to clean wellbore surfaces	SU	-	-	-	M-I
SAFE LINK	Polymer blend and sized salt	FR	LO	-	-	M-I
SAFE SCAV CA	Oxygen scavenger for calcium & zinc brines	CO	-	-	-	M-I
SAFE SCAV HS	Soluble H2S scavenger	CO	-	-	-	M-I
SAFE SCAVITE	Calcium scale preventer	-	-	-	-	M-I
SAFE SCAV NA	Oxygen scavenger for sodium & potassium brines	CO	-	-	-	M-I
SAFE SOLV O	Pipe dope pickle solvent	-	-	-	-	M-I
SAFE-SOLV OB	Completion fluids	SU	TH	-	-	M-I
SAFE SOLV OM	Dispersible solvent for O/SBM	SU	-	-	-	M-I
SAFE-SPOT	Spotting fluid	P	-	-	-	Integrity
SAFE SURF LT	Sufae tension reducing surfactant	SU	-	-	-	M-I
SAFE SURF O	Displacement wash chemical for O/SBM	SU	-	-	-	M-I
SAFE SURF OE	Displacement wash chemical for O/SBM	SU	-	-	-	M-I
SAFE SURF W	Displacement wash chemical for WBM	SU	-	-	-	M-I
SAFE SURF WN	Displacement wash chemical for WBM	SU	-	-	-	M-I
SAFE TROL	Blended polymers and sized bridging agents	FR	CO	V	-	M-I
SAFEVERT FL-G	Oilmud gilsonite	FR	TE	-	-	Integrity
SAFEVERT I	Primary emulsifier	E	TE	-	-	Integrity
SAFEVERT II	Secondary emulsifier	E	-	-	-	Integrity
SAFEVERT SUPERWET	Oilmud wetting agent	SU	TH	-	-	Integrity
SAFEVERT TWA	Oilmud thinner	TH	-	-	-	Integrity
SAFEVERT VISCOSIFIER	Organo clay	V	-	-	-	Integrity
SAFE VIS	Viscosifier for brine	V	FR	-	-	M-I
SAFE VIS E	Liquid viscosifier for brine	V	FR	-	-	M-I
SAFE VIS HDE	Liquid viscosifier for high density brine	V	FR	-	-	M-I
SAFEVIS-L	Viscosifier for synthetic systems	V	-	-	-	FDF
SAFEVIS-S	Viscosifier for synthetic systems	V	-	-	-	FDF
SALINEX	Oil in seawater emulsifier	E	FR	LU	-	M-I
SALT	Sodium chloride	SH	B	W	-	Most cos.

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
SALT GEL	Attapulgite clay	V	FR	-	-	M-I
SALTKLAY	Attapulgite clay	V	-	-	-	EMEC
SALTWATER CLAY	API grade attapulgite clay	V	-	-	-	Baker
SALT WATER GEL	Attapulgite clay meeting API specs	V	-	-	-	BH Inteq
SAND SEAL	Sealing agent for pay zone loss circulation, fine, coarse	LO	FR	-	-	AVA
SANHEAL PILL	Acid-soluble polymer/sized calcium carbonate blend	LO	V	FR	-	TBC-Brinadd
SAPP	Sodium acid pyrophosphate	TH	-	-	-	Most cos.
SCALE-BAN	Phosphonate inhibitor for drilling muds	CO	-	-	-	BH Inteq
SCB-100	Scale inhibitor	CO	-	-	-	Osca
SDG-220	High yield Wyoming bentonite	V	FR	-	-	Baker
SDI	Silicone defoamer	D	SU	-	-	Baroid
SEAL	Carbonate bridging material	FR	LO	W	-	Osca
SEEL AND PEAL	Removable fluid loss control pill	FR	-	-	-	M-I
SETAN	Desugared calcium lignosulfonate	TH	-	-	-	Setac
SETA SCRUB	Cleaner degreaser pipe dope remover	SU	-	-	-	Setac
SETA-SEAL	Fine fiber and carbon particle mix	LO	FR	-	-	Setac
SETA-SEAL OB	Course spun wool and carbon mix	LO	FR	-	-	Setac
SETA-SEAL PLUS	Graded carbon particles	LO	-	-	-	Setac
SETA SURF	Super water wetter	SU	SH	-	-	Setac
SETA-VIS	Suspension aid for brines and spacers	V	FR	-	-	Setac
SET-PHALT	Sulfonated asphalt for shale inh. & fluid-loss control; water-base muds	SH	FR	-	-	Setac
SHALE-BOND	Water dispersible, natural occurring asphalt	SH	LU	-	-	BH Inteq
SHALE CHEK	Shale control and gumbo additive	SH	FR	TH	-	M-I
SHALE CON	Chemically treated asphaltics	SH	-	-	-	Drilpro
SHALE DRILL-L	Liq. high M.W. shale stabilizer, viscosifier	SH	V	FR	-	EMEC
SHALE DRILL-P	Powdered high M.W. shale stabilizer, viscosifier	SH	V	FR	-	EMEC
SHALE-TONE	Shale stabilizer	SH	FR	LU	-	DX Oilfield
SI 120	Prevents deposition of alkaline earth metal scales	SU	-	-	-	Deep South
SHELL DRILLFOAM SS55	Anionic surfactant foaming agent	FO	SU	-	-	Shell
SHELLFLO-S	Microbial biopolymer viscosifier	V	SH	-	-	Shell
SHELLFLO-XA	Xanthan biopolymer viscosifier	V	SH	-	-	Shell
SI-542	Scale inhibitor	CO	-	-	-	Baker
SI-572	Scale inhibitor	CO	-	-	-	Baker
SI-582	Scale remover	CO	-	-	-	Baker
SI-592	Scale inhibitor	CO	-	-	-	Baker
SI-1000	Scale inhibitor	CO	-	-	-	M-I
SILCLAY	Complex silicate compounds	SH	-	-	-	Flowsa
6-UP	Low shear rate rheology modifier	V	-	-	-	BH Inteq
SLICKPIPE	Lubricant	LU	FR	-	-	Messina
SLICKPIPE-EP	Extreme pressure lubricant	LU	-	-	-	Messina
SLICKPIPE-EP-II	Envr. safe extreme pressure lubr.	LU	-	-	-	Messina
SLICK-SEAL	Cellulose microfiber lubricant	LU	-	-	-	Messina
SLUGGIT	Sized calcium carbonate	LO	-	-	-	TBC-Brinadd
SLUGGIT CM	Sized calcium carbonate	LO	-	-	-	TBC-Brinadd
SLUGGIT PLUS	Sized calcium carbonate	LO	-	-	-	TBC-Brinadd
SLUG-GO	Bentonite extender, flocculant and hole sweep	V	SH	-	-	DSC
SMECTAGEL	Attapulgite salt water clay	V	-	-	-	Tolsa
SMECTEX	Selective flocculant and bentonite extender	V	FL	-	-	Kem-Tron
SM X	High visc. polymer for top hole drilling	V	-	-	-	Dowell
SNOWDRILL B	Sodium bromide brine	W	SH	-	-	Anchor
SNOWDRILL F	Polymeric fluid-loss reducer for NaBr brine	FR	-	-	-	Anchor
SNOWDRILL VIS	Viscosifying polymer for NaBr brine	V	-	-	-	Anchor
SODA ASH	Sodium carbonate	CA	A	-	-	Most cos.
SODIUM BICARBONATE	Sodium bicarbonate	A	CO	V	-	Most cos.
SODIUM BROMIDE	Salt for clear weighted brines	W	SH	-	-	Most cos.
SODIUM CARBONATE	Sodium carbonate	A	CA	-	-	AVA
SODIUM CHLORIDE	NaCl	W	LO	-	-	Most cos.
SODIUM FORMATE	Drill-in base fluid to 11 ppg	W	TE	-	-	Aqualon
SODIUM FORMATE	Sodium formate	W	-	-	-	AVA
SODIUM FORMATE	Drill-in fluid base to 11 ppg	W	TE	-	-	Osca
SODIUM FORMATE	Water-base fl. additive/30% solution	-	-	-	-	Verdugt
SODIUM NITRATE	Tracer for determining filtration invasion	SH	-	-	-	Most cos.
SODIUM SILICATE	Drilling, cementing	-	-	-	-	Henkel
SOLTEX	Sulfonated residuum	SH	LU	TE	-	Drill Spec.
SOLTEX K	Potassium sulphonate asphalt	SH	FR	LU	-	AVA
SOLTEX LIQUID	Liquid sufonated sodium asphalt	SH	LU	-	-	Drill Spec.
SOLTEX, POTASSIUM	Sulfonated residium	E	LU	SH	-	Drill Spec.
SOLUBLE-WATE	Calcium carbonate	W	-	-	-	Messina
SOLUBRIDGE	Fluid loss control agent	LO	FR	-	-	Osca
SOLUBRIDGE	Sized resin particles	LO	-	-	-	TBC-Brinadd
SOLUBRIDGE MID	Sized resin particles	LO	-	-	-	TBC-Brinadd
SOLUBRIGE COARSE	Sized resin particles	LO	-	-	-	TBC-Brinadd

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
SOLUBRIGE FINE	Sized resin particles	LO	-	-	-	TBC-Brinadd
SOLUFLAKE	Flaked calcium carbonate	LO	W	FR	-	BH Inteq
SOLUVIS	Fluid loss control agent	LO	FR	V	-	Osca
SOLVITEX CP	Modified gum	V	-	-	-	Avebe
SORB-OX-L	Liquid oxygen scavenger	CO	-	-	-	Messina
SORB-OX-P	Powdered oxygen scavenger	CO	-	-	-	Messina
SP-101	Sodium polyacrylate	FR	SH	TE	-	M-I
SPA	Sodium polyacrylate	FR	-	-	-	Baker
SPAR	Sodium polyacrylate	FR	FL	TH	-	DX Oilfield
SPEEDER-P	Extreme press. lubricant & wetting agents	LU	P	E	-	Telnite
SPEEDER-PS	High temp. lubricant	LU	P	E	-	Telnite
SPEEDER-X	Surfactant for freeing pipe	P	-	-	-	Telnite
SPERSENE	Chrome lignosulfonate	TH	FR	E	-	M-I
SPERSENE CF	Chrome free lignosulfonate	TH	FR	E	-	M-I
SPERSENE I	Ferrochrome lignosulfonate	TH	TE	FR	-	M-I
SPOTEASE	Non-hydrocarbon, biodegradable lubricant	LU	-	-	-	DSC
SS-10	H2S remover	CO	-	-	-	Osca
STABIL HOLE	Asphaltic additive	SH	LU	FR	-	M-I
STABILITE	Organic phosphate thinner	TH	SU	-	-	Baroid
STABILOSE A	CMS-polymer	FR	V	-	-	Avebe
STABILOSE HTL	Polyanionic thermostable polymer	FR	SH	-	-	Avebe
STABILOSE LV	Polyanionic polymer, low viscosity	FR	SH	-	-	Avebe
STABILUBE	Oxidized asphalt	LU	SH	FR	-	AVA
STABOTEMP HTN	Thermostable high-modified polymer	FR	SH	-	-	Avebe
STAFLO EXLO	Polyanionic cellulose, low visc.	FL	SH	LU	-	Akzo Nobel
STAFLO EXLO	Polyanionic cellulose (PAC)	FR	SH	LU	-	Akzo-Dreeland
STAFLO R	Polyanionic cellulose (PAC)	FR	V	SH	-	Akzo-Dreeland
STAFLO REGULAR	Polyanionic cellulose, high visc.	FL	V	SH	-	Akzo Nobel
STAPLEX 500	Polyalkalene glycol for wellbore stability	SH	LU	FR	-	Dowell
STARCARB	Acid-soluble bridging agent for reservoir drilling	FR	W	LO	-	Dowell
STARCH	Pregelatinized starch	FR	SH	V	-	Most cos.
STARFIX	Stabilized polysaccharide	FR	-	-	-	Messina
STARFIX-PLUS	Premium preserved hydrocolloid	FL	V	-	-	Messina
STARLOSE	Pregelatinized, pre-preserved drilling starch	FR	SH	-	-	Baker
STARLOSE	Non-fermenting pre-gel starch	FR	SH	-	-	Chemstar
STARLOSE C-100	Non-fermenting pre-gel starch	FR	SH	E	-	Chemstar
STARLOSE P-100	Non-fermenting pre-gel starch	FR	SH	E	-	Chemstar
STARPAK	Fluid-loss stabilizer	FR	SH	LU	-	Baker
STARPAK	Polyionic starch ether	FR	SH	V	-	Chemstar
STARPAK II	Complexed, polyionic starch ether	FR	V	SH	-	Chemstar
STARPAK DP	Fluid-loss stabilizer	FR	V	SH	-	Baker
STARPAK DP	Hydroxyalkylated, complexed, polyionic starch ether	FR	V	SH	-	Chemstar
STARPAK II	Fluid-loss stabilizer	FR	SH	LU	-	Baker
STEARALL LQD	Defoamer compound for dispersed muds	D	-	-	-	AVA
STEELSEAL	Dual composition carbon compound	LO	-	-	-	Baroid
STICK-LESS 20	Sized glass spheres	LU	-	-	-	Dodd Int'l.
STRATALUBE	Glycol based high performance lubricant	LU	-	-	-	Ecofluids
STUCKBREAKER	Spotting fluid surfactant	P	-	-	-	Messina
STUCKBREAKER-ES	Environmentally safe spotting fluid	P	-	-	-	Messina
STUCKBREAKER-W	Spotting fluid surfactant	P	-	-	-	Messina
SULFA-TONE	Sulfonated asphalt	SH	FR	-	-	Integrity
SULFATROL	Sulfonated asphalt	FR	SH	-	-	BH Inteq
SULF-X	Envr. acceptable zinc based H2S extractor	CO	-	-	-	M-I
SUPER-BORE-TROL	Potassium shale stabilizer	SH	FR	LU	-	Messina
SUPER COL	Extra high yield bentonite	V	FR	-	-	BH Inteq
SUPER DEFOAMER	Highly active brine defoamer liq.	D	-	-	-	Baker
SUPERDRIL PLUS	Energized gilsonite for wellbore stab.	SH	LU	-	-	Montello
SUPER GEL	High yield Wyoming bentonite	V	-	-	-	Baker
SUPERLIG	North Dakota lignite (leonardite)	FR	TH	E	-	Baker
SUPER PICKLE	Non-aromatic biodegradable pipe dope & mud remover	SU	P	-	-	Well-Flow
SUPER SCRUBBER	Pipe dope remover	SU	-	-	-	TETRA
SUPERSEAL	LCM for very porous zones	LO	-	-	-	Molen
SUPER-SLIDE "M"	Spherical glass beads (20-40 mesh) to reduce torque and drag	LU	-	-	-	BCI
SUPER-SLIDE "C"	Glass beads (12-20 mesh)	LU	-	-	-	BCI
SUPER-SLIDE "F"	Spherical glass beads (170-325 mesh) to reduce torque and drag	LU	-	-	-	BCI
SUPER-STOP	Complex dry powder formulation	LO	V	-	-	Messina
SUPER-STOP-AS	Acid soluble LCM	LO	-	-	-	Messina
SUPER-SWEEP	Mechanical viscosifier (inorganic)	V	LO	-	-	Baker
SUPER VIS-LD	Liq. viscosifier for single salt systems	V	FR	-	-	Osca
SUPRAMYL	Pregelatinized maize starches for drilling	V	-	-	-	Amylum
SUPRAMYL 100	Pregelatinized drilling starch, high temp. stable	V	TE	FR	-	Amylum
SUPRAMYL 101	Pregelatinized drilling starch	V	-	FR	-	Amylum
SUPRAMYL 181	Pregelatinized, fermentation-stable, drilling starch	V	-	FR	-	Amylum
SUPRAMYL 182	Pregelatinized, fermentation-stable, HT stable, drilling starch	V	TE	FR	-	Amylum
SURF-ACT	Mud surfactant	SU	TE	SH	-	Messina
SURFAID 100	Non-toxic mud lubricant	LU	TE	-	-	Global
SURFAID 200	Drilling detergent	SU	E	LU	-	Global
SURFAID 300	Torque & friction reducer	LU	TE	-	-	Global
SURFA ZOL 1202	Oil mud thinner	TH	E	SU	-	Lubrizol
SURFA ZOL 2202	Synthetic oil mud thinner	TH	E	SU	-	Lubrizol

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
SURF-COTE	Oil wetting agent for oil mud	SU	-	-	-	BH Inteq
SUR SWEEP 10	Displacement clean-up fluid	FL	SU	-	-	Global
SUR SWEEP 11	Displacement fluid to remove residues & scales	FL	SU	-	-	Global
SUSPENTONE	Organophilic clay	V	-	-	-	Baroid
SV-120	Hydrogen sulfide scavenger for cold climates	CO	-	-	-	M-I
SWA-157	Supplemental emulsifier	E	FR	SU	-	M-I
SX PLUS	Carbon base, beaded, seepage loss control agent and lub.	LO	LU	FR	-	Coastal Superior
SX-PLUS	Carbon seepage loss agent	LO	FR	-	-	Sun
SYNCARB P	Potassium-based liquid thinner	TH	-	-	-	Global
SYNCARB PHT	H.T. dispersant & fluid-loss control	FR	TH	-	-	Global
SYN-TEQ	Food grade paraffin/olefin base for synthetic fluids	SB	-	-	-	BH Inteq
SYNVERT I	Synthetic primary emulsifier	E	TE	-	-	Integrity
SYNVERT II	Synthetic secondary emulsifier	E	-	-	-	Integrity
SYNVERT FL-G	Synthetic filtrate reducer	FR	TE	-	-	Integrity
SYNVERT TWA	Synthetic thinner	TH	-	-	-	Integrity
SYNVERT VISCOSIFIER	Synthetic viscosifier	V	-	-	-	Integrity
TA-8	Modified tannin compound	TH	TE	FR	-	Bolland
TACKLE	Liquid low M.W. polyacrylate	TH	-	-	-	M-I
TACKLE DRY	Powdered low M.W. polyacrylate	TH	-	-	-	M-I
TANNATHIN	Ground lignite	TH	FR	E	-	M-I
TB-11	Oil in water emulsifier	E	SU	-	-	Bolland
TB-22	Salt water lubricant	LU	-	-	-	Bolland
TCS 30	Non ionic drilling mud surfactant	SU	LU	TE	-	AVA
TECH SEAL	Cellulosic seepage loss additive	LO	FR	-	-	DrillTech
TEKMUD 1901 DISPERSALL	Chrome-free mud thinner	TH	TE	FR	-	Ibex
TEKMUD 1903 FLC	Filtration control agent	FR	TE	-	-	Ibex
TEKMUD 1904	Oil mud emulsifier	E	FR	-	-	Ibex
TEKMUD 1905	Secondary emulsifier/wetting agent	E	SU	-	-	Ibex
TEKMUD 1908	Water soluble lubricant	LU	CO	SU	-	Ibex
TEKMUD 1949	High temp. oil mud viscosifier	V	-	-	-	Ibex
TEKMUD 8588	Biodegradeable lubricant	LU	SH	-	-	Ibex
TEKMUD 8619	High temp. oil mud viscosifier	V	-	-	-	Ibex
TEL-BAR	Barite	W	-	-	-	Telnite
TEL-CELLOSE HP	CMC, pure grade, high vis.	FR	V	-	-	Telnite
TEL-CELLOSE LP	CMC, pure grade, low vis.	FR	V	-	-	Telnite
TEL-CELLOSE TL	CMC, tech. grade, low vis.	FR	V	-	-	Telnite
TEL-CELLOSE TM	CMC, tech. grade, regular	FR	V	-	-	Telnite
TEL-CLEAN	Water-soluble lubricant	LU	SU	-	-	Telnite
TEL-CLEAN S	Water-soluble lubricant	LU	SU	-	-	Telnite
TEL-COAT (DP)	Powdered shale stabilizing polymer	SH	V	FR	-	Telnite
TEL-COAT (L)	Liquid shale stabilizing polymer	SH	V	FR	-	Telnite
TEL-CON	Modified tannin compound	TH	FR	SH	-	Telnite
TEL-DD H	Drlg mud detergent/wetting agent/high grade	SU	-	-	-	Telnite
TEL-DD R	Drlg detergent/wetting agent/regular	SU	-	-	-	Telnite
TEL-FIBER	Fibrous material	LC	-	-	-	Telnite
TEL-FLAKE	Shredded cellophane flakes	LO	-	-	-	Telnite
TEL-FLEX	Liquid shale stabilizing polymer	SH	LU	-	-	Telnite
TEL-FLOW	Sodium polyacrylate	TH	-	-	-	Telnite
TEL-GEL	Wyoming bentonite	V	FR	-	-	Telnite
TEL-LIG	Ferrochrome lignosulfonate	TH	FR	-	-	Telnite
TEL-LIG K	Ferrochrome potassium lignosulfonate	TH	FR	-	-	Telnite
TEL-MARCH	Sodium montmorillonite, organic polymer/crysotile blend	V	FR	-	-	Telnite
TELNITE A	Processed lignite	FR	E	TH	-	Telnite
TELNITE B	Processed sodium lignite	TH	FR	E	-	Telnite
TELNITE BH	Modified lignitic compound	FR	TH	E	-	Telnite
TELNITE BX	Modified lignitic compound	TH	SH	FR	-	Telnite
TELNITE CMHEC	CMC	FR	V	-	-	Telnite
TELNITE FL-80	Chrome-free lignosulfonate	TH	E	FR	-	Telnite
TELNITE HEC	HEC	V	FR	-	-	Telnite
TELNITE SML	Mod. methylsulfonated lignite	FR	E	TH	-	Telnite
TELNITE SMQ	Modified tannin compound	TH	FR	-	-	Telnite
TELNITE SSMA	Sulfonated maleic anhydride copolymer	TH	FR	-	-	Telnite
TEL-PLUG	Ground walnut shells	LO	-	-	-	Telnite
TEL-POLYMER DX	Organic polymer	FR	SH	-	-	Telnite
TEL-POLYMER H	Polyanionic cellulose	FR	V	SH	-	Telnite
TEL-POLYMER L	Polyanionic cellulose	FR	SH	V	-	Telnite
TEL-SAPP	Sodium acid pyrophosphate	TH	-	-	-	Telnite
TEL-SEAL	Vermiculite flakes	LO	-	-	-	Telnite
TEL-STARCH	Pre-gelatinized starch	V	FR	-	-	Telnite
TEL-STOP	Cotton seed hulls, coarse & fine	LO	-	-	-	Telnite
TENSO-MUD	Drilling detergent	SU	E	-	-	Bolland
TEQ MUL	High temp. emulsifier for syn. sys.	E	TE	-	-	BH Inteq
TEQ-THIN CF	Chrome-free modified lignosulfonate	TH	FR	-	-	BH Inteq
TERRADRIL 392	Primary emulsifier base	E	-	-	-	Henkel
TETRA 11.6	38% calcium chloride solution	W	-	-	-	TETRA
TETRA 12.4	Sodium bromide solution	W	-	-	-	TETRA
TETRA 14.2	53% calcium bromide solution	W	-	-	-	TETRA
TETRA 19.2	Calcium bromide zinc bromide sol'n	W	-	-	-	TETRA
TETRA 21.0	High density zinc bromide solution	W	-	-	-	TETRA
TETRA BIOPOL	Select, readily dispersible biopolymer	V	FR	-	-	TETRA
TETRA BIOPOL-L	Liquified, dispersible biopolymer	V	FR	-	-	TETRA
TETRA BUFF-6	Organic carboxylic acid	A	-	-	-	TETRA

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
TETRA BUFF-10	Controlled solubility magnexium oxide	A	-	-	-	TETRA
TETRACARB	Acid soluble bridging agents	LO	W	-	-	TETRA
TETRA CARB-COARSE	Highly acid soluble, coarse grind CaCo3 blend, 400 to 3,500 microns	LO	FR	W	-	TETRA
TETRA CARB-FINE	Highly acid soluble, select grind CaCo3, 1 to 400 microns	FR	W	LO	-	TETRA
TETRA CARB FLUID	CBF based drilling fluid	W	V	LO	-	TETRA
TETRA CARB-MEDIUM	Highly acid soluble, select grind CaCo3, 40 to 1,200 microns	LO	FR	W	-	TETRA
TETRACIDE	Bactericide	B	-	-	-	TETRA
TETRA CMT-X	Magnesium chloride treatment for cement contamination	CA	A	-	-	TETRA
TETRA D111	Surfactant	SU	-	-	-	TETRA
TETRADEFOAM HB	Defoamer	D	-	-	-	TETRA
TETRA EXPRESS	Premium calcium chloride anhydrous	W	-	-	-	TETRA
TETRAHIB	Corrosion inhibitor	CO	-	-	-	TETRA
TETRAHIB-PAK	Three-in-one corrosion inh.	CO	-	-	-	TETRA
TETRAHIB-PLUS	Calcium bromide corrosion inh.	CO	-	-	-	TETRA
TETRA OMD	Oil mud detergent	SU	-	-	-	TETRA
TETRA O-SOL	Wellbore cleanup chemical surfactant	SU	-	-	-	TETRA
TETRA OXBAN	Oxygen remover	CO	-	-	-	TETRA
TETRA POLYACTANT	Water miscible, polar surfactant	SU	-	-	-	TETRA
TETRA-SOL	Solvent	SU	D	-	-	TETRA
TETRA SS-COARSE	Selected PSD range blend of ground NaCl, 1,000 to 10,000 microns	LO	W	FR	-	TETRA
TETRA SS-FINE	Selected fine grind NaCl, 1 to 300 microns	FR	W	LO	-	TETRA
TETRA SS-MEDIUM	Selected PSD range blend of ground NaCl, 100 to 1,500 microns	LO	W	FR	-	TETRA
TETRA STAY	Clay stabilizer	SU	SH	-	-	TETRA
TETRA TDSP I	Spacer-mud removal	-	-	-	-	TETRA
TETRA TDSP II	Spacer-wash	SU	-	-	-	TETRA
TETRA TDSP III	Spacer-sweep	V	-	-	-	TETRA
TETRAVIS	Pure HEC	V	LO	FR	-	TETRA
TETRAVIS	HEC polymer, dry	V	FR	-	-	TETRA
TETRAVIS-BREAK	Viscosity breaker	V	-	-	-	TETRA
TETRAVIS BREAKER	Calcium hypochlorite solution, 12.5%	TH	-	-	-	TETRA
TETRAVIS-L	HEC polymer, liquid	V	FR	-	-	TETRA
TETRAVIS-L HB	Liquified HEC polymer, light hydrocarbon base heavy brine viscosifier	V	FR	-	-	TETRA
TETRAVIS L PLUS	Liquid HEC, double strength	V	LO	FR	-	TETRA
TETRAWASH-II	Alkaline surfactant	SU	-	-	-	TETRA
TETRA-XCD	Dry biopolymer	V	-	-	-	TETRA
TEXTAMINE TFD	Oil mud secondary emulsifier	E	-	-	-	Henkel
THERMABREAK	Internal breakers	-	-	-	-	Integrity
THERMACARB	pH stabilizer for Zn fluids	-	-	-	-	TBC-Brinadd
THERMA-CHEK	High temp. filtrate reducer	FR	-	-	-	Baroid
THERMA-CHEK LV	High temp., low visc. filtrate reducer	FR	-	-	-	Baroid
THERMACOAT	Metal treatment for bits, stabilizers	LU	-	-	-	Integrity
THERMASAL-A	Anhydrous salt antioxidant	TE	-	-	-	TBC-Brinadd
THERMASAL-B	Alkaline salt	A	TE	-	-	TBC-Brinadd
THERMASOLVE	Promotes destruction of filter cake, emulsions & water wets solids	-	-	-	-	Integrity
THERMA-THIN	High temperature deflocculant	TH	-	-	-	Baroid
THERMA-VIS	Synthetic inorganic viscosifier	V	FR	-	-	Baroid
THERMEX	Synthetic resin	FR	TE	TH	-	M-I
THERMPAC UL	Modified polysaccharide	FR	-	-	-	M-I
THERMOGEL	Single component gelling monomer	LO	-	-	-	Gumpro
THERMO MUL	Hi-temp emulsifier	E	-	-	-	Baroid
THERMO PLUS	Hi-temp emulsifier	E	-	-	-	Baroid
THERMO-SEAL	Asphaltic shale stabilizer	SH	LU	FR	-	Messina
THERMO-THIN-S	Sulfonated copolymer	TE	TH	FR	-	Messina
THERMO TONE	Hi-temp filtration reducer	FR	-	-	-	Baroid
THERMO-TROL-50	High temp. stabilizer, conditioner	TE	FR	TH	-	Messina
THERMO-TROL-FL	High temp. liq. filtration polymer	FL	TE	-	-	Messina
THERMO-TROL-X	High temp. stabilizer, conditioner	TE	TH	E	-	Messina
THINEASE	Aqueous acrylic copolymer high performance deflocculant	TH	V	TE	-	DSC
THIXSAL-PLUS	Polymer blend	V	LO	FR	-	AVA
THIXSAL-ULTRA	Polymer blend	FR	V	-	-	TBC-Brinadd
THUSLICK	Micronized siliconized carbon product	LU	SU	FR	-	Premier
TIGHT SEAL BENTONITE	Lost circ. material for complete loss of circ.	LO	-	-	-	BDC
TN FIBER	Acid soluble mineral fiber	LO	-	-	-	Telnite
TOP SPOT	Non-toxic organic blend	P	-	-	-	Newpark
TORK-BEADS	Black carbon bead	LU	P	-	-	Advanced
TORK-BUSTER	Low toxicity lubricant	LU	SH	-	-	Advanced
TORK-BUSTER L	Non-toxic biodegradable liq. lubr.	LU	-	-	-	Baker
TORKEASE CONCENTRATE	Dehydrated Torkease	LU	SH	P	-	DSC
TORKEASE EMULSION	Biodegradable, non toxic lubr.	LU	SH	P	-	DSC
TORQ-TRIM 22	Lubricant	LU	-	-	-	Baroid
TORQ-TRIM II	Lubricant	LU	-	-	-	Baroid
TORQUE-LESS DI 170	Sized glass spheres	LU	-	-	-	Dodd Int'l.

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
TORQUE LUBE	Biodegradable, non-toxic lubr.	LU	SH	SU	-	Frontier
TRANS-FOAM	Regenerative air drilling foam system	FO	-	-	-	Clearwater
TRIMULSO	Oil-in-water emulsifier	P	TE	LU	-	Baroid
TRUDRILL NA HT	High temp., non-asphaltic fluid loss reducer	FR	-	-	-	Dowell
TRUDRILL S	Colloidal fluid-loss reducer	FR	-	-	-	Dowell
TRUFLO 100	Polymeric fluid-loss reducer	FR	-	-	-	Dowell
TRUMUL	Primary emulsifier for Trudrill system	E	-	-	-	Dowell
TRU-OIL	Oil mud basic package	V	E	TE	-	Messina
TRUVIS	High-performance organophilic clay	V	FR	-	-	Dowell
TRUVIS HT	High-performance organoclay for high temp. muds	V	FR	-	-	Dowell
TURBODRIL XT	ROP enhancer	SU	SH	-	-	M-I
TURBO LUBE XL	Drlg lubr. & friction reducer	LU	-	-	-	Turbo
TURBO PHALT	Coupled gilsonite/resin blend	SH	FR	TE	-	Turbo
TURBO POLYMER	Natural polymer	V	-	-	-	Turbo
TURBO SPOT	Non-oil spotting fluid	P	LU	-	-	Turbo
TYLODRILL LV, MV, HV	Calcium/magnesium stable cellulose polymer	V	FL	SH	-	Clariant
TYLOSE BT, B77, VHR, EC2, EC7	Polyanionic techn. grade cellulos polymer	FL	V	SH	-	Clariant
TYLOSE ECH, ECL	Polyanionic pure grade cellulose polymer	V	FL	SH	-	Clariant
TYLOSE EHH	Retarded HEC	V	FL	SH	-	Clariant
TYLOSE EHL, EHM, EH, EHH	Retarded HEC, various visc.	V	FR	SH	-	Clariant
TYLOSE EHM	Retarded HEC, medium visc.	V	FR	SH	-	Clariant
ULTIDRILL BASE FLUID	Synthetic-base fluid, low toxicity & biodegradable	-	-	-	-	Dowell
ULTIDRILL DEFLOC	Thinner for synthetic-base fluids	TH	E	-	-	Dowell
ULTIDRILL EMUL HT	Primary emulsifier for syn.-base fluid	E	FR	-	-	Dowell
ULTIDRILL FL	Secondary emulsifier for syn.-base fluid	E	FR	-	-	Dowell
ULTIDRILL LO-RM II	Rheological modifier for synthetic-based fluids	V	E	FR	-	Dowell
ULTIDRILL OW	Oil-wetting agent forsynthetic-base fluids	SU	TH	-	-	Dowell
ULTRA - Q	Organic salt	SH	FR	-	-	Flowsa
ULTRA BREAKE-M	Alkaline earth peroxide	-	-	-	-	TBC-Brinadd
ULTRACARB 2	Sized calcium carbonates	W	LO	-	-	TBC-Brinadd
ULTRACARB 5	Sized calcium carbonates	W	LO	-	-	TBC-Brinadd
ULTRACARB 20	Sized calcium carbonates	W	LO	-	-	TBC-Brinadd
ULTRACARB 30	Sized calcium carbonates	W	LO	-	-	TBC-Brinadd
ULTRACEL	High-purity CMC	FR	V	SH	-	Messina
ULTRAFLOC	Completion fluid filtration polymer; well clean up flocculant	FL	SU	-	-	Versafloc
ULTRAGEL 7C 90	Bentonite OCMA/API specs	V	FR	FL	-	Cinicola
ULTRA LUBE	ROP enhancer	LU	SU	SH	-	Integrity
ULTRA LUBE II	Offshore extended reach lubricant	LU	-	-	-	Integrity
ULTRA NEW	Grafted lignin chrome-free thinner	TH	FR	E	-	Newpark
ULTRASAL 5E	Sized salt weighting material	W	LO	-	-	TBC-Brinadd
ULTRASAL 5R	Sized salt weighting material	W	LO	-	-	TBC-Brinadd
ULTRASAL 10E	Sized salt weighting material	W	LO	-	-	TBC-Brinadd
ULTRASAL 10R	Sized salt weighting material	W	LO	-	-	TBC-Brinadd
ULTRASAL 20E	Sized salt weighting material	W	LO	-	-	TBC-Brinadd
ULTRASAL 20R	Sized salt weighting material	W	LO	-	-	TBC-Brinadd
ULTRASAL 30E	Sized salt weighting material	W	LO	-	-	TBC-Brinadd
ULTRASAL 30R	Sized salt weighting material	W	LO	-	-	TBC-Brinadd
ULTRA SEAL-C	Sized cellulosic fibers for lost circulation	LO	SH	-	-	M & D
ULTRA SEAL-PLUS	Fibrous, granular & flake material for massive lost circ.	LO	-	-	-	M & D
ULTRA SEAL-POLY PLUG	Single sx blend of sized fibers and crosslinking polymer	LO	-	-	-	M & D
ULTRA SEAL-XLA	Cross link polymer, temp. accelerator	LO	-	-	-	M & D
ULTRA SEAL-XLD	Cross link polymer, mixing enhancer	LO	D	TH	-	M & D
ULTRA SEAL-XLR	Cross link polymer, temp. reducer	LO	-	-	-	M & D
ULTRA SEAL-XP	Specific blend of micronized cellulose fibers	LO	SH	LU	-	M & D
ULTRASOLVE	Biodegradable pipe dope remover, pickle treatment	-	-	-	-	Filco
ULTRASOLVE PLUS	Environmentally safe, water dispersable pipe dope remover, pickle treatment	-	-	-	-	Filco
ULTRA STABLE	Chrome caustic lignite	TH	FR	-	-	Global
ULTRA-THIN	Chrome-free mod. lignite thinner	TH	TE	FR	-	General
ULTRA-THINZ	Chrome free lignin grafted polymer	TH	FR	TE	-	DX Oilfield
UNI-CAL	Chrome lignosulfonate	TH	FR	-	-	BH Inteq
UNI-CAL CF	Lignosulfonate with no chrome added	TH	FR	-	-	BH Inteq
UNICOR	Corrosion inhibitor	CO	-	-	-	Flowsa
UNIFREE	Pipe freeing agent	P	-	-	-	Flowsa
UNIFYBER	Fiber LCM, medium sized	LO	-	-	-	Flowsa
UNISTEAM No. 1	Corrosion inhibitor for geothermal wells	CO	-	-	-	AVA
VEN-BLOCK SYSTEM	Polymer LCM system	LO	-	-	-	Venture
VEN-BREAK 12	Defoamer	D	E	-	-	Venture
VEN-CHEM 121	LM.W. polymer	TH	SH	-	-	Venture
VEN-CHEM 208	Oil base fluid loss additive	FL	TH	-	-	Venture
VEN-CHEM 215	Oil base fluid loss additive	FL	TH	-	-	Venture
VEN-CHEM 222	Oil base fluid loss additive	FR	E	-	-	Venture
VEN-CHEM 606	Complex polysaccharide/tannin	FL	SH	-	-	Venture

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
VEN-CIDE 31	Biocide	B	-	-	-	Venture
VEN-DELTA P	Micronized fiber	LO	-	-	-	Venture
VEN-DET I	Water mud detergent	SU	-	-	-	Venture
VEN-DET II	Oil mud detergent	SU	-	-	-	Venture
VEN-FREE I	Nonaqueous spotting fluid conc.	P	LU	-	-	Venture
VEN-FREE II	Liq. nonaqueous spotting fl. additive	P	LU	-	-	Venture
VEN-FREE III	Solid spotting fluid-liquid	P	LU	-	-	Venture
VEN-FYBER 201	Cellulose fiber/oil-mud seepage loss	LO	-	-	-	Venture
VEN-GEL 410	Organo clay/fiber complex	V	FR	-	-	Venture
VEN-GEL 411	Organo clay/fiber complex	V	FR	-	-	Venture
VEN-GEL 413	Organoclay viscosifier	V	E	-	-	Venture
VEN-GEL 420	Organoclay suspension additive	V	E	-	-	Venture
VEN-K	Potassium lignite	FR	E	SH	-	Venture
VEN-LIG	Oxydized lignite	FR	E	TH	-	Venture
VEN-LUBE I	Pollution free lubricant-liq.	LU	SH	-	-	Venture
VEN-LUBE II	Lubricant-solid	LU	SH	-	-	Venture
VEN-MUL 906	Relaxed oil mud emulsifier	E	FR	-	-	Venture
VEN-MUL 907	Oil mud wetting agent	E	FR	-	-	Venture
VEN-MUL 912	Basic oil mud emulsifier	E	FR	-	-	Venture
VEN-PAK	Blend of organic fibers	LO	-	-	-	Venture
VEN-PEL	Expandable, fibrous LCM	LO	-	-	-	Venture
VEN-PLEX I	Liquid complexer	LO	A	-	-	Venture
VEN-PLEX II	Solid complexer	LO	A	-	-	Venture
VEN-PLUG	Polymer LCM	LO	-	-	-	Venture
VEN-REZ	Resinated lignite	FR	E	SH	-	Venture
VEN-REZ II	Derivatized lignite	FL	TH	-	-	Venture
VEN-TROL 401	Shale control additive	SH	LU	-	-	Venture
VEN-VIS 501	Liquid polymer viscosifier	V	FR	SH	-	Venture
VEN-VIS 503	Liquid polymer viscosifier	V	FR	SH	-	Venture
VERSACLEAN B	Low toxic mineral oil	TH	-	-	-	M-I
VERSACLEAN MOD	Low-end rheology modifier	V	-	-	-	M-I
VERSACLEAN OW	Oil wetting agent	TH	FR	-	-	M-I
VERSACLEAN PE	Primary emulsifier	E	-	-	-	M-I
VERSACLEAN SE	Secondary emulsifier	E	FR	-	-	M-I
VERSACOAT	Emulsifier for oil mud	E	SU	TE	-	M-I
VERSACOM A	Emulsifier/wetting agent package	E	SU	-	-	M-I
VERSAEMUL	Emulsifier, viscosifier for high brine oil emulsion muds	E	V	FR	-	M-I
VERSAFLOC	Flocculant/cleaner for brine fluids	FL	SU	-	-	Filco
VERSAFLOC ULTRA	Wellbore clean up & stabilizer flocculant, brines	FL	SU	-	-	Versafloc
VERSAGEL	Organophilic clay	V	FR	-	-	M-I
VERSA-HRP	Liq. viscosifier & gelling agent for oil muds	V	-	-	-	M-I
VERSALIG	Modified lignite for oil muds	FR	-	-	-	M-I
VERSALUBE	Oil-soluble lubricant	LU	-	-	-	M-I
VERSA MAC	Emulsifier for high-brine content fluid	E	SU	-	-	M-I
VERSAMOD	Oil mud gelling agent & viscosifier	V	-	-	-	M-I
VERSAMUL	Basic emulsifier package for oil muds	E	FR	V	-	M-I
VERSAPAC	Thermally activate d organic thixotrope	V	-	-	-	M-I
VERSAPRO P/S	Primary emulsifier	E	-	-	-	M-I
VERSA SURF	Emulsifier & wetting agent for high brine oil emulsion muds	E	SU	TE	-	M-I
VERSA-SWA	OBM wetting agent for high brine content sys.	SU	E	-	-	M-I
VERSATHIN	Oil mud dispersant	TH	-	-	-	M-I
VERSATRIM	Reduces oil cuttings retention	SU	E	-	-	M-I
VERSATROL I	Natural occuring asphalt	FR	-	-	-	M-I
VERSATROL NS	Oil base mud filtration control additive	FR	-	-	-	M-I
VERSA VB	Emulsifier & wetting agent for oil emulsion muds	E	SU	TE	-	M-I
VERSAVERT B	Low toxic mineral oil	TH	-	-	-	M-I
VERSAVERT F	HPHT fluid loss reducer	FR	-	-	-	M-I
VERSAVERT M	Low-end rheology modifier	V	-	-	-	M-I
VERSAVER PE	Primary emulsifier	E	-	-	-	M-I
VERSAVERT SE	Secondary emulsifier	E	FR	-	-	M-I
VERSAVERT VIS	Organophillic hectorite clay	V	FR	-	-	M-I
VERSAWET	Wetting agent for oil mud	SU	E	-	-	M-I
VG-69	Organophilic clay	V	-	-	-	M-I
VG-HT	Organophilic hectorite clay	V	FR	-	-	M-I
VG-PLUS	Organophilic clay	V	FR	-	-	M-I
VICTOGEL AF	Pregelatinized starch	FR	-	-	-	AVA
VICTOSAL	Modified resistant starch	FR	-	-	-	AVA
VICTOSAL MMH	Modified resistant starch for MMH system	FR	SH	-	-	AVA
VIS	Pure synthetic polymer	V	FR	-	-	Osca
VISCEASE	Bentonite extender, flocculant & hole sweep	V	SH	-	-	DSC
VISCO 83	Pure PAC regular	V	FR	SH	-	AVA
VISCO 83 LQD	Liquid polyanionic polymer	V	FR	SH	-	AVA
VISCO ACT	Biopolymer	V	SH	-	-	AVA
VISCO X	Biopolymer	V	SH	-	-	AVA
VISCO XC	Biopolymer	V	SH	-	-	AVA
VISCO XC 84	Pure xantan gum polymer	V	SH	-	-	AVA
VISFLO	Polyanionic cellulosic polymer	FR	V	SH	-	Messina
VISPAC	Polyanionic cellulosic polymer	FR	V	SH	-	Messina
VISPLEX	Mixed metal hydroxide	V	SH	-	-	Ambar
VISPLEX II	Mixed metal hydroxide	V	SH	-	-	Dowell
VIS-PLUS	Organic viscosifier	V	-	-	-	Baroid
VIS-X	Xanthan biopolymer derivative	V	-	-	-	Messina

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
W-306	Brine/fresh water viscosifier	V	FR	-	-	BH Inteq
W-307	Brine/fresh water viscosifier	V	FR	-	-	BH Inteq
WA	Oil wetting agent	SU	E	FR	-	Newpark
WALL-GUARD	Water soluble additives	LU	FR	SH	-	BCI
WALLNUT	Ground nut hulls	LO	-	-	-	Most cos.
WATER GEL	Wyoming bentonite	V	FR	-	-	EMEC
WATESAL	Sized salt	W	LO	-	-	Osca
WATESEAL-A	Salts blend	W	LO	FR	-	AVA
WDP	Polymer blend	V	FR	-	-	Drilpro
WELCIDE	Bactericide	B	-	-	-	Messina
WELCIDE-52	Liquid bactericide concentrate	B	-	-	-	Messina
WELCIDE-522	Liquid bactericide	B	-	-	-	Messina
WELCIDE-HT	Thiocarbamate-type bactericide	B	-	-	-	Messina
WELCIDE-L	Liquid bactericide	B	-	-	-	Messina
WELLPLUG	Ground pecan shells, various grades	LO	-	-	-	Ambar
WELL WASH I	Surfactant & mixed alcohol water base dispacement	SU	-	-	-	Deep South
WELL WASH II	Surfactant & alcohol water base displacement	SU	-	-	-	Deep South
WELL WASH 100	Casing wash for water-based fluids	SU	-	-	-	Osca
WELL WASH 200	Casing wash for oil & invert fluids	-	-	-	-	Osca
WELL WASH 500	Casing wash; flocculant for displacement	FL	-	-	-	Osca
WELL WASH 2000	Casing wash for oil or synthetic mud displacements	SU	-	-	-	Osca
WF 450/HT	Synthetic polymer	FR	TH	TE	-	World
WF ALUMINUM STEARATE	Defoamer, aluminum stearate	D	-	-	-	World
WF AMONIUM BISULFITE	O2 scavenger, amonium bisulfite	CO	-	-	-	World
WF ANTIFOAM	Oil-soluble defoamer	D	SU	-	-	World
WF ANTIFOAM C91	Alcohol-soluble silicone defoamer	D	SU	-	-	World
WF ASPHALT	Premium asphalt powder	FR	-	-	-	World
WF BAR	Barium Sulfate	W	-	-	-	World
WF BEN	OCMA bentonite; fresh-wtr visc.	V	FR	-	-	World
WF BIOCIDE	Drlg mud preservative	B	-	-	-	World
WF BIO/135	Liq. bactericide for drlg mud, gluteroldyhide base	B	-	-	-	World
WF BRIPAC B/BRIPAC	Filming amine; water-soluble packer fl./corr. inh.	CO	-	-	-	World
WF CALSPERSE	Calcium lignosulfonate	TH	FR	-	-	World
WF CHROME-LIG	Chrome lignite	TE	TH	FR	-	World
WF C-LIG	Caustcised lignite	TH	FR	TE	-	World
WF CMS-LV	Carboxy methylated starch, low visc.	FR	V	-	-	World
WF COR/7026	Corr. inh. for packer fluids, water soluble	CO	-	-	-	World
WF COR/7030	Corr. inh. for mud, oil soluble	CO	-	-	-	World
WF DEFOAM	Silicone & alcohol surface active agent blend, water soluble	D	SU	-	-	World
WF DEFOAM A	Alcohol blend drilling fluid defoamer	D	-	-	-	World
WF DEFOAM AS	Alcohol & polyol blend drilling fluid defoamer	D	-	-	-	World
WF ENVIROLUB	Non-toxic lubricant & shale inhibitior	LU	SH	-	-	World
WF EP-LUBE	Blend of fatty esters (surfactants)	LU	-	-	-	World
WF EUROGEL	API bentonite, viscosifier in fresh water	V	FR	-	-	World
WF EXTEND	Bentonite extender	FL	V	SH	-	World
WF FCL	Modified lignosulfonate	TH	FR	-	-	World
WF FREEPIPE	Blend of surfactant wetting agents	P	-	-	-	World
WF HEC	Hydroxy ethyl cellulose	V	FR	-	-	World
WF HIB 50	HCl & HCl/HF corrosion inhibitor	CO	-	-	-	World
WF HIB 751	Corr. inhibitor blend for heavy brines	CO	-	-	-	World
WF HIB 752T	Filming amine, high temp. water soluble corr. inh. for P/F	CO	-	-	-	World
WF HIB 757	Filming amine corr. inh., oil soluble for drlg mud	CO	-	-	-	World
WF HIGH-CELL	Sodium, CMC HVP	V	FR	-	-	World
WF HIGH CELL ET	Sodium CMC EHV, extremely high visc., tech. grade	V	FR	-	-	World
WF HIGH CELL T	Sodium CMC HV, high visc. tech. grade	V	FR	-	-	World
WF HIGH-TEMP	Modified lignite	FR	TH	TE	-	World
WF HIGH-TEMP 42	Syn. copolymer; high temp. thinner	TH	FR	TE	-	World
WF KLEEN SURF	Alkylene oxide-based surfactant, cleaner for oil-mud equip.	SU	TH	-	-	World
WF K-SPERSE	Potassium treated lignosulfonate	TH	FR	-	-	World
WF LIGNOSPERSE	Free chrome, iron lignosulfonate	TH	FR	-	-	World
WF LOW-CELL	Sodium, CMC-low viscosity, pure grade	FR	V	-	-	World
WF LOW CELL T	Sodium CMC LVT, low visc. tech. grade	FR	V	-	-	World
WF MODSTAR HTB/HT	Hydrophillic organic polymer, high temp. modified starch, B-Biocide	FR	V	SH	-	World
WF MODSTAR LV/LVB	Pregelatinized starch, B-Biocide, low visc.	FR	V	-	-	World
WF MUD DET-MD	Blended surfactants, drilling detergent	SU	-	-	-	World
WF MUL SPOT	Oil-mud conc., weighted spotting fluid	P	E	-	-	World
WF OCMUL L	Amine-treated lignite, oil wettable (powder)	FR	-	-	-	World
WF OCMUL LHT	High temp., amine-treated lignite, oil wettable (powder)	FR	-	-	-	World
WF OCMUL-LIG	Wetted lignite, fluid reducer	FR	-	-	-	World
WF OCMUL-LIG (HT)	Wetted lignite, high temp. fluid reducer	FR	-	-	-	World
WF OCMUL LS	Surfactant-treated lignite, cationic nature	FR	TE	-	-	World
WF OCMUL-P	Primary emulsifier, cationic fatty imidazoline	E	SU	-	-	World
WF OCMUL-S	Secondary emulsifier	E	FR	-	-	World
WF OCMUL-SF	Surfactant, oil mud thinner	TH	-	-	-	World
WF OCMUL W	Wetting agent for oil mud, thinner (liq.)	TH	SU	-	-	World
WF OCMUL WNT	Liq. emulsifying agent for invert fluid systems (oil in water)	E	SU	-	-	World
WF OCMUL WS	Solid wetting agent for oil mud, thinner	TH	SU	-	-	World

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
WF OCPAC-HV	Viscosifier/fluid loss reducer, polyanionic cellulose high visc.	V	FR	SH	-	World
WF OCPAC HVTS	Polyanionic cellulose, tech. grade, high visc.	V	FR	SH	-	World
WF OCPAC-LVP	Polyanionic cellulose, low vis., pure grade	FR	V	SH	-	World
WF OCPAC LVTS	Polyanionic cellulose, tech. grade, low visc.	FR	SH	-	-	World
WF OCPAC-RTS	Polyanionic cellulose-med. visc., tech. Grade	V	FR	SH	-	World
WF OCPAC-SUPERLO	Polyanionic cellulose, superlow visc.	FR	SH	-	-	World
WF OCVIS	Modified oil dispersable clay, cationic nature	V	-	-	-	World
WF OCVIS 20	High quality organophilic clay	V	-	-	-	World
WF PARAFORMALDEHYDE	Preservative, PFDH	B	-	-	-	World
WF POLYACRYL FL	Sodium polyacrylate (PHPA) powder, high M.W.	V	FR	SH	-	World
WF POLYACRYL L	Sodium polyacrylate (PHPA) liq., high M.W.	V	FR	SH	-	World
WF POLYACRYL LMW	Polyacrylate (PHPA) low M.W.	TH	FR	SH	-	World
WF POLYACRYL THIN	Polyacrylate (PHPA), low M.W.	TH	FR	SH	-	World
WF QUICK-FOAM	Anionic surfactant	FO	-	-	-	World
WF SALT GEL	Attapulgite clay	V	FR	-	-	World
WF SCALE FREE I/II/III	Three grades of scale inh. for carbonates & sulfate scale inhibition in w/o	SU	-	-	-	World
WF SODIUM BISULFITE	O2 scavenger, sodium bisulfite	CO	-	-	-	World
WF SODIUM SULFITE	O2 scavenger, sodium sulfite	CO	-	-	-	World
WF SPUD MUD	Guar gum	V	-	-	-	World
WF SPUD MUD HV	Guar gum, high visc.	V	-	-	-	World
WFSTABILHOLE	Surfactant coated gilsonite	SH	FR	-	-	World
WFSTABILHOLE 120	Synthetic gilsonite	SH	FR	-	-	World
WF SULFOTEX	Shale inhibitor, sufonated asphalt	SH	FR	LV	-	World
WF SURFACTAMUL 20	Anionic anti-sludge agent	SU	-	-	-	World
WF SURFACTAMUL 28A	Cationoc silt suspending agent	SU	-	-	-	World
WF SURFACTAMUL 625	Anionic surfactant blend	SU	SH	-	-	World
WF SURFACTAMUL E	Non-ionic surfactant emulsifier	SU	E	-	-	World
WF SURFACTAMUL S	Oil in water emulsifier, non-ionic surfactant	SU	SH	-	-	World
WF SYNPOL	Phenolic resimated lignite	FR	TE	-	-	World
WF WASHMUL	Alcohol ethoxylate cutting-wash agent for oil muds	SU	-	-	-	World
WF XANPOL D	Xantham gum XC biopolymer	V	FR	-	-	World
WF XANPOL P	Pure grade xantham biopolymer	V	FR	-	-	World
WF ZINC CARBONATE	H2S remover, ZnCO3 powder	CO	-	-	-	World
WF ZINC CHELATE	H2S remover, liq. water soluble	CO	-	-	-	World
PRO-VIS	Liquid high M.W. anionic polymer	V	SH	-	-	Progress
WL-100	Sodium polyacrylate	FR	-	-	-	Kelco
W.O. 21	Hydroxyethyl cellulose	V	-	-	-	BH Inteq
W.O. 21L	Liquid HEC viscosifier for workover fluids	V	-	-	-	BH Inteq
W.O. 30	Sized ground calcium carbonate	W	-	-	-	BH Inteq
W.O. DEFOAM	Alcohol base compound for defoaming water base fluids	D	-	-	-	BH Inteq
WORK-O-DRIL C	Calcium carbonate based blend	FR	V	-	-	Drilpro
WORK-O-DRIL R	Oil-soluble resin based blend	FR	V	-	-	Drilpro
XAN-PLEX	Xanthan biobolymer	V	FR	-	-	BH Inteq
XAN-PLEX D	Dispersible biopolymer	V	FR	-	-	BH Inteq
XANVIS	Completion grade xanthan gum	V	-	-	-	Kelco
XANVIS L	Completion grade liquid xanthan gum	V	-	-	-	Kelco
XC-102	Bactericide (glutaraldehyde)	B	-	-	-	Aquaness
XC-102W	Winterized bactericide (glutaraldehyde)	B	-	-	-	Aquaness
XC-207	Solid isothiazolone	B	-	-	-	Aquaness
XCD POLYMER	Dispersible xanthan gum biopolymer	-	-	-	-	Baker
XCD POLYMER	Xanthan gum	V	-	-	-	BH Inteq
X-CIDE 207	Isothiazolone-based biocide-powder	B	-	-	-	BH Inteq
X-CIDE 207	Bactericide	B	-	-	-	M-I
XF SEAL	Fiber LCM, small sized	LO	-	-	-	Flowsa
XP-20	Chrome lignite	TE	TH	FR	-	M-I
XP-20 N	Chrome lignite, sodium hydroxide, neutralized	TE	TH	FR	-	M-I
XP-07	Linear alkane based fluid	-	-	-	-	Baroid
XP-1000	Derivitized polysaccharide/biopolymer blend	FR	V	LO	-	Liquid Csg.
XP-2000	Derivitized polysaccharide/biopolymer blend	FR	V	LO	-	Liquid Csg.
X-PEL-G	Water-dispersible gilsonite	SH	LU	FR	-	Kelco
X-TEND II	Bentonite extender	FL	V	-	-	Baroid
XTRA-CONTROL HM	High melt gilsonite	FR	SH	-	-	Ibex
XTRA-DEFLOC	Drilling fluid deflocculant	TH	FR	-	-	Ibex

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
XTRA-DEFOAM	All purpose defoamer	D	-	-	-	Ibex
XTRA-DEFOAM PLUS	Premium multi-system defoamer	D	-	-	-	Ibex
XTRA-DME	Drilling fluid emulsifier	E	SU	-	-	Ibex
XTRA-EP	Oil mud emulsifier	E	FR	-	-	Ibex
XTRA-ESW	Secondary emulsifier/wetting agent	E	SU	-	-	Ibex
XTRA-FOAM PLUS	All purpose foaming agent	FO	-	-	-	Ibex
XTRA-LINER G	Surfactant treated gilsonite	SH	FR	LU	-	Ibex
XTRA-LINER L	Polyol blend for shale inhibition	SH	LU	FR	-	Ibex
XTRA-LINER RG	Untreated gilsonite	SH	FR	-	-	Ibex
XTRA-LUBE	Environmentally safe lubricant	LU	-	-	-	Ibex
XTRA-LUBE XP	Extreme pressure lubricant	LU	SH	P	-	Ibex
XTRA-OIL FLA	Filtration control agent for oil muds	FR	-	-	-	Ibex
XTRA-OIL SPOT	Oil-based spotting fluid	P	SH	PL	-	Ibex
XTRA-SPOT	Glycol base spotting fluid additive	P	-	-	-	Ibex
XTRA-SURF	Drilling fluid surfactant	SU	E	-	-	Ibex
XTRA-THIN	Polymeric thinner	TH	-	-	-	Ibex
XTRA-WET	Wetting agent for gilsonite and asphalt	SU	-	-	-	Ibex
XTRA-WET CONCENTRATE	Wetting agent for gilsonite & asphalt	SU	-	-	-	Ibex
X-VIS	Polymerized fatty acid	V	FR	-	-	Baroid
X-VIS-OLS	Xanthan gum suspension, passes LC-50 & static sheen oil & grease tests	V	SH	LU	-	Integrity
X-VIS-LT	Xanthan gum suspension, passes LC-50 & static sheen tests	V	SH	LU	-	Integrity
ZEOGEL	Attapulgite	V	-	-	-	Baroid
ZETAFLOC	Universal brine flocculant, high temp. well cleaner	FL	SU	-	-	Polymer
ZINC/CALCIUM BROMIDE LIQUID	Zinc/calcium bromide liquid 2.3 Kg/l	W	-	-	-	AVA
ZINC BROMIDE	ZnBr2	W	-	-	-	Most cos.
ZINC CARBONATE	H2S remover	CO	-	-	-	AVA
ZINC CARBONATE	Hydrogen sulfide gas remover	B	-	-	-	Baker
ZINC CARBONATE	H2S remover	B	SU	-	-	Molen
ZINC CHROMATE	Corrosion inhibitor	CO	-	-	-	Most cos.
ZINC OXIDE	Zinc source for oil mud H2S removal	CO	-	-	-	Most cos.
Z-TROL	Synthetic, high temp., polymer	FR	TE	SH	-	Kem-Tron

CHEMICAL INVENTORY:

CEMENTING CHEMICALS

Cementing Chemicals: Codes, Functional Categories, Descriptions and Material Types Used

Code	Functional Categories	Description	Material Types Used
BC	Basic cements	Basic materials	Portland cements, blast furnace slag, calcium aluminate
AS	Accelerators and salts	Increases rate of setting	Sodium chloride, calcium chloride, sodium silicate, calcium sulfate hemihydrate
ED	Extenders and density-reducing additives	Increases volume of mix and reduces density	Bentonite, attapulgite, flyash, natural pozzolan, diatomaceous earth, perlite, fumed silica, glass microspheres
FWS	Free water control and solids suspending agents	Improves uniformity of the mix	Polymers, sodium silicates, biopolymers, bentonite, attapulgite, fumed silica
DIS	Dispersants	Disperses fine solids and prevents settling	Polynaphthalene sulfonate, citric acid and citrate salts, proprietary additives
BIE	Bond improving and expanding additives	Improves bond to formation and casing	Styrene/butadiene copolymer, fumed silica, fumed silica/flyash blend, calcium sulfate hemihydrate, metal oxide, aluminum powder, proprietary materials
FCA	Fluid-loss control additives	Reduces loss of liquids from mix to formation	Proprietary materials, styrene/butadiene copolymer, acrylic latex
SHT	Silica to reduce or prevent high temperature strength retrogression	Improves strength in high temperature environments	Sand, silica flour, microfine silica
RET	Retarders	Slows rate of setting	Lignosulfonate, modified lignosulfonate, organic acid, carboxymethyl hydroxyethyl cellulose, borax/borate salt, non-borax/borate salt, proprietary synthesized polymer or copolymer, citric acid or citrate salt
AGM	Anti-gas migration agents	Controls gas flow through mix	Polymeric blends (non latex), styrene/butadiene copolymer, acrylic, fumed silica, fumed silica/polymer blends, calcium sulfate hemihydrate, proprietary polymeric blends, aluminum powder
ADA	Anti-foam and defoaming agents	Reduces foaming in the cement mix	High molecular weight alcohols, polyalcohols, silicones
DIW	Density increasing or weighting agents	Increases density of the mix	Sand, silica flour, microfine silica, ilmenite, hematite, barite, manganese oxides, calcium carbonate
LCA	Additives and mixtures to reduce or prevent lost circulation	Reduces loss of cement to the formation	Cements, foamed cement, non-aqueous slurries, sodium silicate solutions, sand, mica, cellophane flake, gilsonite, ground coal, walnut plugs, perlite, polymer fibers, wood chips, polyester, ground thermoplastic or rubber, proprietary materials
SCW	Spacers and chemical washes or pre-flushes	Helps in the placement of cement mix	Liquid materials either emulsified or with additives
SCB	Specialty cement blends	Special purpose products	Blends of cement with flyash, clay, pozzolan, silica

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
(1)	Blends of Portland cement with commercial lightweight cements such as TXI Lightweight. (1) No name used, mix is referred to by actual blend ratio.	SCB	-	-	-	American Fracmaster
(1)	Blends of Portland cement with commercial lightweight cements such as TXI Lightweight. (1) No name used, mix is referred to by actual blend ratio.	SCB	-	-	-	BJ Services
1W	Polynapthalene sulfonate (PNS) (powder)	DIS	-	-	-	-
3W	Polynapthalene sulfonate (PNS) (powder)	DIS	-	-	-	San Antonio
50:50:4	Blends of Portland Cement, Flyash and Gel (Bentonite) - Ratio of flyash: cement fixed at 50:50 with bentonite up to about 4%	SCB	-	-	-	American Fracmaster
50:50:4	Blends of Portland Cement, Flyash and Gel (Bentonite) - Ratio of flyash: cement fixed at 50:50 with bentonite up to about 4%	SCB	-	-	-	San Antonio
567	Marerials for use where little or no retarding effect is desired	FCA	-	-	-	Halliburton
A	Portland Cement API Class A	BC	-	-	-	American Fracmaster
A	Portland Cement API Class A	BC	-	-	-	BJ Services
A	Portland Cement API Class A	BC	-	-	-	Dowell
A	Portland Cement API Class A	BC	-	-	-	Nowosco Canada
A	Portland Cement API Class A	BC	-	-	-	San Antonio
A-10	**Form of calcium sulfate hemihydrate or gypsum**. Reduces thickening time of cement. Often used to create thixtrophic cement slurries.May also improve bonding.	AS	BIE	AGM	-	BJ Services
A-2	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	-	-	-	BJ Services
A-3L	**Form of sodium silicate**. Reduces thickening time of cement. Increases slurry viscosity.	AS	FWS	-	-	BJ Services
A-5	**Form of sodium chloride**. Reduces thickening time of cement at concentrations between about 1% and 19% by weight in the mix water.	AS	-	-	-	BJ Services
A-7	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	-
A-9	**Form of potassium chloride.**	AS	-	-	-	BJ Services
ACH-14	Proprietary: For use above about 200°F circulating temperature	DIS	-	-	-	San Antonio
Acid Soluble Cement	Acid soluble cement. Non-Portland inorganic cement completely soluble in acid	BC	SCB	-	-	Dowell
Acid Soluble Cement	Acid soluble cement. Non-Portland inorganic cement completely soluble in acid	BC	SCB	-	-	Fracmaster
Acid Soluble Cement	Acid soluble cement. Non-Portland inorganic cement completely soluble in acid	BC	SCB	-	-	Halliburton
AEF-100L	Proprietary accelerator	AS	-	-	-	BJ Services
AFA-2	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	NOWSCO CANADA
AFA-3	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	BJ Services
AFA-3	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	NOWSCO CANADA
AFL-Lite	Blends of Portland Cement, Flyash and Gel (Bentonite) - Ratio of flyash: cement at 35:65 with bentonite up to about 6%.	SCB	-	-	-	American Fracmaster
Alpha Preflush	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - Containing surfactants and solvents. Contains agents to reduce fluid loss to formations and/or to viscosify solution.	SCW	-	-	-	Halliburton
Alpha Spacer	Spacers -- Aqueous, weighted - unspecified flow regime. Also used in wells drilled with oil based drilling fluids.	SCW	-	-	-	Halliburton
APS-1	Spacers -- Emulsion, weighted - Water continuous (external) phase	SCW	-	-	-	BJ Services
ARCTICSET Cement	Permafrost cement	SCB	-	-	-	Dowell
ASA-301	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	-	-	-	BJ Services
ASA-301L	Polymers, sodium silicates, biopolymers, proprietary chemicals (liquids)	FWS	-	-	-	BJ Services
Attapulgite	Bentonite, Attapulgite, Fumed Silica, etc. ((powder)	FWS	ED	-	-	American Fracmaster
Attapulgite	Bentonite, Attapulgite, Fumed Silica, etc. ((powder)	FWS	ED	-	-	BJ Services
Attapulgite	Bentonite, Attapulgite, Fumed Silica, etc. ((powder)	FWS	ED	-	-	Halliburton
Attapulgite	Bentonite, Attapulgite, Fumed Silica, etc. ((powder)	FWS	ED	-	-	NOWSCO CANADA
B	Portland Cement API Class B	BC	-	-	-	BJ Services
B	Portland Cement API Class B	BC	-	-	-	Dowell
B	Portland Cement API Class B	BC	-	-	-	NOWSCO CANADA
B	Portland Cement API Class B	BC	-	-	-	San Antonio
BA-10	Latex: Acrylic - Matrix flow restriction/blocking (powder)	-	-	-	-	BJ Services
BA-100	Polymeric blends: (Non-Latex) - Matrix flow restriction/blocking (powder)	AGM	BIE	-	-	BJ Services
BA-100L	Polymeric blends: (Non-Latex) - Matrix flow restriction/blocking (liquid)	AGM	BIE	-	-	BJ Services
BA-10L	Latex: Acrylic or equivalent for improves cement bonding to surfaces (Non-expanding additives) used where little or no retarding effect is desired (liquid)	BIE	FCA	AGM	-	BJ Services
BA-29	Aluminum powder blend or similar - Alteration of cement slurry compressibility: Gas-generating agents (powder)	AGM	BIE	-	-	BJ Services
BA-46	Other - Gel strength modification: Thixotropic additives/slurries (lpowder)	AGM	-	-	-	BJ Services
BA-46L	Other - Gel strength modification: Thixotropic additives/slurries (liquid)	AGM	-	-	-	BJ Services
BA-56	Latex: Acrylic or equivalent for improves cement bonding to surfaces (Non-expanding additives) and matrix flow restriction/blocking (powder)	BIE	AGM	-	-	BJ Services

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
BA-56HT	Latex: Acrylic or equivalent for improves cement bonding to surfaces (Non-expanding additives) and matrix flow restriction/blocking (liquid)	BIE	AGM	-	-	BJ Services
BA-58	Fumed Silica (dry) - High surface area, amorphous silica (powder)	ED	FWS	BIE	AGM	BJ Services
BA-58L	Fumed Silica (dry) - High surface area, amorphous silica (liquid suspension)	ED	FWS	BIE	AGM	American Fracmaster
BA-58L	Fumed Silica (dry) - High surface area, amorphous silica (liquid suspension)	ED	FWS	BIE	AGM	BJ Services
BA-61	Aluminum powder blend or similar - Alteration of cement slurry compressibility: Gas-generating agents (powder)	AGM	BIE	-	-	BJ Services
BA-86L	Latex:Styrene/butadiene copolymer or similar	BIE	AGM	FCA	-	BJ Services
BA-90	Fumed silica for improving cement bonding to surfaces (Non-expanding additives) (powder)	BIE	FWS	AGM	-	BJ Services
BA-91	Fumed silica/flyash blend for improving cement bonding to surfaces (Non-expanding additives)	BIE	-	-	-	BJ Services
BA-92	Other proprietary materials (powder)	BIE	-	-	-	BJ Services
Barite	Barite - Barium sulfate SG 4.2 nominal	DIW	-	-	-	American Fracmaster
Barite	Barite - Barium sulfate SG 4.2 nominal	DIW	-	-	-	BJ Services
Barite	Barite - Barium sulfate SG 4.2 nominal	DIW	-	-	-	Fracmaster
Barite	Barite - Barium sulfate SG 4.2 nominal	DIW	-	-	-	Halliburton
Barite	Barite - Barium sulfate SG 4.2 nominal	DIW	-	-	-	NOWSCO CANADA
BDO	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	Halliburton
BDOC	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	Halliburton
Bentonite	Bentonite - Naturally occuring colloidial clay	ED	FWS	-	-	American Fracmaster
Bentonite	Bentonite - Naturally occuring colloidial clay	ED	FWS	-	-	BJ Services
Bentonite	Bentonite - Naturally occuring colloidial clay	ED	FWS	-	-	Fracmaster
Bentonite	Bentonite - Naturally occuring colloidial clay	ED	FWS	-	-	NOWSCO CANADA
Bentonite	Bentonite - Naturally occuring colloidial clay	ED	FWS	-	-	San Antonio
BJ Blue	Polymeric blends: (Non-Latex) - Matrix flow restriction/blocking or for fluid loss control in highly extended or low density slurries(liquid)	AGM	FCA	ED	FWS	**BJ Services**
BJ Thixo	Thixotropic cement slurries: Aqueous	LCA	-	-	-	BJ Services
Black-Lite	Proprietary extender (solid)	ED	-	-	-	BJ Services
Blast Furnace Slag (D930)	Blast furnace slag (BFS). Ground, granulated or pelletized blast furnace slag.	BC	-	-	-	BJ Services
Blast Furnace Slag (D930)	Blast furnace slag (BFS). Ground, granulated or pelletized blast furnace slag.	BC	-	-	-	Dowell
Bondmaster	Expanding cements containing calcium sulfate hemihydrate or similar	SCB	BIE	-	-	Fracmaster
Borax	Borax/borate salt - Retarder aid for lignosulfonates	R	-	-	-	American Fracmaster
BVC-30	Thixotropic cements containing proprietary additives	SCB	-	-	-	NOWSCO CANADA
C	Portland Cement, API Class C, ASTM Type III	BC	-	-	-	American Fracmaster
C	Portland Cement, API Class C, ASTM Type III	BC	-	-	-	BJ Services
C	Portland Cement, API Class C, ASTM Type III	BC	-	-	-	Dowell
C	Portland Cement, API Class C, ASTM Type III	BC	-	-	-	Fracmaster
C	Portland Cement, API Class C, ASTM Type III	BC	-	-	-	NOWSCO CANADA
C Spheres	Pozzalon microspheres - Spherulitic, expanded pozzalonic material often produced with flyash from the burning of coal	ED	-	-	-	American Fracmaster
CA-3	Proprietary accelerator	AS	-	-	-	Fracmaster
CA-4	Proprietary accelerator	AS	-	-	-	Fracmaster
CaCl2	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	American Fracmaster
CaCl2	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	BJ Services
CaCl2	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	Fracmaster
CaCl2L	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	American Fracmaster
CaCl2L	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	BJ Services
CaCl2L	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	Fracmaster
Calcium Chloride	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	Halliburton
Calcium Chloride	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	NOWSCO CANADA
Calcium Chloride	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	San Antonio
Calcium Chloride Liquid	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	Halliburton
Calcium Chloride Liquid	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	San Antonio
Cal-Seal	**Form of calcium sulfate hemihydrate or gypsum**. Reduces thickening time of cement. Often used to create thixtrophic cement slurries. Expanding agent that may also improve bonding	AS	BIE	AGM	LCA	Halliburton
CD-31	Polynapthalene sulfonate (PNS) (powder)	DIS	-	-	-	American Fracmaster
CD-31	Polynapthalene sulfonate (PNS) (powder)	DIS	-	-	-	BJ Services
CD-31L	Polynapthalene sulfonate (PNS) (liquid)	DIS	-	-	-	American Fracmaster
CD-31L	Polynapthalene sulfonate (PNS) (liquid)	DIS	-	-	-	BJ Services
CD-31LN	Polynapthalene sulfonate (PNS) (liquid)	DIS	-	-	-	BJ Services
CD-31LS	Polynapthalene sulfonate (PNS) (liquid)	DIS	-	-	-	BJ Services
CD-32	Supplemental agents for gas migration control - Stabilizer for Latex in low-density slurries	AGM	DIS	FCA	-	BJ Services

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
CD-33	Proprietary, PNS polymeric materials (non-citrate) -(non-lignosulfonate) (powder)	DIS	AGM	FCA	-	BJ Services
CD-33L	Dispersant with non-settling or anti-settling characteristics for easily dispersed cements (liquid)	DIS	-	-	-	BJ Services
Celloflake	Cellophane flake	LCA	-	-	-	American Fracmaster
Celloflake	Cellophane flake	LCA	-	-	-	BJ Services
Celloflake	Cellophane flake	LCA	-	-	-	Fracmaster
Celloflake	Cellophane flake	LCA	-	-	-	NOWSCO CANADA
Cement Grade Salt	**Form of sodium chloride**. Reduces thickening time of cement at concentrations between about 1% and 19% by weight in the mix water.	AS	-	-	-	NOWSCO CANADA
Cenolite	Blends containing lightweight pozzolan microspheres	SCB	-	-	-	BJ Services
Ceramic Spheres	Pozzalon microspheres - Spherulitic, expanded pozzalonic material often produced with flyash from the burning of coal	ED	-	-	-	Fracmaster
CF-1	Supplemental agents for gas migration control - Stabilizer for Latex in low-density slurries	AGM	-	-	-	NOWSCO CANADA
CFR-2	Polynapthalene sulfonate (PNS) - Dispersant with non-settling or anti-settling characteristics (powder)	DIS	-	-	-	Halliburton
CFR-2L	Polynapthalene sulfonate (PNS) Dispersant with non-settling or anti-settling characteristics (liquid)	DIS	-	-	-	Halliburton
CFR-3	Proprietary, non-PNS, non-lignosulfonate, non-citrate (powder)	DIS	-	-	-	Halliburton
CFR-3L	Proprietary, non-PNS, non-lignosulfonate, non-citrate (liquid)	DIS	-	-	-	Halliburton
Channelmaster	Microfine Portland cement, MC-300 or equivalent	BC	-	-	-	Fracmaster
Channelmaster CS	Microfine Portland cement and microfine blast furnace slag blend, MC-500 or equivalent	BC	-	-	-	Fracmaster
Chekmaster	Chemical Washes (Not weighted with solid weighting agents) - Reactive - containing sodium silicate or similar reactive materials	SCW	-	-	-	American Fracmaster
Chemwash D	Chemical Washes Recommended for use in wells drilled with oil base drilling fluids	SCW	-	-	-	American Fracmaster
Chemwash-1	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - containing surfactants and solvents. No fluid loss control.	SCW	-	-	-	American Fracmaster
Ciment Fondu	High aluminate cement (Calcium aluminate cement)	BC	-	-	-	BJ Services
Ciment Fondu	High aluminate cement (Calcium aluminate cement)	BC	-	-	-	Dowell
Ciment Fondu	High aluminate cement (Calcium aluminate cement)	BC	-	-	-	Halliburton
Ciment Fondu	High aluminate cement (Calcium aluminate cement)	BC	-	-	-	NOWSCO CANADA
Ciment Fondu	High aluminate cement (Calcium aluminate cement)	BC	-	-	-	San Antonio
Class C Flyash	Type C flyash - Pozzolanic material that is a by-product of burning coal.	ED	-	-	-	Halliburton
CMHEC	Diacel LWL (carboxymethyl hydroxyethyl cellulose) - Moderate to high temperature (175°F to 300°F) (powder)	R	-	-	-	Fracmaster
CO_2 Resistent Cement	Carbon dioxide (CO_2) resistant cements	SCB	-	-	-	Dowell
Cold Set	Permafrost cement	SCB	-	-	-	BJ Services
Compacted Silicalite	Fumed Silica (dry) - High surface area, amorphous silica (powder)	ED	FWS	BIE	AGM	Halliburton
Component R	Borax/borate salt - Retarder aid for lignosulfonates	R	-	-	-	Halliburton
CPC-1	Aluminum powder blend or similar - Alteration of cement slurry compressibility: Gas-generating agents (powder)	AGM	BIE	-	-	Fracmaster
CR-1	Lignosulfonate, modified lingosulfonate - For low temperature (up to 180°F) (powder)	R	-	-	-	Fracmaster
CR-100	Lignosulfonate, modified lingosulfonate - For low temperature (up to 180°F) (liquid)	R	-	-	-	Fracmaster
CR-102	Lignosulfonate, modified lingosulfonate blend - For mid-range or moderate temperature (125°F to 225°F), (liquid)	R	-	-	-	Fracmaster
CR-105	Organic acid or organic acid salt blend - Moderate to high temperature (175°F to 300°F) (liquid)	R	-	-	-	Fracmaster
CR-105	Modified lignosulfonate blend	R	-	-	-	Fracmaster
CR-2	Lignosulfonate, modified lingosulfonate blend - For mid-range or moderate temperature (125°F to 225°F), (powder)	R	-	-	-	Fracmaster
CR-3	Borax/borate salt - Retarder aid for lignosulfonates	R	-	-	-	Fracmaster
CR-4	Thixotropic cement retarder - For slurries containing calcium sulfate hemihydrate or gypsum	R	-	-	-	Fracmaster
CR-5	Blend of lignosulfonate or modified lignosulfonate with borax or borate salt	R	-	-	-	Fracmaster
CSE	Fumed Silica (dry) - High surface area, amorphous silica (powder)	ED	FWS	BIE	AGM	**BJ Services**
Custom Flush	Reactive washes, polymer solutions - Sodium silicate solutions, complexed sodium silicate solutions, polymer solution	LCA	-	-	-	American Fracmaster
Cuttings K	Proprietary - Acid soluble, expanding bridging agent	LCA	-	-	-	BJ Services
CW-100	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - Containing surfactants and solvents. Contains agents to reduce fluid loss to formations and/or to viscosify solution.	SCW	-	-	-	Dowell
CW-101	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - Containing surfactants and solvents. Contains agents to reduce fluid loss to formations and/or to viscosify solution.	SCW	-	-	-	Dowell
CW-7	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - containing surfactants and solvents. No fluid loss control.	SCW	-	-	-	Dowell
CW-8	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - containing surfactants and solvents. No fluid loss control.	SCW	-	-	-	Dowell
CW-8ES	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - containing surfactants and solvents. No fluid loss control.	SCW	-	-	-	Dowell

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
D.E.	Diatomaceous earth - Lightweight, friable siliceous material derived chiefly from diatom remains.	ED	-	-	-	Halliburton
D110	Organic acid or organic acid salt blend	R	-	-	-	Dowell
D111	Proprietary extender (liquid)	ED	-	-	-	Dowell
D112	Materials for fluid loss control in highly extended or low density	FCA	-	-	-	Dowell
D121	Non-borax/borate salt - Retarder aid for lignosulfonates	DIS	FCA	R	-	Dowell
D124	Pozzalon microspheres - Spherulitic, expanded pozzalonic material often produced with flyash from the burning of coal	ED	-	-	-	Dowell
D127	Marerials for 60°F to 120°F where little or no retarding effect is desired in up to 5% salt solution. (powder)	FCA	-	-	-	Dowell
D128	Attapulgite - Naturally occuring colloidial clay	ED	FWS	-	-	Dowell
D13	Lignosulfonate, modified lingosulfonate	R	-	-	-	Dowell
D130	Polyester, ground thermoplastic or rubber, etc.	LCA	-	-	-	Dowell
D132	Type C flyash - Pozzolanic material that is a by-product of burning coal.	ED	-	-	-	Dowell
D134	Latex:Styrene/butadiene copolymer or similar	BIE	FCA	AGM	-	Dowell
D135	Supplemental agents for gas migration control - Stabilizer for Latex in the presence of salt or at high temperature	AGM	FCA	-	-	Dowell
D136	Materials for fluid loss aid up to about 200°F	FCA	-	-	-	Dowell
D138	Supplemental agents for gas migration control - Stabilizer for Latex in low-density slurries	AGM	FCA	-	-	Dowell
D143	General application for over 300°F, - Effective in the presence of salt over 18% by weight in the mix water (powder)	FCA	-	-	-	Dowell
D144	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	Dowell
D145A	Proprietary, non-PNS, non-lignosulfonate (liquid)	DIS	-	-	-	Dowell
D146	Marerials for 60°F to 120°F where little or no retarding effect is desired in up to 18% salt in the mix water (powder)	FCA	-	-	-	Dowell
D150	Modified lignosulfonate blend - High temperature (Over about 225°F) (liquid)	R	-	-	-	Dowell
D151	Calcium carbonate for use in spacers - SG 2.75	DIW	-	-	-	Dowell
D153	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	-	-	-	Dowell
D154	Fumed Silica (dry) - High surface area, amorphous silica (powder)	ED	FWS	BIE	AGM	Dowell
D155	Fumed Silica (dry) - High surface area, amorphous silica (liquid suspension)	ED	FWS	BIE	AGM	Dowell
D156	Marerials for 60°F to 120°F where little or no retarding effect is desired	FCA	-	-	-	Dowell
D156	Materials for fluid loss control in highly extended or low density	FCA	-	-	-	Dowell
D157	Manganese Oxides - SG 4.6 - 4.9 nominal.	DIW	-	-	-	Dowell
D158	General application for over 300°F, - Effective in the presence of salt up	FCA	-	-	-	Dowell
D159	Materials for fluid loss control in highly extended or low density	FCA	-	-	-	Dowell
D160	General application for up to about 250°F - Effective in the presence of	FCA	-	-	-	San Antonio
D161	Retarders for improved compressive strength in long columns. Helps early compressive strength development where significant temperature differential exists between the top and bottom of the cement column (powder)	R	-	-	-	Dowell
D162	Polymers, sodium silicates, biopolymers, proprietary chemicals (liquids)	FWS	-	-	-	Dowell
D-19	Marerials for 60°F to 120°F where little or no retarding effect is desired in up to about 10% by weight of salt in the mix water (powder)	FCA	-	-	-	NOWSCO CANADA
D-19	Marerials for 60°F to 120°F where little or no retarding effect is desired in up to about 10% by weight of salt in the mix water (powder)	FCA	-	-	-	San Antonio
D20	Bentonite - Naturally occuring colloidial clay	ED	FWS	-	-	Dowell
D20	Bentonite, Attapulgite, Fumed Silica, etc. ((powder)	-	-	-	-	Dowell
D-20	Proprietary extender (solid)	ED	-	-	-	NOWSCO CANADA
D-23	Materials for fluid loss control in highly extended or low density slurries (powder)	FCA	-	-	-	NOWSCO CANADA
D24	Gilsonite	LCA	-	-	-	Dowell
D-24	Materials for fluid loss control	FCA	-	-	-	NOWSCO CANADA
D-25	Marerials for 60°F to 120°F where little or no retarding effect is desired in up to 5% salt solution. (powder)	FCA	-	-	-	NOWSCO CANADA
D28	Modified lignosulfonate blend	R	FCA	-	-	Dowell
D29	Cellophane flake	LCA	-	-	-	Dowell
D30	Sand - Crystalline silica approximately 100 mesh SG 2.65 nominal	SHT	DIW	-	-	Dowell
D-30	Marerials for where little or no retarding effect is desired	FCA	-	-	-	NOWSCO CANADA
D-30	Marerials for where little or no retarding effect is desired	FCA	-	-	-	San Antonio
D300	Materials for fluid loss control in highly extended or low density slurries (liquid)	FCA	-	-	-	Dowell
D31	Barite - Barium sulfate SG 4.2 nominal	DIW	-	-	-	Dowell
D-33	Materials for 80°F to 200°F, general application - Recommend for fresh water slurries only (powder)	FCA	-	-	-	NOWSCO CANADA
D35	Type F flyash - Pozzolanic material that is a by-product of burning coal. Lower in lime content than Type C flyash.	ED	-	-	-	Dowell
D42	Ground coal	LCA	-	-	-	Dowell
D44	**Form of sodium chloride**. Reduces thickening time of cement at concentrations between about 1% and 19% by weight in the mix water.	AS	-	-	-	Dowell
D45	Citric acid, citrate salt or similar for salt saturated slurries	DIS	-	-	-	Dowell
D46	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (solids)	ADA	-	-	-	Dowell
D47	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	Dowell

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
D500	Polymeric blends: (Non-Latex) - Matrix flow restriction/blocking (powder)	AGM	-	-	-	Dowell
D53	**Form of calcium sulfate hemihydrate or gypsum**. Reduces thickening time of cement. Often used to create thixtrophic cement slurries.	AS	BIE	AGM	-	Dowell
D56	Diatomaceous earth - Lightweight, friable siliceous material derived chiefly from diatom remains.	ED	-	-	-	Dowell
D59	General application for 80°F to 200°F in the presence of salt over 18% by weight in the mix water (powder)	FCA	-	-	-	Dowell
D60	Materials for 80°F to 200°F, general application - in salt up to about 18% by weight in the mix water (powder)	FCA	-	-	-	Dowell
D600	Latex:Styrene/butadiene copolymer or similar	BIE	FCA	AGM	-	Dowell
D603	General application for up to about 250°F - Effective in the presence of salt up to about 18% by weight in the mix water (liquid)	FCA	-	-	-	Dowell
D604AM	Proprietary polymeric additives - Gel-strength modification: Delayed gelling, for improving bonding to salt formations (liquid)	BIE	DIS	FCA	AGM	Dowell
D61	Natural Pozzalon - A siliceous and aluminous material produced from natural processes such as volcanic activity.	ED	-	-	-	Dowell
D65	Polynapthalene sulfonate (PNS) (powder)	DIS	-	-	-	Dowell
D65A	Polymeric materials (non-citrate) for salt saturated slurries (solids)	DIS	BIE	FCA	AGM	Dowell
D66	Silica flour - Crystalline silica approximately 200 mesh or finer SG 2.65 nominal	SHT	DIW	-	-	Dowell
D72	Perlite/Expanded perlite - Volcanic glass, spherelitic and hollow	ED	LCA	-	-	Dowell
D73	General application for over 300°F, - Effective in the presence of salt up to about 18% by weight in the mix water (liquid)	FCA	-	-	-	Dowell
D74	Thixotropic cement retarder - For slurries containing calcium sulfate hemihydrate or gypsum	R	-	-	-	Dowell
D75	Sodium Silicate (liquid)	ED	AS	FWS	-	Dowell
D76	Hematite - Iron oxide(s) SG 5.0 - 5.2 nominal	DIW	-	-	-	Dowell
D77	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	Dowell
D79	Sodium silicate (solid)	ED	AS	FWS	-	Dowell
D8	Diacel LWL (carboxymethyl hydroxyethyl cellulose)	R	FCA	-	-	Dowell
D80	Polynapthalene sulfonate (PNS) (liquid)	DIS	-	-	-	Dowell
D800	Lignosulfonate, modified lingosulfonate blend - For mid-range or moderate temperature (125°F to 225°F), (powder)	R	-	-	-	Dowell
D801	Lignosulfonate, modified lingosulfonate blend - For mid-range or moderate temperature (125°F to 225°F), (liquid)	R	-	-	-	Dowell
D80A	Polymeric materials (non-citrate) for salt saturated slurries (liquid)	DIS	BIE	FCA	-	Dowell
D81	Lignosulfonate, modified lingosulfonate	R	-	-	-	Dowell
D93	Borax/borate salt - Retarder aid for lignosulfonates	R	-	-	-	Dowell
D-Air 2	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	Halliburton
D-Air 3	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	Halliburton
D-Air1	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (solids)	ADA	-	-	-	Halliburton
Deep Set™	Deepwater cements: Blends for use in cold temperature environments of deep water drilling where shallow water flow zones are a problem	SCB	-	-	-	BJ Services
DEF-1	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	Fracmaster
DEF-3	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (solids)	ADA	-	-	-	Fracmaster
DEF-5	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	Fracmaster
Diacel	Diacel LWL (carboxymethyl hydroxyethyl cellulose) - Moderate to high temperature (175°F to 300°F) (powder)	R	FCA	-	-	American Fracmaster
Diacel	Diacel LWL (carboxymethyl hydroxyethyl cellulose) - Moderate to high temperature (175°F to 300°F) (powder)	R	FCA	-	-	BJ Services
Diacel	Diacel LWL (carboxymethyl hydroxyethyl cellulose) - Moderate to high temperature (175°F to 300°F) (powder)	R	FCA	-	-	Dowell
Diacel	Diacel LWL (carboxymethyl hydroxyethyl cellulose) - Moderate to high temperature (175°F to 300°F) (powder)	R	FCA	-	-	Halliburton
Diacel	Diacel LWL (carboxymethyl hydroxyethyl cellulose) - Moderate to high temperature (175°F to 300°F) (powder)	R	FCA	-	-	NOWSCO CANADA
Diacel	Diacel LWL (carboxymethyl hydroxyethyl cellulose) - Moderate to high temperature (175°F to 300°F) (powder)	R	FCA	-	-	San Antonio
Diacel A	**Form of sodium silicate**. Reduces thickening time of cement. Increases slurry viscosity.	AS	ED	FWS	-	American Fracmaster
Diacel A	**Form of sodium silicate**. Reduces thickening time of cement. Increases slurry viscosity.	AS	ED	FWS	-	BJ Services
Diacel A	**Form of sodium silicate**. Reduces thickening time of cement. Increases slurry viscosity.	AS	ED	FWS	-	Dowell
Diacel A	**Form of sodium silicate**. Reduces thickening time of cement. Increases slurry viscosity.	AS	ED	FWS	-	Halliburton
Diacel A	**Form of sodium silicate**. Reduces thickening time of cement. Increases slurry viscosity.	AS	ED	FWS	-	San Antonio
Diacel D	Diatomaceous earth - Lightweight, friable siliceous material derived chiefly from diatom remains.	ED	-	-	-	American Fracmaster
Diacel D	Diatomaceous earth - Lightweight, friable siliceous material derived chiefly from diatom remains.	ED	-	-	-	BJ Services
Diacel D	Diatomaceous earth - Lightweight, friable siliceous material derived chiefly from diatom remains.	ED	-	-	-	Halliburton

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Diacel D	Diatomaceous earth - Lightweight, friable siliceous material derived chiefly from diatom remains.	ED	-	-	-	San Antonio
Diacel LWL	General application	FCA	R	-	-	American Fracmaster
Diacel LWL	General application	FCA	R	-	-	BJ Services
Diacel LWL	General application	FCA	R	-	-	Dowell
Diacel LWL	General application	FCA	R	-	-	Halliburton
Diacel LWL	General application	FCA	R	-	-	NOWSCO CANADA
Diacel LWL	General application	FCA	R	-	-	San Antonio
Diesel Cement	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	American Fracmaster
Diesel Cement	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	Fracmaster
Diesel Cement	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	NOWSCO CANADA
Diesel gel	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	NOWSCO CANADA
Diesel Oil Cement	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	BJ Services
Diesel Oil/Bentonite	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	BJ Services
DOC	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	Halliburton
Dual Spacer	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates	SCW	-	-	-	Halliburton
Dual Spacer	Spacers -- Recommended for use in wells drilled with oil base drilling fluids	SCW	-	-	-	Halliburton
Dual Spacer E	Spacers -- Formulations compatible with high salt concentrations	SCW	-	-	-	Halliburton
EA-2	**Form of calcium sulfate hemihydrate or gypsum**. Reduces thickening time of cement. Often used to create thixtrophic cement slurries.	AS	BIE	AGM	-	Halliburton
EC-1	Metal oxide - expanding agents that may also improve bonding	BIE	-	-	-	BJ Services
EC-2	Metal oxide - expanding agents that may also improve bonding	BIE	-	-	-	BJ Services
Econofill	Blends of Portland Cement, Flyash and Gel (Bentonite) - Other ratios	SCB	-	-	-	BJ Services
Econolite	Sodium silicate (solid)	ED	AS	FWS	-	Halliburton
EPSEAL	Synthetic resin cements: Epoxy resin cement	SCB	BC	-	-	Halliburton
Esfelite	Glass microspheres - Scotchlite or similar	ED	-	-	-	San Antonio
EXC	Sodium silicate (solid)	ED	AS	FWS	-	NOWSCO CANADA
EXC-L	Sodium Silicate (liquid)	ED	AS	FWS	-	NOWSCO CANADA
Expand-O-Mix	Expanding cements containing calcium sulfate hemihydrate or similar	SCB	-	-	-	NOWSCO CANADA
EXT-100	Sodium Silicate (liquid)	ED	AS	FWS	-	Fracmaster
FAC	Blends of Portland Cement, Flyash and Gel (Bentonite) (FAC or flyash cementis used to describe all blrends of flyash and cement. The ration is specific to the application.)	SCB	-	-	-	BJ Services
Fastmaster2	Other - Gel strength modification: Thixotropic additives/slurries (lpowder)	AGM	-	-	-	Fracmaster
FC-19	Marerials for 60°F to 120°F where little or no retarding effect is desired in up to 18% salt in the mix water (powder)	FCA	-	-	-	San Antonio
FC-2	General application for 80°F to 200°F in the presence of salt over 18% by weight in the mix water (powder)	FCA	-	-	-	San Antonio
FC-22	Marerials for where little or no retarding effect is desired	FCA	-	-	-	BJ Services
FC-22	Marerials for where little or no retarding effect is desired	FCA	-	-	-	San Antonio
FC-9	General application for up to about 250°F - Effective in the presence of salt up to about 10% by weight in the mix water (powder)	FCA	-	-	-	San Antonio
FE-2	Citric acid, citrate salt or similar for salt saturated slurries	DIS	-	-	-	Halliburton
Fiber cement	Fiber cement: Cement containing fibers to increase resistance and durability to mechanical shock and tensile stresses	SCB	-	-	-	BJ Services
FILLMASTER	Blends of Portland Cement, Flyash and Gel (Bentonite) - Ratio of flyash: cement fixed at 50:50 with bentonite up to about 4%	SCB	-	-	-	Fracmaster
Fine Grind Class C Cement	High Fineness cement. Cement griund finer than normal but not as fine as microfine cement	BC	-	-	-	BJ Services
FL-25	Materials for general application	FCA	-	-	-	BJ Services
FL-25	Materials for general application	FCA	-	-	-	Halliburton
FL-32	General application (powder)	FCA	-	-	-	BJ Services
FL-32L	General application (liquid)	FCA	-	-	-	BJ Services
FL-33	Marerials for where little or no retarding effect is desired (powder)	FCA	-	-	-	BJ Services
FL-33L	Marerials for where little or no retarding effect is desired (powder)	FCA	-	-	-	BJ Services
FL-45LN	Polymeric blends: (Non-Latex)	FCA	AGM	-	-	BJ Services
FL-45LS	Marerials for where little or no retarding effect is desired	FCA	AGM	-	-	BJ Services
FL-52	Materials for 80°F to 200°F, general application - in salt up to about 18% by weight in the mix water (powder)	FCA	-	-	-	BJ Services
FL-52	Materials for 80°F to 200°F, general application - in salt up to about 18% by weight in the mix water (powder)	FCA	-	-	-	Halliburton
FL-52	General application	FCA	-	-	-	BJ Services
FL-52	General application	FCA	-	-	-	Halliburton
FL-62	Marerials for where little or no retarding effect is desired	FCA	-	-	-	BJ Services
FL63	General application (powder)	FCA	-	-	-	BJ Services
FL-63L	Marerials for where little or no retarding effect is desired (liquid)	FCA	-	-	-	BJ Services
FLAG-56	Latex: Acrylic or equivalent for improves cement bonding to surfaces (Non-expanding additives) (powder)	BIE	AGM	-	-	BJ Services
FLC-1	Marerials for where little or no retarding effect is desired	FCA	-	-	-	Fracmaster
FLC-100	Marerials for where little or no retarding effect is desired	FCA	-	-	-	Fracmaster
FLC-107	Marerials for where little or no retarding effect is desired	FCA	-	-	-	Fracmaster
FLC-2	Materials for fluid loss aid up to about 200°F	FCA	-	-	-	Fracmaster
FLC-4	Materials for general application	FCA	-	-	-	Fracmaster

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
FLC-5	Marerials for 60°F to 120°F where little or no retarding effect is desired in up to 5% salt solution. (powder)	FCA	-	-	-	Fracmaster
FLC-7	Marerials for where little or no retarding effect is desired	FCA	-	-	-	Fracmaster
FLC-8	Materials for general application	FCA	-	-	-	Fracmaster
Flex Seal	Polyester, ground thermoplastic or rubber, etc.	LCA	-	-	-	BJ Services
FLEXCEM	Carbon dioxide (CO_2) resistant cements: Portland cements with additives to reduce acid solubility	SCB	-	-	-	Halliburton
Flex-Plug	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	Halliburton
Flo Guard	Chemical Washes (Not weighted with solid weighting agents) - Reactive - containing sodium silicate or similar reactive materials	SCW	-	-	-	BJ Services
FloBloc 210	Latex: Acrylic or equivalent for improves cement bonding to surfaces (Non-expanding additives) (powder)	BIE	-	-	-	Halliburton
Flocele	Cellophane flake	LCA	-	-	-	Halliburton
Flo-Guard L	Reactive washes, polymer solutions - Sodium silicate solutions, complexed sodium silicate solutions, polymer solution	LCA	-	-	-	BJ Services
Flow Stop 4000	Deepwater cements: Blends for use in cold temperature environments of deep water drilling where shallow water flow zones are a problem	SCB	-	-	-	Halliburton
Flow Stop I	Deepwater cements: Blends for use in cold temperature environments of deep water drilling where shallow water flow zones are a problem	SCB	-	-	-	Halliburton
Flowcheck	Chemical Washes (Not weighted with solid weighting agents) - Reactive - containing sodium silicate or similar reactive materials	SCW	-	-	-	BJ Services
Flyash	Type F flyash - Pozzolanic material that is a by-product of burning coal. Lower in lime content than Type C flyash.	ED	-	-	-	BJ Services
Flyash	Type C flyash - Pozzolanic material that is a by-product of burning coal.	ED	-	-	-	BJ Services
FM-AF-L	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	American Fracmaster
FM-AF-P	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (solids)	ADA	-	-	-	American Fracmaster
FMD-1300	Proprietary, non-PNS, non-lignosulfonate (powder)	DIS	-	-	-	American Fracmaster
FM-FL-1200	Marerials for where little or no retarding effect is desired	FCA	-	-	-	American Fracmaster
FM-HTFL-1250	General application	FCA	-	-	-	American Fracmaster
FM-HTFL-1270	Marerials for where little or no retarding effect is desired	FCA	-	-	-	American Fracmaster
FM-HTFL-1270	Marerials for where little or no retarding effect is desired	FCA	-	-	-	Halliburton
FM-Lite	Blends containing cement, silica fume and pozzolan microshperes	SCB	-	-	-	American Fracmaster
FM-MTB 1500	Citric acid, citrate salt or similar for salt saturated slurries	DIS	-	-	-	American Fracmaster
FM-MTB 1600	Polymeric materials (non-citrate) for salt saturated slurries (solids)	DIS	-	-	-	American Fracmaster
FMR-1400	Lignosulfonate, modified lingosulfonate	R	-	-	-	American Fracmaster
FM-R-22	Organic acid or organic acid salt blend - Moderate to high temperature (175°F to 300°F) (powder)	R	-	-	-	American Fracmaster
FM-R-4	Lignosulfonate, modified lingosulfonate blend - For mid-range or moderate temperature (125°F to 225°F), (liquid)	R	-	-	-	American Fracmaster
FM-SR-1100	Silica flour - Crystalline silica approximately 200 mesh or finer SG 2.65 nominal	SHT	DIW	-	-	American Fracmaster
FM-SR-1150	Sand - Crystalline silica approximately 100 mesh SG 2.65 nominal	SHT	-	-	-	American Fracmaster
FM-SR-1150	Sand - Crystalline silica approximately 100 mesh SG 2.65 nominal	DIW	-	-	-	American Fracmaster
Foamed Cement	Alteration of cement slurry compressibility	AGM	LCA	-	-	American Fracmaster
Foamed Cement	Alteration of cement slurry compressibility	AGM	LCA	-	-	BJ Services
Foamed Cement	Alteration of cement slurry compressibility	AGM	LCA	-	-	Dowell
Foamed Cement	Alteration of cement slurry compressibility	AGM	LCA	-	-	Fracmaster
Foamed Cement	Alteration of cement slurry compressibility	AGM	LCA	-	-	Halliburton
Foamed Cement	Alteration of cement slurry compressibility	AGM	LCA	-	-	NOWSCO CANADA
FOMS-100	Spacers -- Emulsion, weighted - Oil continuous (external) phase	SCW	-	-	-	American Fracmaster
FOMS-200	Spacers -- Recommended for use in wells drilled with oil base drilling fluids	SCW	-	-	-	American Fracmaster
FOMS-300	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates	SCW	-	-	-	American Fracmaster
Fondu	High aluminate cement (Calcium aluminate cement)	BC	-	-	-	American Fracmaster
Fondu	High aluminate cement (Calcium aluminate cement)	BC	-	-	-	Fracmaster
FP-10L	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	BJ Services
FP-11	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (solids)	ADA	-	-	-	BJ Services
FP-12L	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	BJ Services
FP-6L	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	BJ Services
FP-9L	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	BJ Services
FRC-100	Polynapthalene sulfonate (PNS) (liquid)	DIS	-	-	-	Fracmaster
FRC-2	Citric acid, citrate salt or similar for salt saturated slurries	DIS	R	-	-	Fracmaster
FRC-3	Polynapthalene sulfonate (PNS) (powder)	DIS	-	-	-	Fracmaster
FS-1	Fumed Silica (dry) - High surface area, amorphous silica (powder)	ED	FWS	BIE	SHT	Fracmaster
FS-1	Fumed silica - Matrix flow restriction/blocking (powder)	AGM	-	-	-	Fracmaster
FS-101	Fumed Silica (dry) - High surface area, amorphous silica (liquid suspension)	ED	FWS	BIE	AGM	Fracmaster
FT-4	Polynapthalene sulfonate (PNS) (powder)	DIS	-	-	-	NOWSCO CANADA
FT-4	Polynapthalene sulfonate (PNS) (powder)	DIS	-	-	-	San Antonio
FT-4L	Polynapthalene sulfonate (PNS) (liquid)	DIS	-	-	-	San Antonio
Fumed Silica	Fumed Silica (dry) - High surface area, amorphous silica (powder)	ED	BIE	AGM	-	American Fracmaster
FW-1	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	-	-	-	NOWSCO CANADA

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
FW-2	Polymers, sodium silicates, biopolymers, proprietary chemicals (liquids)	FWS	-	-	-	NOWSCO CANADA
FWC-3	Bentonite, Attapulgite, Fumed Silica, etc. ((powder)	FWS	-	-	-	Fracmaster
FWC-47	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	-	-	-	BJ Services
FWC-47L	Polymers, sodium silicates, biopolymers, proprietary chemicals (liquids)	FWS	-	-	-	BJ Services
FWCA	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	-	-	-	Halliburton
G	Portland Cement, API Class G or H	BC	-	-	-	BJ Services
G	Portland Cement, API Class G or H	BC	-	-	-	Dowell
G	Portland Cement, API Class G or H	BC	-	-	-	Fracmaster
G	Portland Cement, API Class G or H	BC	-	-	-	NOWSCO CANADA
G	Portland Cement, API Class G or H	BC	-	-	-	San Antonio
GasBlockLT	Polymeric blends: (Non-Latex) - Matrix flow restriction/blocking (powder)	AGM	-	-	-	Dowell
Gas-Chek	Gas generating agents: aluminum powder or similar (liquid)	BIE	AGM	-	-	Halliburton
GasCon 469	Polymers, sodium silicates, biopolymers, proprietary chemicals (liquids)	ED	FWS	-	-	Halliburton
GasStop	Proprietary polymeric additives - Gel-strength modification: Delayed gelling (powder)	AGM	-	-	-	Halliburton
GasStop HT	General application	FCA	AGM	-	-	Halliburton
GasStop L	Proprietary polymeric additives - Gel-strength modification: Delayed gelling (liquid)	AGM	-	-	-	Halliburton
GasStop LXP	Proprietary polymeric additives - Gel-strength modification: Delayed gelling (liquid)	AGM	-	-	-	Halliburton
Gel	Bentonite - Naturally occuring colloidial clay	ED	FWS	-	-	Halliburton
Gel Seal	Reactive washes, polymer solutions - Sodium silicate solutions, complexed sodium silicate solutions, polymer solution	LCA	SCW	-	-	Fracmaster
Gilsonite	Gilsonite	LCA	-	-	-	American Fracmaster
Gilsonite	Gilsonite	LCA	-	-	-	BJ Services
Gilsonite	Gilsonite	LCA	-	-	-	Fracmaster
Gilsonite	Gilsonite	LCA	-	-	-	Halliburton
Gilsonite	Gilsonite	LCA	-	-	-	NOWSCO CANADA
Glass Spheres	Glass microspheres - Scotchlite or similar	ED	-	-	-	Fracmaster
Granulite TR 1/4	Polyester, ground thermoplastic or rubber, etc.	LCA	-	-	-	Fracmaster
Gyp-Cem	**Form of calcium sulfate hemihydrate or gypsum**. Reduces thickening time of cement. Often used to create thixtrophic cement slurries. May also improve bonding.	AS	BIE	AGM	-	NOWSCO CANADA
Gypsum	**Form of calcium sulfate hemihydrate or gypsum**. Reduces thickening time of cement. Often used to create thixtrophic cement slurries.	AS	BIE	AGM	-	American Fracmaster
Gypsum	**Form of calcium sulfate hemihydrate or gypsum**. Reduces thickening time of cement. Often used to create thixtrophic cement slurries.	AS	BIE	AGM	-	BJ Services
Gypsum	**Form of calcium sulfate hemihydrate or gypsum**. Reduces thickening time of cement. Often used to create thixtrophic cement slurries.	AS	BIE	AGM	-	San Antonio
Gypsum Cement	Thixotropic cement slurries: Aqueous	LCA	-	-	-	BJ Services
H	Portland Cement, API Class G or H	BC	-	-	-	American Fracmaster
H	Portland Cement, API Class G or H	BC	-	-	-	BJ Services
H	Portland Cement, API Class G or H	BC	-	-	-	Dowell
H	Portland Cement, API Class G or H	BC	-	-	-	Fracmaster
H	Portland Cement, API Class G or H	BC	-	-	-	NOWSCO CANADA
H	Portland Cement, API Class G or H	BC	-	-	-	San Antonio
Halad-100A	General application for over 300°F, - Effective in the presence of salt over 18% by weight in the mix water (powder)	FCA	-	-	-	Halliburton
Halad-10L	Materials for 80°F to 200°F, general application - in up to 10% by weight water in the mix (liquid)	FCA	-	-	-	Halliburton
Halad-14	General application for up to about 300°F, - Effective in the presence of salt up to about 18% by weight in the mix water (powder)	FCA	-	-	-	Halliburton
Halad-14LXP	General application for up to about 300°F, - Effective in the presence of salt up to about 18% by weight in the mix water (liquid)	FCA	-	-	-	Halliburton
Halad-22A	General application for up to about 250°F - Effective in the presence of salt up to about 18% by weight in the mix water (powder)	FCA	-	-	-	American Fracmaster
Halad-22AL	General application for up to about 250°F - Effective in the presence of salt up to about 18% by weight in the mix water (liquid)	FCA	-	-	-	Halliburton
Halad-22ALXP	General application for up to about 250°F - Effective in the presence of salt up to about 18% by weight in the mix water (liquid)	FCA	-	-	-	San Antonio
Halad-322	Marerials for where little or no retarding effect is desired	FCA	-	-	-	Halliburton
Halad-322L	Marerials for where little or no retarding effect is desired	FCA	-	-	-	Halliburton
Halad-322LXP	Marerials for where little or no retarding effect is desired	FCA	-	-	-	Halliburton
Halad-344	General application - Effective in the presence of salt up to about 18% by weight in the mix water and where little or no retarding effect is desired (powder)	FCA	-	-	-	BJ Services
Halad-344	General application - Effective in the presence of salt up to about 18% by weight in the mix water and where little or no retarding effect is desired (powder)	FCA	-	-	-	Halliburton
Halad-344LXP	Marerials for 60°F to 120°F where little or no retarding effect is desired in up to 18% salt in the mix water (liquid)	FCA	-	-	-	Halliburton
Halad-361A	General application - Effective in the presence of salt up to about 18% by weight in the mix water and where little or no retarding effect is desired (powder)	FCA	-	-	-	Halliburton

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Halad-413	Marerials for 60°F to 120°F where little or no retarding effect is desired in up to 18% salt in the mix water (powder)	FCA	-	-	-	Halliburton
Halad-413	Materials for general application (powder)	FCA	-	-	-	Halliburton
Halad-413L	Materials for general application (liquid)	FCA	-	-	-	Halliburton
Halad-447	Latex: Acrylic or equivalent for improves cement bonding to surfaces (Non-expanding additives) and for matrix restriction/blocking (powder)	BIE	AGM	FCA	-	Halliburton
Halad-600LE+	Marerials for 60°F to 120°F where little or no retarding effect is desired in up to 18% salt in the mix water (liquid)	FCA	-	-	-	Halliburton
Halad-9	Materials for general application - (powder)	FCA	-	-	-	Halliburton
Halad-9L	Materials for 80°F to 200°F, general application - in salt up to about 18% by weight in the mix water (liquid)	FCA	-	-	-	Halliburton
Halad-9LXP	Materials for 80°F to 200°F, general application - in salt up to about 18% by weight in the mix water (liquid)	FCA	-	-	-	Halliburton
Halliburton Light Cement	Blends of Portland Cement, Flyash and Gel (Bentonite) - Ratio of flyash: cement at 35:65 with bentonite up to about 6%.	SCB	-	-	-	Halliburton
Halliburton Pozment A	Blends of Portland Cement, Flyash and Gel (Bentonite) - Ratio of flyash: cement fixed at 50:50 with bentonite up to about 4%	SCB	-	-	-	Halliburton
Hematite	Hematite - Iron oxide(s) SG 5.0 - 5.2 nominal	DIW	-	-	-	American Fracmaster
Hematite	Hematite - Iron oxide(s) SG 5.0 - 5.2 nominal	DIW	-	-	-	BJ Services
Hematite	Hematite - Iron oxide(s) SG 5.0 - 5.2 nominal	DIW	-	-	-	Fracmaster
Hematite	Hematite - Iron oxide(s) SG 5.0 - 5.2 nominal	DIW	-	-	-	NOWSCO CANADA
Hi-Dense 3	Hematite - Iron oxide(s) SG 5.0 - 5.2 nominal	DIW	-	-	-	Halliburton
Hi-Dense 4	Hematite - Iron oxide(s) SG 5.0 - 5.2 nominal	DIW	-	-	-	Halliburton
HILITE	Blends containing cement, silica fume and pozzolan microshperes	SCB	-	-	-	Dowell
Hi-Seal	Polyester, ground thermoplastic or rubber, etc.	LCA	-	-	-	BJ Services
HR-12	Modified lignosulfonate blend - High temperature (Over about 225°F) (powder)	R	-	-	-	Halliburton
HR-12L	Modified lignosulfonate blend - High temperature (Over about 225°F) (liquid)	R	-	-	-	Halliburton
HR-13L	Modified lignosulfonate blend - High temperature (Over about 225°F) (liquid)	R	-	-	-	Halliburton
HR-15	Modified lignosulfonate blend - High temperature (Over about 225°F) (powder)	R	-	-	-	Halliburton
HR-20	Blend of lignosulfonate or modified lignosulfonate with borax or borate salt - High temperature (Over about 300°F) (powder)	R	-	-	-	Halliburton
HR-25	Synthetic retarder - Non-borax/borate salt - Retarder aid for lignosulfonates	R	-	-	-	Halliburton
HR-25L	Synthetic retarder (Effective up to about 425°F) (liquid)	R	-	-	-	Halliburton
HR-4	Lignosulfonate, modified lingosulfonate	R	-	-	-	Halliburton
HR-4L	Lignosulfonate, modified lingosulfonate - (liquid)	R	-	-	-	Halliburton
HR-5	Lignosulfonate, modified lingosulfonate blend - For mid-range or moderate temperature (125°F to 225°F), (powder)	R	-	-	-	Halliburton
HR-6L	Lignosulfonate, modified lingosulfonate blend - For mid-range or moderate temperature (125°F to 225°F), (liquid)	R	-	-	-	Halliburton
HR-7	Lignosulfonate, modified lingosulfonate - For low temperature (up to 180°F) (powder)	R	-	-	-	Halliburton
HR-7L	Lignosulfonate, modified lingosulfonate - For low temperature (up to 180°F) (liquid)	R	-	-	-	Halliburton
HTLD	Blends of cement, flyash, lime and silica for high temperature applications	SCB	-	-	-	Halliburton
Ilmenite	Ilmenite - Iron titanium oxide(s) SG 4.4 - 4.5 nominal	DIW	-	-	-	American Fracmaster
Ilmenite	Ilmenite - Iron titanium oxide(s) SG 4.4 - 4.5 nominal	DIW	-	-	-	BJ Services
Ilmenite	Ilmenite - Iron titanium oxide(s) SG 4.4 - 4.5 nominal	DIW	-	-	-	Fracmaster
Ilmenite	Ilmenite - Iron titanium oxide(s) SG 4.4 - 4.5 nominal	DIW	-	-	-	NOWSCO CANADA
Inhibited Gas-Chek	Gas generating agents: aluminum powder or similar (liquid)	BIE	AGM	-	-	Halliburton
KCl	**Form of potassium chloride.**	AS	-	-	-	American Fracmaster
KCl	**Form of potassium chloride.**	AS	-	-	-	Fracmaster
KCl	**Form of potassium chloride.**	AS	-	-	-	Halliburton
KCl	**Form of potassium chloride.**	AS	-	-	-	NOWSCO CANADA
KCl	**Form of potassium chloride.**	AS	-	-	-	San Antonio
Kol Seal	Ground coal	LCA	-	-	-	BJ Services
Kollite	Ground coal	LCA	-	-	-	Halliburton
Kwik Seal	-	LCA	-	-	-	Halliburton
L-10	Sand - Crystalline silica approximately 100 mesh SG 2.65 nominal	SHT	DIW	-	-	NOWSCO CANADA
LA-2	Latex: Acrylic or equivalent for improves cement bonding to surfaces (Non-expanding additives) and matrix flow restriction/blocking (liquid)	BIE	FCA	AGM	-	Halliburton
LAC-1	Latex:Styrene/butadiene copolymer or similar	AGM	BIE	FCA	-	American Fracmaster
LAC-1P	Latex: Acrylic or equivalent for improves cement bonding to surfaces (Non-expanding additives) (powder)	BIE	-	-	-	American Fracmaster
LAP-1	Latex: Acrylic or equivalent for improves cement bonding to surfaces (Non-expanding additives) and matrix flow restriction/blocking (powder)	BIE	FCA	AGM	-	Halliburton
Latex 2000	Latex:Styrene/butadiene copolymer or similar	AGM	BIE	FCA	-	Halliburton
Latex Cement	Cements to improve bonding containing polymeric additives such as latex (styrene butadiene or acrylic), polyvinyl alcohol, etc.	SCB	-	-	-	NOWSCO CANADA
Latex-1	Latex:Styrene/butadiene copolymer or similar	AGM	BIE	FCA	-	Fracmaster
LCM-2	Fibers: Nylon, Polypropylene, cellulose, etc.	LCA	-	-	-	Fracmaster
LD-18	Marerials for where little or no retarding effect is desired 1	FCA	-	-	-	NOWSCO CANADA
LD-24	General application (liquid)	FCA	-	-	-	NOWSCO CANADA
LD-28	General application for over 300°F, - Effective in the presence of salt up to about 18% by weight in the mix water (liquid)	FCA	-	-	-	NOWSCO CANADA

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
LD-30	General application for up to about 250°F - Recommended for fresh water slurries only (liquid)	FCA	-	-	-	NOWSCO CANADA
LD-30	General application for up to about 250°F - Recommended for fresh water slurries only (liquid)	FCA	-	-	-	San Antonio
Lightweight	Commercial lightweight cements	BC	-	-	-	San Antonio
Liquid Econolite	Sodium Silicate (liquid)	ED	AS	FWS	-	Halliburton
Liquid Silcalite	Fumed silica - Matrix flow restriction/blocking and other uses (liquid)	AGM	ED	FWS	BIE	Halliburton
Liquid Sodium Silicate	Sodium Silicate (liquid)	ED	FWS	AS	-	American Fracmaster
Liquid Stone	Storable liquid cement slurry. Water-based liquid cement slurry	BC	SCB	-	-	BJ Services
Lite Set	Blends containing lightweight glass beads	SCB	-	-	-	BJ Services
LiteCRETE	Proprietary blend - Low density cement blend with superior compressive strength (10.5 to 12.5 lb/gal)	SCB	-	-	-	Dowell
LITEFIL	Blends containing lightweight pozzolan microspheres	SCB	-	-	-	Dowell
LITEMASTER	Blends containing lightweight pozzolan microspheres	SCB	-	-	-	Fracmaster
LITEMASTER2	Blends containing lightweight pozzolan microspheres	SCB	-	-	-	Fracmaster
LS-1	Supplemental agents for gas migration control - Stabilizer for Latex in the presence of salt or at high temperature	AGM	FCA	-	-	BJ Services
LS-2	Supplemental agents for gas migration control - Stabilizer for Latex in the presence of salt or at high temperature	AGM	FCA	-	-	BJ Services
LTX	Materials for general application (powder)	FCA	-	-	-	San Antonio
LTXL	Materials for general application - (liquid)	FCA	-	-	-	San Antonio
Lumite	High aluminate cement (Calcium aluminate cement)	BC	-	-	-	BJ Services
Lumite	High aluminate cement (Calcium aluminate cement)	BC	-	-	-	Dowell
LW-6	Pozzalon microspheres - Spherulitic, expanded pozzalonic material often produced with flyash from the burning of coal	ED	-	-	-	BJ Services
LW-6/MPA-1	Proprietary blend - High density cement blend with superior mixing and rheological properties (17.5 to 24 lb/gal)	SCB	-	-	-	BJ Services
LW-7-2	Glass microspheres - Scotchlite or similar	ED	-	-	-	American Fracmaster
LW-7-2	Glass microspheres - Scotchlite or similar	ED	-	-	-	BJ Services
LW-7-2	Glass microspheres - Scotchlite or similar	ED	-	-	-	Dowell
LW-7-4	Glass microspheres - Scotchlite or similar	ED	-	-	-	BJ Services
LW-8L	Fumed Silica (dry) - High surface area, amorphous silica (liquid suspension)	ED	-	-	-	BJ Services
M117	**Form of potassium chloride.**	AS	-	-	-	Dowell
M45	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	Dowell
Magne Cement	Acid soluble cement. Non-Portland inorganic cement completely soluble in acid	BC	-	-	-	San Antonio
Magne Plus	Acid soluble cement. Non-Portland inorganic cement completely soluble in acid	BC	SCB	-	-	BJ Services
Masterflush	Reactive washes, polymer solutions - Sodium silicate solutions, complexed sodium silicate solutions, polymer solution	LCA	-	-	-	Fracmaster
Masterflush 0	Chemical Washes (Not weighted with solid weighting agents) - Non-aqueous - blend of surfactants, solvents, etc. in hydrocarbon carrier fluid.	SCW	-	-	-	Fracmaster
Masterflush W	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - containing surfactants and solvents. No fluid loss control.	SCW	-	-	-	Fracmaster
Mastersweep	Reactive washes, polymer solutions - Sodium silicate solutions, complexed sodium silicate solutions, polymer solution	LCA	-	-	-	Fracmaster
Mastersweep O	Spacers -- Recommended for use in wells drilled with oil base drilling fluids	SCW	-	-	-	Fracmaster
Mastersweep W	Spacers -- Aqueous, weighted - formulated for laminar flow under most cementing conditions	SCW	-	-	-	Fracmaster
Matrix Cement	Microfine Portland cement and microfine blast furnace slag blend, MC-500 or equivalent	BC	-	-	-	Halliburton
MC-300	Microfine Portland cement, MC-300 or equivalent	BC	-	-	-	American Fracmaster
MC-300	Microfine Portland cement, MC-300 or equivalent	BC	-	-	-	BJ Services
MC-500	Microfine Portland cement and microfine blast furnace slag blend, MC-500 or equivalent	BC	-	-	-	American Fracmaster
MC-500	Microfine Portland cement and microfine blast furnace slag blend, MC-500 or equivalent	BC	-	-	-	BJ Services
MCS-2	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates	SCW	-	-	-	BJ Services
MCS-3	Spacers -- Recommended for use in wells drilled with oil base drilling fluids	SCW	-	-	-	BJ Services
MCS-4	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates and recommended for use in wells drilled with oil base drilling fluids	SCW	-	-	-	BJ Services
MCS-5	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates	SCW	-	-	-	BJ Services
Mica	Mica	LCA	-	-	-	American Fracmaster
Mica	Mica	LCA	-	-	-	BJ Services
Mica	Mica	LCA	-	-	-	Fracmaster
Mica	Mica	LCA	-	-	-	Halliburton
Mica	Mica	LCA	-	-	-	NOWSCO CANADA
Microbloc	Bentonite, Attapulgite, Fumed Silica, etc. ((liquid)	FWS	-	-	-	BJ Services
Microblock	Fumed Silica (dry) - High surface area, amorphous silica (liquid suspension)	ED	FWS	BIE	AGM	Halliburton
Microbond	Metal oxide - expanding agents that may also improve bonding	BIE	-	-	-	Halliburton
Microbond HT	Metal oxide - expanding agents that may also improve bonding	BIE	-	-	-	Halliburton
Microbond M	Metal oxide - expanding agents that may also improve bonding	BIE	-	-	-	Halliburton

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Microcem 1000	Microfine Portland cement and microfine blast furnace slag blend, MC-500 or equivalent	BC	-	-	-	NOWSCO CANADA
Microfine Cement	Microfine Portland cement, MC-300 or equivalent	BC	-	-	-	Dowell
Microflyash	Microfine flyash - For use with microfine cements	ED	-	-	-	Halliburton
Micromatrix Cement	Microfine Portland cement, MC-300 or equivalent	BC	-	-	-	Halliburton
Micromax	Manganese Oxides - SG 4.6 - 4.9 nominal.	DIW	-	-	-	Halliburton
Microsand	Crystalline Silica (Microfine) SG 2.65 nominal for use with microfine cements	DIW	SHT	-	-	Halliburton
Microsil 10P	Fumed silica for improving cement bonding to surfaces (Non-expanding additives) (powder)	BIE	AGM	FWS	ED	NOWSCO CANADA
Microsil 15L	Fumed silica for improving cement bonding to surfaces (Non-expanding additives) and matrix flow restriction/blocking (liquid)	BIE	FWS	AGM	ED	NOWSCO CANADA
Microsil 22P	Fumed silica for improving cement bonding to surfaces (Non-expanding additives) and matrix flow restriction/blocking powder)	BIE	FWS	AGM	ED	NOWSCO CANADA
Microsilica	Fumed Silica (dry) - High surface area, amorphous silica (powder)	ED	FWS	-	-	San Antonio
MMCR	Retarder for microfine cements (liquid)	R	-	-	-	Halliburton
MOC-1	Non-aqueous cement slurries - Made with microfine cements	LCA	-	-	-	Halliburton
MPA-1	Other proprietary materials (powder)	BIE	-	-	-	BJ Services
MPA-2	Other proprietary materials (powder)	BIE	-	-	-	BJ Services
MRS-2	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - containing surfactants and solvents. No fluid loss control.	SCW	-	-	-	BJ Services
Mud Clean	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - containing surfactants and solvents. No fluid loss control.	SCW	-	-	-	BJ Services
Mud Flush	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - containing surfactants and solvents. No fluid loss control.	SCW	-	-	-	Halliburton
Mud Save F	Polyester, ground thermoplastic or rubber, etc.	LCA	-	-	-	BJ Services
Mud Save M	Polyester, ground thermoplastic or rubber, etc.	LCA	-	-	-	BJ Services
Mud Sweep	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - Containing surfactants and solvents. Contains agents to reduce fluid loss to formations and/or to viscosify solution.	SCW	-	-	-	BJ Services
MUDPUSH WHT	Spacers -- Aqueous, weighted - unspecified flow regime	SCW	-	-	-	Dowell
MUDPUSH XEO	Spacers -- Emulsion, weighted - Water continuous (external) phase	SCW	-	-	-	Dowell
MUDPUSH XL	Spacers -- Aqueous, weighted - formulated for laminar flow under most cementing conditions	SCW	-	-	-	Dowell
MUDPUSH XLO	Spacers -- Aqueous, weighted - formulated for laminar flow under most cementing conditions and also recommended for use in wells	SCW	-	-	-	Dowell
MUDPUSH XS	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates	SCW	-	-	-	Dowell
MUDPUSH XSO	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates	SCW	-	-	-	Dowell
MUDPUSH XT	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates	SCW	-	-	-	Dowell
MUDPUSH XTO	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates and also Recommended for use in wells drilled with oil	SCW	-	-	-	Dowell
My-T-Lite 1200	Blends containing cement, silica fume and pozzolan microshperes	SCB	-	-	-	Halliburton
NF-1	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	Halliburton
NF-3	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	Halliburton
NF-4	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	Halliburton
NF-6	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	Halliburton
NF-7	High molecular weight alcohols, polyalcohols, silicones, etc. used to prevent or decrease foaming during mixing. (liquids)	ADA	-	-	-	Halliburton
NFL-2	Materials for fluid loss control in highly extended or low density slurries (powder)	FCA	-	-	-	NOWSCO CANADA
NFL-3	Materials for 80°F to 200°F, general application - Recommend for fresh water slurries only (powder)	FCA	-	-	-	NOWSCO CANADA
NH4Cl	Ammonium chloride	AS	-	-	-	American Fracmaster
NH4Cl	Ammonium chloride	AS	-	-	-	BJ Services
NH4Cl	Ammonium chloride	AS	-	-	-	Dowell
NH4Cl	Ammonium chloride	AS	-	-	-	Fracmaster
NH4Cl	Ammonium chloride	AS	-	-	-	Halliburton
NH4Cl	Ammonium chloride	AS	-	-	-	NOWSCO CANADA
NH4Cl	Ammonium chloride	AS	-	-	-	San Antonio
NL-2	Latex: Acrylic or equivalent for improves cement bonding to surfaces (Non-expanding additives) (liquid)	BIE	-	-	-	NOWSCO CANADA
NL-2	Latex: Acrylic or equivalent for improves cement bonding to surfaces (Non-expanding additives) (liquid)	BIE	-	-	-	San Antonio
NLC-1	Ground coal	LCA	-	-	-	NOWSCO CANADA
Normal Portland	Portland Cement API Class A or B, ASTM Type I, or II	BC	-	-	-	Fracmaster
Nowflush 6	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - containing surfactants and solvents. No fluid loss control.	SCW	-	-	-	NOWSCO CANADA
Nowflush 7	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - containing surfactants and solvents. No fluid loss control.	SCW	-	-	-	NOWSCO CANADA
Nowlite	Fumed silica/flyash blend for improving cement bonding to surfaces (Non-expanding additives)	BIE	-	-	-	American Fracmaster

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Nowlite	Fumed silica/flyash blend for improving cement bonding to surfaces (Non-expanding additives)	BIE	-	-	-	NOWSCO CANADA
Nowlite	Fumed silica/flyash blend for improving cement bonding to surfaces (Non-expanding additives)	BIE	-	-	-	San Antonio
Nowlite 1	Blends of Portland Cement, Flyash and Gel (Bentonite) - Ratio of flyash: cement at 35:65 with bentonite up to about 6%.	SCB	-	-	-	NOWSCO CANADA
Nowlite 1200	Blends containing cement, silica fume and pozzolan microshperes	SCB	-	-	-	NOWSCO CANADA
Nowlite 2	Blends of Portland Cement, Flyash and Gel (Bentonite) - Ratio of flyash: cement fixed at 15:85 with bentonite up to about 8%	SCB	-	-	-	NOWSCO CANADA
Nowlite 3	Blends of Portland Cement, Flyash and Gel (Bentonite) - Ratio of flyash: cement fixed at 50:50 with bentonite up to about 4%	SCB	-	-	-	NOWSCO CANADA
NowPoz	Type F flyash - Pozzolanic material that is a by-product of burning coal. Lower in lime content than Type C flyash.	ED	-	-	-	NOWSCO CANADA
NowPoz	Type C flyash - Pozzolanic material that is a by-product of burning coal.	ED	-	-	-	NOWSCO CANADA
Nowspheres 2000	Glass microspheres - Scotchlite or similar	ED	-	-	-	NOWSCO CANADA
Nowspheres 7000	Pozzalon microspheres - Spherulitic, expanded pozzalonic material often produced with flyash from the burning of coal	ED	-	-	-	NOWSCO CANADA
Nowsweep W	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates	SCW	-	-	-	NOWSCO CANADA
Nut Plug	Walnut plugs or similar	LCA	-	-	-	BJ Services
N-Ver-Sperse 0	Chemical Washes (Not weighted with solid weighting agents) - Non-aqueous - blend of surfactants, solvents, etc. in hydrocarbon carrier fluid.	SCW	-	-	-	Halliburton
OB-1	Spacers -- Emulsion, weighted - Oil continuous (external) phase	SCW	-	-	-	BJ Services
OMR-2	Spacers -- Fluids containing blast furnace lag for use with Slag-Mix and slag cements	SCW	-	-	-	BJ Services
Perfect Sael	Proprietary - Acid soluble, expanding bridging agent	LCA	-	-	-	Halliburton
Perlite	Perlite/Expanded perlite - Volcanic glass, spherelitic and hollow	ED	-	-	-	American Fracmaster
Perlite	Perlite/Expanded perlite - Volcanic glass, spherelitic and hollow	ED	-	-	-	BJ Services
Perlite	Perlite/Expanded perlite - Volcanic glass, spherelitic and hollow	ED	-	-	-	Fracmaster
Perlite	Perlite/Expanded perlite - Volcanic glass, spherelitic and hollow	ED	-	-	-	Halliburton
Perlite	Perlite/Expanded perlite - Volcanic glass, spherelitic and hollow	ED	-	-	-	San Antonio
Permablock	Reactive washes, polymer solutions - Sodium silicate solutions, complexed sodium silicate solutions, polymer solution	LCA	-	-	-	Dowell
PERMAFROST Cement	Permafrost cement	SCB	-	-	-	Halliburton
PLUGMASTER	Thixotropic cement slurries: Aqueous	LCA	-	-	-	Fracmaster
Polarset Cement	Permafrost cement	SCB	-	-	-	NOWSCO CANADA
Polymer Plug	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	Dowell
Portland Blend	Proprietary blend - High density cement blend with superior mixing and rheological properties (17.5 to 24 lb/gal)	SCB	-	-	-	BJ Services
Potassium Chloride	**Form of potassium chloride.**	AS	-	-	-	BJ Services
Pozmix A	Type F flyash - Pozzolanic material that is a by-product of burning coal. Lower in lime content than Type C flyash.	ED	-	-	-	Halliburton
Pozzalon	Natural Pozzalon - A siliceous and aluminous material produced from natural processes such as volcanic activity.	ED	-	-	-	BJ Services
Pozzalon	Natural Pozzalon - A siliceous and aluminous material produced from natural processes such as volcanic activity.	ED	-	-	-	San Antonio
Pozzalon	Type F flyash - Pozzolanic material that is a by-product of burning coal. Lower in lime content than Type C flyash.	ED	-	-	-	American Fracmaster
Pozzalon	Type F flyash - Pozzolanic material that is a by-product of burning coal. Lower in lime content than Type C flyash.	ED	-	-	-	Fracmaster
Pozzalon	Type F flyash - Pozzolanic material that is a by-product of burning coal. Lower in lime content than Type C flyash.	ED	-	-	-	San Antonio
Premium	Portland Cement, API Class G or H	BC	-	-	-	Halliburton
Premium Plus	Portland Cement, API Class C, ASTM Type III	BC	-	-	-	Halliburton
Quik Gyp	**Form of calcium sulfate hemihydrate or gypsum**. Reduces thickening time of cement. Often used to create thixtrophic cement slurries.	AS	BIE	-	-	NOWSCO CANADA
R-10L	Lignosulfonate, modified lingosulfonate blend - For mid-range or moderate temperature (125°F to 225°F), (liquid)	R	-	-	-	BJ Services
R-11	Lignosulfonate, modified lingosulfonate blend - For mid-range or moderate temperature (125°F to 225°F), (powder)	R	-	-	-	BJ Services
R-12	Lignosulfonate, modified lingosulfonate blend - For mid-range or moderate temperature (125°F to 225°F), (liquid)	R	-	-	-	BJ Services
R-14L	Proprietary, synthesized polymer or copolymer. Non-lingosulfonate. - (Effective up to about 250°F) (liquid)	R	-	-	-	BJ Services
R-15	Citric acid or citrate salt or similar. Non-lignosulfonate. Permafrost	R	-	-	-	NOWSCO CANADA
R-15LS	Proprietary, synthesized polymer or copolymer. Non-lingosulfonate. -	R	-	-	-	BJ Services
R-18	Thixotropic cement retarder - For slurries containing calcium sulfate	R	-	-	-	BJ Services
R-20L	Proprietary, synthesized polymer or copolymer. Non-lingosulfonate. - (Effective up to about 250°F) (liquid)	R	-	-	-	BJ Services
R-21L	Lignosulfonate, modified lingosulfonate blend	R	-	-	-	BJ Services
R-3	Lignosulfonate, modified lingosulfonate	R	-	-	-	BJ Services
R-35	Borax/borate salt - Retarder aid for lignosulfonates	R	-	-	-	NOWSCO CANADA
R-40L	Lignosulfonate, modified lingosulfonate blend - For mid-range or moderate temperature (125°F to 225°F), (liquid)	R	-	-	-	NOWSCO CANADA
R-55	Modified lignosulfonate blend - High temperature (Over about 225°F) (powder)	R	-	-	-	NOWSCO CANADA
R-55L	Modified lignosulfonate blend - High temperature (Over about 225°F) (liquid)	R	-	-	-	NOWSCO CANADA

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
R-57	Blend of lignosulfonate or modified lignosulfonate with borax or borate salt - High temperature (Over about 300°F) (powder)	R	-	-	-	NOWSCO CANADA
R-6	Lignosulfonate, modified lingosulfonate - For low temperature (up to 180°F) (powder)	R	-	-	-	NOWSCO CANADA
R-6L	Lignosulfonate, modified lingosulfonate - For low temperature (up to 180°F) (liquid)	R	-	-	-	NOWSCO CANADA
R-7	Citric acid or citrate salt or similar. Non-lignosulfonate. Permafrost cement retarder (powder)	R	-	-	-	BJ Services
R-7	Lignosulfonate - Permafrost cement retarder (powder)	R	-	-	-	NOWSCO CANADA
R-8	Modified lignosulfonate blend - High temperature (Over about 225°F) (powder)	R	-	-	-	BJ Services
R-8L	Modified lignosulfonate blend - High temperature (Over about 225°F) (liquid)	R	-	-	-	BJ Services
R-9	Borax/borate salt - Retarder aid for lignosulfonates	R	-	-	-	BJ Services
Rapid Gel SPC	Thixotropic cement slurries: Aqueous	LCA	SCB	-	-	NOWSCO CANADA
Rapid Set	Thixotropic cement slurries: Aqueous	LCA	-	-	-	NOWSCO CANADA
RAS	Deepwater cements: Blends for use in cold temperature environments of deep water drilling where shallow water flow zones are a problem	SCB	-	-	-	Dowell
RFC	Thixotropic cements containing calcium sulfate hemihydrate or gypsum	SCB	LCA	-	-	Dowell
RSB	Spacers -- Emulsion, weighted - Oil continuous (external) phase	SCW	-	-	-	BJ Services
S1	**Form of Calcium chloride**. Reduces thickening time of cement. Typically used at 1% to 3% by weight of cement.	AS	-	-	-	Dowell
S-8	Silica flour - Crystalline silica approximately 200 mesh or finer SG 2.65 nominal	SHT	DIW	-	-	BJ Services
S-8C	Sand - Crystalline silica approximately 100 mesh SG 2.65 nominal	SHT	DIW	-	-	BJ Services
SA-541	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	-	-	-	Halliburton
SAF Mark III	Reactive washes, polymer solutions - Sodium silicate solutions, complexed sodium silicate solutions, polymer solution	LCA	-	-	-	BJ Services
Salt	**Form of sodium chloride**. Reduces thickening time of cement at concentrations between about 1% and 19% by weight in the mix water.	AS	-	-	-	American Fracmaster
Salt	**Form of sodium chloride**. Reduces thickening time of cement at concentrations between about 1% and 19% by weight in the mix water.	AS	-	-	-	BJ Services
Salt	**Form of sodium chloride**. Reduces thickening time of cement at concentrations between about 1% and 19% by weight in the mix water.	AS	-	-	-	Fracmaster
Salt	**Form of sodium chloride**. Reduces thickening time of cement at concentrations between about 1% and 19% by weight in the mix water.	AS	-	-	-	Halliburton
Salt	**Form of sodium chloride**. Reduces thickening time of cement at concentrations between about 1% and 19% by weight in the mix water.	AS	-	-	-	NOWSCO CANADA
Salt	**Form of sodium chloride**. Reduces thickening time of cement at concentrations between about 1% and 19% by weight in the mix water.	AS	-	-	-	San Antonio
Salt Gel	Attapulgite - Naturally occuring colloidial clay	ED	FWS	-	-	American Fracmaster
Salt Gel	Attapulgite - Naturally occuring colloidial clay	ED	FWS	-	-	Fracmaster
Salt Gel	Attapulgite - Naturally occuring colloidial clay	ED	FWS	-	-	NOWSCO CANADA
Salt Saturated Cement	Cements to improve bonding to salt formations: Salt containing or salt saturated cements	SCB	-	-	-	NOWSCO CANADA
SALTBOND Cement	Cements to improve bonding to salt formations: Proprietary additives to improve bonding to salt formations	SCB	-	-	-	Dowell
SAM-4	Spacers -- Emulsion, weighted - Oil continuous (external) phase	SCW	-	-	-	Halliburton
Sand	Sand - Graded and sized to meet needs	LCA	DIW	-	-	American Fracmaster
Sand	Sand - Graded and sized to meet needs	LCA	DIW	-	-	BJ Services
Sand	Sand - Graded and sized to meet needs	LCA	DIW	-	-	Dowell
Sand	Sand - Graded and sized to meet needs	LCA	DIW	-	-	Fracmaster
Sand	Sand - Graded and sized to meet needs	LCA	DIW	-	-	Halliburton
Sand	Sand - Graded and sized to meet needs	LCA	DIW	-	-	NOWSCO CANADA
Sarf-100	Marerials for 60°F to 120°F where little or no retarding effect is desired	FCA	-	-	-	San Antonio
Sarf-2	General application for up to about 250°F - Recommended for fresh water slurries only (powder)	FCA	-	-	-	San Antonio
Sarf-3	General application for 80°F to 200°F in the presence of salt over 18% by weight in the mix water (powder)	FCA	-	-	-	San Antonio
SCR-100	Proprietary, synthesized polymer or copolymer. Non-lingosulfonate. - (Effective up to about 250°F) (powder)	R	-	-	-	Halliburton
SCR-100L	Proprietary, synthesized polymer or copolymer. Non-lingosulfonate. (liquid)	R	-	-	-	Halliburton
SD Spacer	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates	SCW	-	-	-	Halliburton
SE IL	Polymers, sodium silicates, biopolymers, proprietary chemicals (liquids)	FWS	-	-	-	San Antonio
SE-15	Sodium silicate (solid)	ED	-	-	-	San Antonio
SE-18	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	-	-	-	San Antonio
SE-1L	**Form of sodium silicate**. Reduces thickening time of cement. Increases slurry viscosity.	-	-	-	-	San Antonio
Self Stress Cement	Expanding cements containing calcium sulfate hemihydrate or similar	SCB	-	-	-	Dowell
Sepiolite	Attapulgite - Naturally occuring colloidial clay	ED	-	-	-	NOWSCO CANADA
SF-100	Sand - Crystalline silica approximately 100 mesh SG 2.65 nominal	SHT	-	-	-	San Antonio
SFA-100	Sand - Crystalline silica approximately 100 mesh SG 2.65 nominal	SHT	DIW	-	-	Fracmaster

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
SFA-200	Silica flour - Crystalline silica approximately 200 mesh or finer SG 2.65 nominal	SHT	DIW	-	-	Fracmaster
SFA-200	Silica flour - Crystalline silica approximately 200 mesh or finer SG 2.65 nominal	SHT	DIW	-	-	NOWSCO CANADA
SFA-200	Silica flour - Crystalline silica approximately 200 mesh or finer SG 2.65 nominal	SHT	DIW	-	-	San Antonio
SFA-225	Silica flour - Crystalline silica approximately 200 mesh or finer SG 2.65 nominal	SHT	DIW	-	-	NOWSCO CANADA
SFA-225	Silica flour - Crystalline silica approximately 200 mesh or finer SG 2.65 nominal	SHT	DIW	-	-	San Antonio
SFA-325	Silica flour - Crystalline silica approximately 200 mesh or finer SG 2.65 nominal	SHT	DIW	-	-	NOWSCO CANADA
Silicalite	Fumed Silica (dry) - High surface area, amorphous silica (powder)	ED	FWS	BIE	AGM	Halliburton
Silicalite blend	Fumed silica/flyash blend for improving cement bonding to surfaces (Non-expanding additives)	BIE	-	-	-	Halliburton
Siljel V	Reactive washes, polymer solutions - Sodium silicate solutions, complexed sodium silicate solutions, polymer solution	LCA	-	-	-	BJ Services
Slag Cement	Blast furnace slag (BFS). Ground, granulated or pelletized blast furnace slag.	BC	-	-	-	Halliburton
Slag-10	Blast furnace slag (BFS). Ground, granulated or pelletized blast furnace slag.	BC	-	-	-	NOWSCO CANADA
Slag-20	Blast furnace slag (BFS). Ground, granulated or pelletized blast furnace slag.	BC	-	-	-	NOWSCO CANADA
Slag-25	Blast furnace slag (BFS). Ground, granulated or pelletized blast furnace slag.	BC	-	-	-	NOWSCO CANADA
Slag-30	Blast furnace slag (BFS). Ground, granulated or pelletized blast furnace slag.	BC	-	-	-	NOWSCO CANADA
Slagment	Blend of Portland cement and blast furnace slag. Blend to improve poor quality Portland cements and improve additive response in some areas	BC	-	-	-	BJ Services
Sodium Chloride	**Form of sodium chloride**. Reduces thickening time of cement at concentrations between about 1% and 19% by weight in the mix water.	AS	-	-	-	BJ Services
Sodium citrate	Citric acid or citrate salt or similar. Non-lignosulfonate. Permafrost cement retarder (powder)	R	-	-	-	Halliburton
Sodium Metasilicate	**Form of sodium silicate**. Reduces thickening time of cement. Increases slurry viscosity.	AS	ED	-	-	American Fracmaster
Sodium Metasilicate	**Form of sodium silicate**. Reduces thickening time of cement. Increases slurry viscosity.	AS	ED	-	-	BJ Services
Sodium Metasilicate	**Form of sodium silicate**. Reduces thickening time of cement. Increases slurry viscosity.	AS	ED	-	-	San Antonio
Sodium metasislicate	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	-	-	-	American Fracmaster
Sodium metasislicate	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	-	-	-	BJ Services
Sodium metasislicate	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	-	-	-	San Antonio
Sodium Silicate	Polymers, sodium silicates, biopolymers, proprietary chemicals (liquids)	FWS	-	-	-	BJ Services
Sodium Silicate Liquid	Sodium Silicate (liquid)	ED	-	-	-	BJ Services
SOS	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	Dowell
Spacer 500	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates	SCW	-	-	-	Halliburton
SPC-12000	Gas generating agents: aluminum powder or similar (powder)	BIE	AGM	-	-	NOWSCO CANADA
Spherelite	Pozzalon microspheres - Spherulitic, expanded pozzalonic material often produced with flyash from the burning of coal	ED	-	-	-	Halliburton
SphereLite Cement	Blends containing lightweight pozzolan microspheres	SCB	-	-	-	Halliburton
SR-10	Modified lignosulfonate blend - High temperature (Over about 225°F) (powder)	R	-	-	-	San Antonio
SR-12	Diacel LWL (carboxymethyl hydroxyethyl cellulose) - Moderate to high temperature (175°F to 300°F) (powder)	R	-	-	-	San Antonio
SR-2	Lignosulfonate, modified lingosulfonate - For low temperature (up to 180°F) (powder)	R	-	-	-	San Antonio
SR-30	Thixotropic cement retarder - For slurries containing calcium sulfate hemihydrate or gypsum	R	-	-	-	BJ Services
SR-30(1)	Proprietary, synthesized polymer or copolymer. Non-lingosulfonate. - (Effective up to about 250°F) (powder)	R	-	-	-	BJ Services
SR-6	Lignosulfonate, modified lingosulfonate blend - For mid-range or moderate temperature (125°F to 225°F), (powder)	R	-	-	-	San Antonio
SR6-1	Lignosulfonate, modified lingosulfonate blend, (liquid)	R	-	-	-	San Antonio
SSA-1	Silica flour - Crystalline silica approximately 200 mesh or finer SG 2.65 nominal	SHT	DIW	-	-	Halliburton
SSA-2	Sand - Crystalline silica approximately 100 mesh SG 2.65 nominal	SHT	DIW	-	-	Halliburton
Stabilizer 434B	Supplemental agents for gas migration control - Stabilizer for Latex in the presence of salt or at high temperature	AGM	FCA	-	-	Halliburton
Stabilizer 434C	Supplemental agents for gas migration control - Stabilizer for Latex in the presence of salt or at high temperature	AGM	FCA	-	-	Halliburton
Standard	Portland Cement API Class A or B, ASTM Type I, or II	BC	-	-	-	Halliburton
Stop Block	Reactive washes, polymer solutions - Sodium silicate solutions, complexed sodium silicate solutions, polymer solution	LCA	-	-	-	BJ Services
Stratalock	Synthetic resin cements: Epoxy resin cement	SCB	BC	-	-	Halliburton
Super CBL	Gas generating agents: aluminum powder or similar (powder)	BIE	AGM	-	-	Halliburton

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Super Flush	Chemical Washes (Not weighted with solid weighting agents) - Reactive - containing sodium silicate or similar reactive materials	SCW	LCA	-	-	Halliburton
Supersweep	Spacers -- Aqueous, weighted - formulated for laminar flow under	SCW	-	-	-	NOWSCO CANADA
Sure Fill	Thixotropic cements containing calcium sulfate hemihydrate or gypsum	SCB	LCA	-	-	BJ Services
Sure Plug	Thixotropic cement slurries: Aqueous	LCA	-	-	-	BJ Services
Suspens HT	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	-	-	-	Halliburton
Synthetic Cement	Synthetic resin cements: Epoxy resin cement	SCB	BC	-	-	Dowell
T-10	Polynapthalene sulfonate (PNS) (powder)	DIS	-	-	-	NOWSCO CANADA
T-10L	Polynapthalene sulfonate (PNS) (liquid)	DIS	-	-	-	NOWSCO CANADA
T-11	Citric acid, citrate salt or similar for salt saturated slurries	DIS	-	-	-	NOWSCO CANADA
T-40L	Polymers, sodium silicates, biopolymers, proprietary chemicals (liquids)	FWS	AS	ED	-	BJ Services
TELMASTER	Cements to improve bonding containing polymeric additives such as latex (styrene butadiene or acrylic), polyvinyl alcohol, etc.	SCB	AGM	LCA	-	Fracmaster
Thermal Thix-Mix	Other - Gel strength modification: Thixotropic additives/slurries (lpowder)	AGM	LCA	-	-	NOWSCO CANADA
Thermalock	Carbon dioxide (CO_2) resistant cements	SCB	-	-	-	Halliburton
Thix Set 31	Cross-linked or complexed polymeric materials - Gel strength modification: Thixotropic additives/slurries (liquid)	AGM	-	-	-	Halliburton
Thixlite 373	Thixotropic cement slurries: Aqueous	LCA	-	-	-	Halliburton
THIXMASTER	Thixotropic cements containing calcium sulfate hemihydrate or gypsum	SCB	AGM	LCA	-	Fracmaster
Thix-Mix	Thixotropic cements containing calcium sulfate hemihydrate or gypsum	SCB	AGM	LCA	-	NOWSCO CANADA
Thixofil	Thixotropic cement slurries: Aqueous	LCA	-	-	-	BJ Services
Thixofil	Thixotropic cements containing proprietary additives	SCB	-	-	-	BJ Services
Thixofume	Thixotropic cement slurries: Aqueous	LCA	-	-	-	BJ Services
Thix-O-Gel	Other - Gel strength modification: Thixotropic additives/slurries (lpowder)	AGM	LCA	-	-	NOWSCO CANADA
Thixseal	Reactive washes, polymer solutions - Sodium silicate solutions, complexed sodium silicate solutions, polymer solution	LCA	-	-	-	NOWSCO CANADA
Thix-Seal Flush	Chemical Washes (Not weighted with solid weighting agents) - Reactive - containing sodium silicate or similar reactive materials	SCW	-	-	-	NOWSCO CANADA
Thix-Set	Thixotropic cement slurries: Aqueous	LCA	-	-	-	Halliburton
Thix-Set 31	Thixotropic cements containing crosslinked polymer complexes	SCB	AGM	LCA	-	Halliburton
Thriftmaster	Blends of Portland cement with commercial lightweight cements such as TXI Lightweight	SCB	-	-	-	Fracmaster
Thriftmaster LT	Blends of Portland cement with commercial lightweight cements such as TXI Lightweight	SCB	-	-	-	Fracmaster
Thrifty Mix	Sodium silicate (solid)	ED	-	-	-	BJ Services
Thrifty Mix-L	Sodium Silicate (liquid)	ED	-	-	-	BJ Services
Tru-Lite HS	Blends of Portland cement with commercial lightweight cements such as TXI Lightweight	SCB	-	-	-	NOWSCO CANADA
Tru-Lite R	Blends of Portland cement with commercial lightweight cements such as TXI Lightweight	SCB	-	-	-	NOWSCO CANADA
Tuf Additive No. 2	Fibers: Nylon, Polypropylene, cellulose, etc.	LCA	-	-	-	Halliburton
Tuf Plug	Walnut plugs or similar	LCA	-	-	-	Halliburton
Tuned Spacer	Spacers -- Aqueous, weighted - formulated for laminar flow under most cementing conditions	SCW	-	-	-	Halliburton
Turbo Flo 3	Spacers -- Aqueous, weighted - formulated for turbulent flow regime at low pump rates	SCW	-	-	-	BJ Services
Turbo Solvent	Spacers -- Emulsion, weighted - Solvent continuous (external) phase	SCW	-	-	-	BJ Services
TXC-1	Sodium silicate (solid)	ED	AS	FWS	-	Fracmaster
TXI Lightweight	Commercial lightweight cements, TXI Lightweight or equivalent	BC	-	-	-	American Fracmaster
TXI Lightweight	Commercial lightweight cements, TXI Lightweight or equivalent	BC	-	-	-	BJ Services
TXI Lightweight	Commercial lightweight cements, TXI Lightweight or equivalent	BC	-	-	-	Dowell
TXI Lightweight	Commercial lightweight cements, TXI Lightweight or equivalent	BC	-	-	-	Fracmaster
TXI Lightweight	Commercial lightweight cements, TXI Lightweight or equivalent	BC	-	-	-	Halliburton
TXI Lightweight	Commercial lightweight cements, TXI Lightweight or equivalent	BC	-	-	-	NOWSCO CANADA
Type I	Portland Cement ASTM Type I	BC	-	-	-	BJ Services
Type I	Portland Cement ASTM Type I	BC	-	-	-	Dowell
Type I	Portland Cement ASTM Type I	BC	-	-	-	NOWSCO CANADA
Type II	Portland Cement ASTM Type II	BC	-	-	-	BJ Services
Type II	Portland Cement ASTM Type II	BC	-	-	-	Dowell
Type II	Portland Cement ASTM Type II	BC	-	-	-	NOWSCO CANADA
Type III	Portland Cement, API Class C, ASTM Type III	BC	-	-	-	BJ Services
Type III	Portland Cement, API Class C, ASTM Type III	BC	-	-	-	Dowell
Type III	Portland Cement, API Class C, ASTM Type III	BC	-	-	-	NOWSCO CANADA
Ultracel 60	**Form of calcium sulfate hemihydrate or gypsum.** Reduces thickening time of cement. Often used to create thixtrophic cement slurries.	AS	AGM	BIE	-	Fracmaster
Ultraflush II	Chemical Washes (Not weighted with solid weighting agents) - Aqueous - Containing surfactants and solvents. Contains agents to reduce fluid loss to formations and/or to viscosify solution.	SCW	-	-	-	BJ Services
UniflexL	Latex: Acrylic for fluid loss control in highly extended or low density slurries, Stabilizer for Latex in the presence of salt or at high temperature, Stabilizer for Latex in low density slurries (liquid)	FCA	-	-	-	Dowell
UniflexL	Latex: Acrylic for fluid loss control in highly extended or low density slurries, Stabilizer for Latex in the presence of salt or at high temperature, Stabilizer for Latex in low density slurries (liquid)	FCA	-	-	-	Halliburton
UniflexS	Latex: Acrylic for use at 200°F to 250°F. Recommended for fresh water slurries. (powder)	FCA	-	-	-	Dowell
VersaSet	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	FWS	AGM	LCA	SCB	Halliburton

Cementing Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
VersaSet	Polymers, sodium silicates, biopolymers, proprietary chemicals (solids)	ED	-	-	-	Halliburton
VersaSet L	Polymers, sodium silicates, biopolymers, proprietary chemicals (liquids)	FWS	AGM	ED	-	Halliburton
VersaSet LXP	Polymers, sodium silicates, biopolymers, proprietary chemicals (liquids)	FWS	AGM	-	-	Halliburton
Visqueeze Mark II	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements,	LCA	-	-	-	BJ Services
W-10	Manganese Oxides - SG 4.6 - 4.9 nominal.	DIW	-	-	-	BJ Services
Weighted Mud Sweep	Spacers -- Aqueous, weighted - formulated for laminar flow under most cementing conditions	SCW	-	-	-	BJ Services
WELBOND Service	Cements to improve bonding containing polymeric additives such as latex (styrene butadiene or acrylic), polyvinyl alcohol, etc.	SCB	-	-	-	Dowell
WMC-1	Blends of cement, flash and silica fume	SCB	-	-	-	BJ Services
WMC-1B	Blends of cement, flash and silica fume	SCB	-	-	-	BJ Services
Wood Chips	Wood chips	LCA	-	-	-	BJ Services
Wood Chips	Wood chips	LCA	-	-	-	Fracmaster
Wood Chips	Wood chips	LCA	-	-	-	Halliburton
Wood Chips	Wood chips	LCA	-	-	-	NOWSCO CANADA
XR-2	Citric acid, citrate salt or similar for salt saturated slurries	DIS	-	-	-	BJ Services
Zone Check	Non-aqueous slurries - Diesel oil cements, diesel oil bentonite cements, gunk squeeze, etc. Made with regular grind cements	LCA	-	-	-	BJ Services
Zonelock	Reactive washes, polymer solutions - Sodium silicate solutions, complexed sodium silicate solutions, polymer solution	LCA	SCW	-	-	Dowell
Zonelock SC	Chemical Washes (Not weighted with solid weighting agents) - Reactive - containing sodium silicate or similar reactive materials	SCW	-	-	-	Dowell

CHEMICAL INVENTORY:

COMPLETION, STIMULATION, AND WORKOVER CHEMICALS

Completion, Stimulation, and Workover Chemicals: Codes, Functional Categories, Descriptions and Material Types Used

Code	Functional Categories	Description	Material Types Used
A-WBC	Water-base completion fluid	Brine solutions and surfactants for cleaning wells	See inventory for example products (e.g., MudClean OB, Wellwash-1000)
A-WBP	Water-base polymers	Used for adjusting viscosity	Xanthate, modified natural polymers
A-FR	Friction reducers	Used for decreasing resistance to flow	Anionic polyacrylamides, cationic polyacrylamides
A-FL	Fluid loss	Used for reducing loss of fluid to the formation	Graded silica flour, oil soluble resins, benzoic acid
A-DA	Diverting agents	Used to divert acid from high permeable formations to lower permeability formations	Graded rock salt, flake benzoic acid, graded oil soluble resin, oil soluble graded naphthalene
A-PP	Polymer plugs	Used similarly to diverting agents	Guar or hydroxypropylguar, hydroxyethylcellulose, crosslinked hydroxypropylguar
A-AI	Acid inhibitors	Used to keep acid from corroding steel	Propargyl alcohol, ethyl octynol, acetaldehyde, crotonaldehyde, quaternary ammonium salts
A-AR	Acid retarders	Used to slow the reaction of acid with the material being removed. Needed to spread the action of the acid deeper into the formation	Oil wetting surfactants
A-E	Emulsifiers	Used to create emulsified acid mixtures	See inventory for example products (e.g., Nowferr 5, Claymaster 5C)
A-CS	Clay stabilizers	Used to protect integrity of formation clays	Alkyl quaternary ammonium compounds, ammonium chloride, potassium chloride
A-S	Surfactants	Used to clean surfaces being acidized	See inventory for example products(e.g., SuperFlo III, FC-100)
A-NE	Non- emulsifiers	Wetting agents that do not promote emulsification	See inventory for example products (e.g., AquaFlow, LoSurt 259)
A-FS	Fines suspender	Used to disperse fine solids in acidizing fluids	See inventory for example products (e.g., ST 100, SSO-21M)
A-ESA	Anti-sludge agent	Used to prevent the formation of emulsions	Dodecylbenzene sulfonic acid
A-F	Foamers	Used to develop light weight mixtures	See inventory for example products (e.g., FAW-18W, F100)
A-SI	Scale inhibitors	Used to prevent the formation of inorganic scales	See inventory for example products (e.g., L35, Corexit-7647)
A-IC	Iron (Fe) control	Used to complex iron three and prevent re-precipitation in the formation	Organic acids, EDTA
A-OS	Oxygen scavenger	Used to remove oxygen from acidizing fluids and control oxygen corrosion	Bisulfites
A-MS	Mutual solvents	Used to control the formation of water in oil emulsions	Ethylene glycol monobutyl ether (EGMBE)
A-CI	Corrosion inhibitors	Used to control corrosion due to oxygen, carbon dioxide and hydrogen sulfide	Ammonium bisulfite, aldehydes
A-PC	Paraffin control	Used to control solid parrafin deposition	See inventory for example products (e.g., P800, Paratrol 30)
A-MP	Miscellaneous products	Special products from all areas not otherwise categorized	See inventory for example products (e.g., Ammonium Biofluoride, HCl)
A-AS	Acid systems	Basic acid types used	Hydrochloric acid, hydrofluoric acid, organic acids with various additives
A-RAS	Retarded acid plus	Mixtures of mineral acids and organic acids and other specialty acid mixes with slower reaction rates	Mixtures of inorganic and organic acids or inorganic acids and gelling agents
A-MAP	Mud acid plus surfactants	Special acid formulations for removing residual drilling fluids and clay	See inventory for example products (e.g., Available, Special Custom Blend)
A-MAA	Mud acid plus alcohol	Gas well acidizing, low surface tension, fluid clean up	See inventory for example products (e.g., Gas Well Mud Acid, Custom Formulated)
A-RHF	Retarded HF	Generates mud acid (HF) in the formation	See inventory for example products (e.g., Fluorobonic Acid, Clay Acid)
F-WBP	Water-base polymers	Natural and manufactured polymers for increasing viscosity in fracturing fluids	Guar gum, hydroxypropyl guar, hydroxyethyl cellulose
F-FR	Friction reducers	Used to reduce resistance to flow	Anionic polyacrylamides, cationic polyacrylamides
F-FLA	Fluid-loss additives (FLAs)	Insoluble solids used to stop loss of fluids to the formation	Graded silica flour, oil soluble resins, benzoic acid
F-B	Breakers	Used to reduce viscosity in polymer solutions	See inventory for example products (e.g., Enzyme G, AP breaker)
F-E	Emulsifiers	Used to stabilize emulsions of multiphase fluids	See inventory for example products (e.g., PS-3, SEM-5)
F-CS	Clay stabilizers	Used to reduce clay swelling and resulting damage to formations	Alkyl quaternary ammonium compounds, ammonium chloride, potassium chloride
F-S	Surfactants	Used as wetting agents and cleaners	See inventory for example products (e.g., WS-70, InFlo 150)
F-NE	Non-emulsifiers	Wetting agents that do not promote emulsification	See inventory for example products (e.g., AquaFlow, LOSURF 300)
F-PCA	pH control additives	Used to adjust the pH of fluids	Caustic soda, sodium carbonate, ammonium hydroxide, organic acids, sodium acetate, sulfamic acid
F-C	Crosslinkers	Metal compounds used to enhance polymer performance by crosslinking of polymers	See inventory for example products (e.g. , Delay, Sodium Borate)
F-F	Foamers	Used to create low density foam fluids	See inventory for example products (e.g., S-400, WF-1)
F-GS	Gel stabilizers	Used to give stability to polymers in high temperatures	Methanol. See inventory for other example products
F-D	Defoamers	Used to control foam in fluids	See inventory for example products (e.g., Defoamer, AFA-3)
F-OGA	Oil gelling additives	Gelling agents for oil-based fluids	See inventory for example products (e.g., OG-14 Gellant, J601)
F-BC	Biocides	Used to control bacterial degradation of polymers	Aldehydes
F-ABG	Acid-based gel systems	Specialty gel system used in fracturing operations. Preformulated mixture	See inventory for example productsproduct examples (e.g., XLA-3)
F-WBG	Water-based systems	Specialty gel system used in fracturing operations. Preformulated mixture	See inventory for example products (e.g., AquaFrac, Gelled Water)

Completion, Stimulation, and Workover Chemicals: Codes, Functional Categories, Descriptions and Material Types Used

Code	Functional Categories	Description	Material Types Used
F-CGS	Crosslinked gel systems	Specialty gel system used in fracturing operations. Preformulated mixture	See inventory for example products (e.g., Saturn I. Vicking D)
F-AWS	Alcohol/water systems	Specialty gel system used in fracturing operations. Preformulated mixture	See inventory for example products (e.g., Binary Foam, Crosslinked)
F-OBS	Oil-based systems	Specialty gel system used in fracturing operations. Preformulated mixture	See inventory for example products (e.g., Sandoil, Super Rheo Gel)
F-PP	Polymer plugs	Used to stop loss of fluid to formation fractures	Guar, hydroxypropylguar, hydoxyethylcellulose
F-CMG	Continuous mix gel concentrates	Specialty gel system used in fracturing operations. Preformulated mixture	See inventory for example products (e.g., LGC-1, XLFC-3)
F-RCP	Resin-coated proppants	Proppants for holding formation cracks open	See inventory for example products (e.g., SUPER-WEL-Frac)
F-IHC	Intermediate-to-high-strength ceramic proppants	Proppants for holding formation cracks open	See inventory for example products (e.g., MIGHTY-PAC. Z PROP)

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
(80% HPG) J348 (sea water)	Powdered hydroxypropylguar viscosifier with internal breaker. Rapid hydration for continuous mix	F-WBP	-	-	-	Dowell
(YF-GO II)	Oil breaker	F-B	-	-	-	Dowell
1 HTD	Crosslinked guar system	F-CGS	-	-	-	Dowell
1 HTD	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Dowell
100 mesh salt	100 mesh salt	A-FL	-	-	-	BJ Services
100 mesh salt	100 mesh salt	A-FL	-	-	-	Nowsco-Fracmaster
100 mesh salt	100 mesh salt	F-FLA	-	-	-	BJ Services
100 mesh sand	100 mesh sand for acid, water and oil	A-FL	-	-	-	BJ Services
100 mesh sand	100 mesh sand for acid, water and oil	A-FL	-	-	-	Halliburton
100 mesh sand	100 mesh sand for acid, water and oil	A-FL	-	-	-	Nowsco-Fracmaster
100 mesh sand	100 mesh sand for acid, water and oil	A-FL	-	-	-	OSCA
100 mesh sand	100 mesh sand for use in water, oil and acid	F-FLA	-	-	-	BJ Services
100 mesh sand	100 mesh sand for use in water, oil and acid	F-FLA	-	-	-	Nowsco Fracmaster
100 mesh sand	100 mesh sand for use in water, oil and acid	F-FLA	-	-	-	Halliburton
19N	Cationic nonemulsifier for acid and water	A-NE	-	-	-	Halliburton
19N	Cationic nonemulsifier for water and acid	F-NE	-	-	-	Halliburton
20 - 30% HCl	HCl strenghts above 20%	A-AS	-	-	-	BJ Services
20 - 30% HCl	HCl strenghts above 20%	A-AS	-	-	-	OSCA
2000 HT	Crosslinked HPG with high temperature stabilizers	F-CGS	-	-	-	Nowsco Fracmaster
5% diesel	Crosslinked HPG with 3 to 5% hydrocarbon for fluid loss	F-CGS	-	-	-	Nowsco Fracmaster
A153	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	Dowell
A166	Inhibitor for HCl and hydroflouric (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Dowell
A186	Inhibitor for formic and acetic acid	A-AI	-	-	-	Dowell
A201	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	Dowell
A252	H2S inhibitor	A-MP	-	-	-	Dowell
A254	Inhibitor for HCl and hydroflouric (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Dowell
A254	HCl inhibitor for water wells to 120F BHT	A-AI	-	-	-	Dowell
A255	H2S corrosion inhibitor	A-CI	-	-	-	Dowell
A26	Diesel, Kerosene or aromatic	A-MP	-	-	-	Dowell
A260	Inhibitor for HCl and hydroflouric (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Dowell
A260	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	Dowell
A261	Inhibitor for HCl and hydroflouric (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Dowell
A261	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	Dowell
A261	HCl inhibitor for water wells to 120F BHT	A-AI	-	-	-	Dowell
A262	Inhibitor for HCl and hydroflouric (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Dowell
A270	Inhibitor for HCl and hydroflouric (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Dowell
A-28	Amoco A-Sol A-28	A-MS	-	-	-	Dowell
A280	Inhibitor for HCl and hydroflouric (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Dowell
A5-32	Oil wetting surfactant for linestone reservoirs and high temperature	A-AR	-	-	-	BJ Services
A-7	Calcium chloride (CaCl)	A-MP	-	-	-	BJ Services
A-7L	Liquid calcium chloride (CaCL2)	A-CI	-	-	-	BJ Services
AA-100	EDTA - Sects	A-IC	-	-	-	San Antonio
ABF	Ammonium bifluoride	A-MP	-	-	-	Baker Oil Tools
ABF	Ammonium bifluoride	A-MP	-	-	-	Halliburton
ABF	Ammonium bifluoride	A-MP	-	-	-	OSCA
Acetic acid	Organic acid liquid	A-IC	-	-	-	BJ Services
Acetic acid	Organic acid liquid	A-IC	-	-	-	Baker Oil Tools
Acetic acid	Organic acid liquid	A-IC	-	-	-	Halliburton
Acetic acid	Organic acid liquid	A-IC	-	-	-	OSCA
Acetic acid	Organic acid liquid	A-IC	-	-	-	San Antonio
Acetic acid	Organic acid	A-MP	-	-	-	Baker Oil Tools
Acetic acid	Organic acid	A-MP	-	-	-	Nowsco-Fracmaster
Acetic acid	Organic acid	A-MP	-	-	-	OSCA
Acetic acid	Organic acid	A-MP	-	-	-	San Antonio
Acetic acid	Acetic acid	A-AS	-	-	-	BJ Services
Acetic acid	Acetic acid	A-AS	-	-	-	Baker Oil Tools
Acetic acid	Acetic acid	A-AS	-	-	-	Nowsco-Fracmaster
Acetic acid	Acetic acid	A-AS	-	-	-	OSCA
Acetic acid	Acetic acid in hydrocarbon	A-AS	-	-	-	BJ Services
Acetic acid	Acid breaker for guar, guar and cellulose derivatives	F-B	-	-	-	BJ Services
Acetic anhydride	Acid breaker for guar, guar and cellulose derivatives	F-B	-	-	-	BJ Services
ACI-366	HCl inhibitor for water wells to 120F BHT	A-AI	-	-	-	BJ Services
Acid + LT-21	Acid plus surfactant and fines suspender to improve cleanup	A-AS	-	-	-	BJ Services
Acid +LT-17	Acid plus surfactant and fines suspender to improve cleanup	A-AS	-	-	-	BJ Services
Acid and AG	Mixture of HCl and gelling agent	A-RAS	-	-	-	BJ Services
Acid plus additives	Acid plus surfactant to improve cleanup and prevent emulsions	A-AS	-	-	-	BJ Services
Acid with CS-1	HCl and clay control additives	A-AS	-	-	-	OSCA
Acid with L42	HCl and clay control additives	A-AS	-	-	-	Dowell
Acid with L55	HCl and clay control additives	A-AS	-	-	-	Dowell
Acidfoam	Foaming agent for acid and water	A-F	-	-	-	San Antonio
AcidFrac	Acid external emulsion with gelling agents in acid	A-RAS	-	-	-	Halliburton
Acigel	Liquid acid viscosifier	A-WBP	-	-	-	BJ Services
Acigel	Liquid cationic polyacrylamide for acids	A-FR	-	-	-	BJ Services
Aciroel	Liquid cationic polyacrylamide for acids, brines and fresh water	F-FR	-	-	-	Nowsco Fracmaster
ACO-1	Foaming agent for water and methanol	A-F	-	-	-	Halliburton
ACO-1	Foaming agent for 100% methanol and methanol water mixtures	A-F	-	-	-	Halliburton
ACO-1	Emulsifier for polyemulsion, CO2 emulsions or foams	F-E	-	-	-	Halliburton
ACO-1	Foaming agent for water and methanol	F-F	-	-	-	Halliburton
ACO-1	Foaming agent for 100% methanol and methanol-water mixtures	F-F	-	-	-	Halliburton
Adomite Aqua	FLA used in water and oil (Adomite Aqua)	F-FLA	-	-	-	BJ Services
Adomite Aqua	FLA used in water and oil (Adomite Aqua)	F-FLA	-	-	-	Fracmaster
Adomite Aqua	FLA used in water and oil (Adomite Aqua)	F-FLA	-	-	-	Halliburton
Adomite Aqua	FLA used in water and oil (Adomite Aqua)	F-FLA	-	-	-	Nowsco Fracmaster
Adomite Mark II	FLA used in oil base fluids (Adomite Mark II)	F-FLA	-	-	-	BJ Services
Adomite Mark II	FLA used in oil base fluids (Adomite Mark II)	F-FLA	-	-	-	Fracmaster
Adomite Mark II	FLA used in oil base fluids (Adomite Mark II)	F-FLA	-	-	-	Halliburton
Adomite Mark II	FLA used in oil base fluids (Adomite Mark II)	F-FLA	-	-	-	Nowsco Fracmaster
Adomite Regain	FLA, Powdered fully degradable FLA for water base fluid used 120 to 350 F	F-FLA	-	-	-	BJ Services

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Adomite Regain	FLA, Powdered fully degradable FLA for water base fluid used 120 to 350 F	F-FLA	-	-	-	Nowsco Fracmaster
Adomite Regain	FLA, Powdered fully degradable FLA for water base fluid at 70 to 350 F with internal breaker	F-FLA	-	-	-	Halliburton
Adomite Regain	FLA, Powdered fully degradable FLA for water base fluid at 70 to 350 F with internal breaker	F-FLA	-	-	-	Osca
Adomite Regain	Liquid FLA for use in oil wells with water base fluids from 80 to 300F (diesel or other hydrocarbon)	F-FLA	-	-	-	Osca
AE-7	Oil external emulsifier for HCl and HCl organic mixtures	A-E	-	-	-	BJ Services
AE-7	Stabilizer for acid emulsion	A-MP	-	-	-	BJ Services
AF-1	Foaming agent	A-F	-	-	-	Nowsco-Fracmaster
AF-1	Foaming agent for acid and water	A-F	-	-	-	Nowsco-Fracmaster
AF-1	Foaming agent	F-F	-	-	-	Fracmaster
AF-1	Foaming agent for water and acids	F-F	-	-	-	Fracmaster
AF-61	Oil external emulsifier for HCl and HCl organic mixtures	A-E	-	-	-	Halliburton
AF-61	Stabilizer for acid emulsion	A-MP	-	-	-	Halliburton
AFA-2	Defoamer for aqueous fluids	F-D	-	-	-	Nowsco Fracmaster
AFA-3	Defoamer for aqueous fluids	F-D	-	-	-	Nowsco Fracmaster
AG 193	Liquid anionic polyacrylamide for acids	A-FR	-	-	-	Baker Oil Tools
AG 193	Anionic powder for acid, brines and fresh water	A-FR	-	-	-	Baker Oil Tools
AG-10	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	BJ Services
AG-10	HCl and chemical retarder mixture	A-RAS	-	-	-	BJ Services
AG-12	Liquid acid viscosifier	A-WBP	-	-	-	BJ Services
AG-12	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	BJ Services
AG-12	Liquid cationic polyacrylamide for acids	A-FR	-	-	-	BJ Services
AG-12 ACIGEL	Liquid cationic polyacrylamide for acids, brines and fresh water	F-FR	-	-	-	BJ Services
AG-193	Liquid acid viscosifier	A-WBP	-	-	-	Baker Oil Tools
AG-21R	Powdered hydroxethylcellulose viscosifier. Delayed hydration polymer for use as a secondary gel or batch mix	F-WBP	-	-	-	BJ Services
AG-21R	No residue gelled water (HEC)	F-WBG	-	-	-	BJ Services
AG-26	Powdered xanthate polyner for viscosifying 15 % or less hydrochloric	A-WBP	-	-	-	BJ Services
AG-57L	Liquid acid viscosifier	A-WBP	-	-	-	BJ Services
AG-57L	Liquid anionic polyacrylamide for acids	A-FR	-	-	-	BJ Services
AG-57L	Liquid anionic polyacrylamide for water	F-FR	-	-	-	BJ Services
AG-57L	Liquid cationic polyacrylamide for acids, brines and fresh water	F-FR	-	-	-	Nowsco Fracmaster
Agicel	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	BJ Services
Agua Free	Cationic surfactant for acid or water	A-NE	-	-	-	San Antonio
Agua Free	Nonionic nonemulsifier for oil	A-NE	-	-	-	San Antonio
AguaFlow	Nonionic nonemulsifier for oil	A-NE	-	-	-	BJ Services
AH-1	Anti-sludge agent for acid	A-ASA	-	-	-	Nowsco-Fracmaster
AI 170	HCl inhibitor for water wells to 120F BHT	A-AI	-	-	-	Nowsco-Fracmaster
AI-275	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Nowsco-Fracmaster
AI-275	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	Nowsco-Fracmaster
AI-350	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	Nowsco-Fracmaster
AKXL	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	Nowsco-Fracmaster
AKXL	Proprietary crosslinking agent. Antimony (Sb)	F-C	-	-	-	Nowsco Fracmaster
ALCHEK	Aluminum scale inhibitor	A-SI	-	-	-	Halliburton
AlcoFoam	Methanol and N2 foam	F-OBS	-	-	-	Halliburton
Alcohol acid	Acid and alcohol mixture	A-AS	-	-	-	Dowell
Alcohol acid	Acid and alcohol mixture	A-AS	-	-	-	Nowsco-Fracmaster
Alcohol Foamed	Methanol and N2 foam	F-OBS	-	-	-	Nowsco Fracmaster
Ammonium biofluoride	Ammonium bifluoride	A-MP	-	-	-	BJ Services
Ammonium biofluoride	Ammonium bifluoride	A-MP	-	-	-	Nowsco-Fracmaster
Ammonium biofluoride	Ammonium bifluoride	A-MP	-	-	-	San Antonio
Ammonium chloride	Ammonium chloride (NHCl)	A-MP	-	-	-	BJ Services
Ammonium chloride	Ammonium chloride (NHCl)	A-MP	-	-	-	Baker Oil Tools
Ammonium chloride	Ammonium chloride (NHCl)	A-MP	-	-	-	Nowsco-Fracmaster
Ammonium chloride	Ammonium chloride (NHCl)	A-MP	-	-	-	OSCA
Ammonium chloride	Ammonium chloride (NHCl)	A-MP	-	-	-	San Antonio
Ammonium hydroxide	Strong base	F-PCA	-	-	-	BJ Services
Ammoniumhydroxide	Strong base	F-PCA	-	-	-	Halliburton
ANHIB II	Multi-purpose completion fluid inhibitor	A-CI	-	-	-	Halliburton
ANHIB II	Completion fluid corrosion inhibitor	A-CI	-	-	-	Halliburton
AntiFoam 1	Defoamer for aqueous fluids	F-D	-	-	-	Nowsco Fracmaster
Anti-foamer 1	Defoamer for aqueous fluids	F-D	-	-	-	BJ Services
AP breaker	Oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Halliburton
AQF-2	Foaming agent	A-F	-	-	-	Halliburton
AQF-2	Emulsifier for polyemulsion, CO2 emulsions or foams	F-E	-	-	-	Halliburton
AQF-2	Foaming agent	F-F	-	-	-	Halliburton
Aqua Free	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	San Antonio
Aquaclose	Acid fluid loss additives	A-FL	-	-	-	San Antonio
Aquaclose SOL	Acid fluid loss additives	A-FL	-	-	-	San Antonio
Aquaflex	Economical, low residue crosslinked system	F-CGS	-	-	-	Osca
AquaFlow	Nonionic nonemulsifier	A-NE	-	-	-	BJ Services
AquaFlow	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	BJ Services
AquaFlow	Nonionic nonemulsifier	F-NE	-	-	-	BJ Services
AquaFlow	Nonionic nonemulsifier	F-NE	-	-	-	Nowsco Fracmaster
AquaFlow	Nonionic nonemulsifier for oil	F-NE	-	-	-	BJ Services
AquaFlow	Nonionic nonemulsifier for oil	F-NE	-	-	-	Nowsco Fracmaster
AquaFlow	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
AquaFlow	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
AquaFoam	Water N2 foam with or without gel	F-OBS	-	-	-	Fracmaster
AquaFrac	Water and friction reducer	F-WBG	-	-	-	BJ Services
AquaFrac	Water and friction reducer	F-WBG	-	-	-	Nowsco Fracmaster
AquaFrac	Gelled water	F-WBG	-	-	-	BJ Services
AquaFrac	Gelled water	F-WBG	-	-	-	Nowsco Fracmaster
AquaFrac 1	Gelled water	F-WBG	-	-	-	Fracmaster
AquaFrac 2	Gelled water	F-WBG	-	-	-	Fracmaster
AquaFrac 2	Low residue gelled water (HPG)	F-WBG	-	-	-	Fracmaster
AquaFrac 3	Gelled water	F-WBG	-	-	-	Fracmaster
Aquamaster 1 SG	Crosslinked HPG	F-CGS	-	-	-	Fracmaster
Aquamaster 10	Crosslinked HPG	F-CGS	-	-	-	Fracmaster
Aquamaster 12	Crosslinked guar or hydroxypropylguar	A-PP	-	-	-	Nowsco-Fracmaster
Aquamaster 12	Crosslinked guar or HPG with borate	F-CGS	-	-	-	Fracmaster
Aquamaster 16X	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Fracmaster
Aquamaster 2	Crosslinked HPG	F-CGS	-	-	-	Fracmaster

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Aquamaster 20X	CO2 compatible fracturing fluid	F-CGS	-	-	-	Fracmaster
Aquamaster 3	CO2 compatible fracturing fluid	F-CGS	-	-	-	Fracmaster
Aquamaster 3	Crosslinked CMHPG high temperature fluid	F-CGS	-	-	-	Fracmaster
Aquamaster 3	Crosslinked CMHPG low pH CO2 compatible fluid	F-CGS	-	-	-	Fracmaster
Aquamaster 4	Crosslinked CMHEC	F-CGS	-	-	-	Fracmaster
Aquamaster 4	CO2 compatible fracturing fluid	F-CGS	-	-	-	Fracmaster
Aquamaster 5	Crosslinked CMHEC	F-CGS	-	-	-	Fracmaster
Aquamaster 5	CO2 compatible fracturing fluid	F-CGS	-	-	-	Fracmaster
Aquamaster-12	Crosslinked guar system	F-CGS	-	-	-	Fracmaster
Aquamaster-14X	Crosslinked guar system	F-CGS	-	-	-	Fracmaster
Aquamaster-24X	Crosslinked guar system	F-CGS	-	-	-	Fracmaster
Aqueous acetic	Acetic acid	A-AS	-	-	-	Dowell
Aqueous ammonia	Strong base	F-PCA	-	-	-	Nowsco Fracmaster
Aqueous ammonia	Strong base	F-PCA	-	-	-	Osca
Aqumaster 5	Crosslinked CMHEC for high temperature	F-CGS	-	-	-	Fracmaster
AS 909	Anti-sludge agent for acid	A-ASA	-	-	-	Baker Oil Tools
AS 910	Anti-sludge agent for acid	A-ASA	-	-	-	Baker Oil Tools
AS-32	Oil external emulsifier for HCl and HCl organic mixtures	A-E	-	-	-	BJ Services
AS-32	Anionic nonemulsifier	A-NE	-	-	-	BJ Services
AS-32	Anti-sludge agent for acid	A-ASA	-	-	-	BJ Services
AS-32	Anionic nonemulsifier	F-NE	-	-	-	BJ Services
AS-32	Anionic nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
AS-5	Anionic nonemulsifier	A-NE	-	-	-	Halliburton
AS-5	Anionic nonemulsifier for acid and water	A-NE	-	-	-	Halliburton
AS-5	Anti-sludge agent for acid	A-ASA	-	-	-	Halliburton
AS-66	Anionic nonemulsifier	A-NE	-	-	-	BJ Services
AS-66	Anti-sludge agent for acid	A-ASA	-	-	-	BJ Services
AS-7	Anionic nonemulsifier	F-NE	-	-	-	Halliburton
AS-7	Anionic nonemulsifier for water and acid	F-NE	-	-	-	Halliburton
AS-9	Anionic nonemulsifier	A-NE	-	-	-	Halliburton
AS-9	Anionic nonemulsifier for acid and water	A-NE	-	-	-	Halliburton
AS-9	Anti-sludge agent for acid	A-ASA	-	-	-	Halliburton
AS-9	Anionic nonemulsifier	F-NE	-	-	-	Halliburton
ASA-15	Anionic nonemulsifier	F-NE	-	-	-	Fracmaster
ASA-15	Anionic nonemulsifier for oil and dispersible water	F-NE	-	-	-	Fracmaster
ASA-15	Anionic nonemulsifier for water and acid	F-NE	-	-	-	Fracmaster
ASA-18	Cationic surfactant for acid or water	A-NE	-	-	-	Nowsco-Fracmaster
ASA-18	Cationic nonemulsifier for acid and water	A-NE	-	-	-	Nowsco-Fracmaster
ASA-18	Anti-sludge agent for acid	A-ASA	-	-	-	Nowsco-Fracmaster
ASA-18X	Cationic nonemulsifier for water and acid	F-NE	-	-	-	Fracmaster
ASL-100	Anti-sludge agent for acid	A-ASA	-	-	-	OSCA
A-Sol	Amoco mutual solvent	A-MS	-	-	-	Halliburton
A-Sol	Amoco mutual solvent	A-MS	-	-	-	Nowsco-Fracmaster
A-Sol	Amoco mutual solvent	A-MS	-	-	-	OSCA
A-Sol	Amoco A-Sol A-28	A-MS	-	-	-	Dowell
A-Sol A-28	Amoco A-Sol A-28	A-MS	-	-	-	Halliburton
A-Sol A-28	Amoco A-Sol A-28	A-MS	-	-	-	Nowsco-Fracmaster
A-Sol A-28	Amoco A-Sol A-28	A-MS	-	-	-	OSCA
Available	Powdered xanthate polymer for viscosifying 15 % or less hydrochloric	A-WBP	-	-	-	OSCA
Available	Liquid acid viscosifier	A-WBP	-	-	-	OSCA
Available	Liquid cationic polyacrylamide for acids	A-FR	-	-	-	Nowsco-Fracmaster
Available	Combination graded oil soluble resin and degradable low molecular weight polymers non-damaging additive for acid and water	A-FL	-	-	-	BJ Services
Available	Combination graded oil soluble resin and degradable low molecular weight polymers non-damaging additive for acid and water	A-FL	-	-	-	Nowsco-Fracmaster
Available	100 mesh benzoic acid for acid, water or foam fracturing treatments	A-FL	-	-	-	Halliburton
Available	100 mesh benzoic acid for acid, water or foam fracturing treatments	A-FL	-	-	-	OSCA
Available	100 mesh oil soluble resin for acid and water	A-FL	-	-	-	BJ Services
Available	100 mesh salt	A-FL	-	-	-	OSCA
Available	Oil soluble resin in aqueous solution	A-DA	-	-	-	OSCA
Available	Graded rock salt	A-DA	-	-	-	Baker Oil Tools
Available	Non-aqueous solution	A-DA	-	-	-	Nowsco-Fracmaster
Available	Graded oil soluble resin	A-DA	-	-	-	BJ Services
Available	Oil soluble graded napthalene	A-DA	-	-	-	BJ Services
Available	Oil soluble graded napthalene	A-DA	-	-	-	OSCA
Available	Acid diverting agent	A-DA	-	-	-	OSCA
Available	Guar or hydroxypropylguar (HPG) system	A-PP	-	-	-	BJ Services
Available	Guar or hydroxypropylguar (HPG) system	A-PP	-	-	-	Baker Oil Tools
Available	Crosslinked guar or hydroxypropylguar	A-PP	-	-	-	Baker Oil Tools
Available	HCl inhibitor for water wells to 120F BHT	A-AI	-	-	-	Baker Oil Tools
Available	Oil wetting surfactant for limestone reservoirs and moderate temperature	A-AR	-	-	-	Baker Oil Tools
Available	Oil wetting surfactant for linestone reservoirs and high temperature	A-AR	-	-	-	Baker Oil Tools
Available	Oil external emulsifier for HCl and HCl organic mixtures	A-E	-	-	-	Baker Oil Tools
Available	Cationic polymer for stabilizing clays	A-CS	-	-	-	Baker Oil Tools
Available	Cationic potassium chloride (KCl) substitute	A-CS	-	-	-	OSCA
Available	Scale inhibitor	A-SI	-	-	-	BJ Services
Available	Aluminum scale inhibitor	A-SI	-	-	-	BJ Services
Available	EDTA - Sects	A-IC	-	-	-	Baker Oil Tools
Available	EDTA - Sects	A-IC	-	-	-	Halliburton
Available	Amoco mutual solvent	A-MS	-	-	-	BJ Services
Available	Amoco mutual solvent	A-MS	-	-	-	Baker Oil Tools
Available	Amoco A-Sol A-28	A-MS	-	-	-	BJ Services
Available	Amoco A-Sol A-28	A-MS	-	-	-	Baker Oil Tools
Available	Amoco Super A-Sol	A-MS	-	-	-	BJ Services
Available	Amoco Super A-Sol	A-MS	-	-	-	Baker Oil Tools
Available	Multi-purpose completion fluid inhibitor	A-CI	-	-	-	BJ Services
Available	Completion fluid corrosion inhibitor	A-CI	-	-	-	BJ Services
Available	Liquid calcium chloride (CaCL2)	A-CI	-	-	-	San Antonio
Available	Liquid calcium bromide (CaBr)	A-CI	-	-	-	Nowsco-Fracmaster
Available	Liquid calcium bromide (CaBr)	A-CI	-	-	-	San Antonio
Available	Liquid zinc chloride (ZnCl)	A-CI	-	-	-	San Antonio
Available	Paraffin dispersant	A-PC	-	-	-	Nowsco-Fracmaster
Available	Liquid paraffin dispersant inhibitor	A-PC	-	-	-	BJ Services
Available	Stabilizer for acid emulsion	A-MP	-	-	-	OSCA
Available	Diesel, Kerosene or aromatic	A-MP	-	-	-	Nowsco-Fracmaster
Available	General purpose anionic surfactant	A-MP	-	-	-	Baker Oil Tools

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Available	Pipe dope removal	A-MP	-	-	-	BJ Services
Available	Environmental friendly solvents	A-MP	-	-	-	Baker Oil Tools
Available	Asphaltene inhibitor	A-MP	-	-	-	BJ Services
Available	Asphaltene inhibitor	A-MP	-	-	-	Baker Oil Tools
Available	Water-base mud removal system	A-MP	-	-	-	Baker Oil Tools
Available	Powdered scale control component of gyp removal process	A-MP	-	-	-	BJ Services
Available	Liquid scale control component	A-MP	-	-	-	BJ Services
Available	Organic acid	A-MP	-	-	-	BJ Services
Available	Barium sulfate scale solvent	A-MP	-	-	-	Baker Oil Tools
Available	Acid plus surfactant to improve cleanup and prevent emulsions	A-AS	-	-	-	OSCA
Available	Acid plus surfactant to improve cleanup and prevent emulsions	A-AS	-	-	-	San Antonio
Available	Low surface tension acid plus iron stabilization	A-AS	-	-	-	Baker Oil Tools
Available	Low surface tension acid plus iron stabilization	A-AS	-	-	-	Halliburton
Available	HCI acid with surfactants to disperse and suspend mud and fines	A-AS	-	-	-	BJ Services
Available	HCI acid with surfactants to disperse and suspend mud and fines	A-AS	-	-	-	Baker Oil Tools
Available	HCI acid with surfactants to disperse and suspend mud and fines	A-AS	-	-	-	OSCA
Available	HCI and clay control additives	A-AS	-	-	-	BJ Services
Available	HCI and clay control additives	A-AS	-	-	-	Baker Oil Tools
Available	Acetic acid in hydrocarbon	A-AS	-	-	-	Baker Oil Tools
Available	Acid and alcohol mixture	A-AS	-	-	-	Baker Oil Tools
Available	Acid and alcohol mixture	A-AS	-	-	-	OSCA
Available	Proprietary formulated to prevent acid sludging	A-AS	-	-	-	BJ Services
Available	Proprietary formulated to prevent acid sludging	A-AS	-	-	-	Baker Oil Tools
Available	Mud removal acid with iron stabilizing agents	A-AS	-	-	-	BJ Services
Available	Mud removal acid with iron stabilizing agents	A-AS	-	-	-	Baker Oil Tools
Available	Mud removal acid with iron stabilizing agents	A-AS	-	-	-	OSCA
Available	HCI acid with a dispersed aromatic solvent	A-AS	-	-	-	Baker Oil Tools
Available	HCI acid with a dispersed aromatic solvent	A-AS	-	-	-	Nowsco-Fracmaster
Available	HCI acid with a dispersed aromatic solvent	A-AS	-	-	-	OSCA
Available	HCI strenghts above 20%	A-AS	-	-	-	Baker Oil Tools
Available	HCI strenghts above 20%	A-AS	-	-	-	Nowsco-Fracmaster
Available	HCI with low concentration HF	A-AS	-	-	-	Baker Oil Tools
Available	HCI with low concentration HF	A-AS	-	-	-	Nowsco-Fracmaster
Available	HCI with low concentration HF	A-AS	-	-	-	OSCA
Available	Acid plus surfactant and fines suspender to improve cleanup	A-AS	-	-	-	Baker Oil Tools
Available	Acid plus surfactant and fines suspender to improve cleanup	A-AS	-	-	-	OSCA
Available	Fines removal acid with iron stabilization	A-AS	-	-	-	Baker Oil Tools
Available	Fines removal acid with iron stabilization	A-AS	-	-	-	Halliburton
Available	Fines removal acid with iron stabilization	A-AS	-	-	-	OSCA
Available	Acid plus iron stabilization	A-AS	-	-	-	Baker Oil Tools
Available	Acid plus iron stabilization	A-AS	-	-	-	OSCA
Available	HCI and acetic acid mixture	A-RAS	-	-	-	Baker Oil Tools
Available	HCI and formic acid mixture	A-RAS	-	-	-	Baker Oil Tools
Available	Formic acetic	A-RAS	-	-	-	Baker Oil Tools
Available	Formic acetic	A-RAS	-	-	-	Nowsco-Fracmaster
Available	HCI and chemical retarder mixture	A-RAS	-	-	-	Baker Oil Tools
Available	HCI and chemical retarder mixture	A-RAS	-	-	-	OSCA
Available	Chemically retarded HCI and acetic acid mixture	A-RAS	-	-	-	BJ Services
Available	Chemically retarded HCI and acetic acid mixture	A-RAS	-	-	-	Baker Oil Tools
Available	Chemically retarded HCI and acetic acid mixture	A-RAS	-	-	-	Dowell
Available	Chemically retarded HCI and acetic acid mixture	A-RAS	-	-	-	Halliburton
Available	Chemically retarded HCI and acetic acid mixture	A-RAS	-	-	-	OSCA
Available	Organic acid mixture equual to 15 % HCI	A-RAS	-	-	-	Baker Oil Tools
Available	Organic acid mixture equual to 15 % HCI	A-RAS	-	-	-	OSCA
Available	Chemically retarded HCI and formic acid mixture	A-RAS	-	-	-	Baker Oil Tools
Available	Chemically retarded HCI and formic acid mixture	A-RAS	-	-	-	Halliburton
Available	Chemically retarded HCI and formic acid mixture	A-RAS	-	-	-	OSCA
Available	Oil external acid internal emulsion	A-RAS	-	-	-	Baker Oil Tools
Available	Acid external emulsion with gelling agents in acid	A-RAS	-	-	-	Baker Oil Tools
Available	Mixture of HCI and gelling agent	A-RAS	-	-	-	Baker Oil Tools
Available	Mixture of HCI and gelling agent	A-RAS	-	-	-	OSCA
Available	Specialty acid for sour gas wells	A-RAS	-	-	-	Baker Oil Tools
Available	Specialty acid for sour gas wells	A-RAS	-	-	-	OSCA
Available	Crosslinked high viscosity acid	A-RAS	-	-	-	Baker Oil Tools
Available	Crosslinked high viscosity acid	A-RAS	-	-	-	Nowsco-Fracmaster
Available	Alternating stages of viscous spearhead acid control (SAC)	A-RAS	-	-	-	BJ Services
Available	Alternating stages of viscous spearhead acid control (SAC)	A-RAS	-	-	-	Baker Oil Tools
Available	Thin acid in oil emulsion that thicknes in high water saturation zone and thins in high oil saturation zone	A-RAS	-	-	-	Baker Oil Tools
Available	Thin acid in oil emulsion that thicknes in high water saturation zone and thins in high oil saturation zone	A-RAS	-	-	-	Baker Oil Tools
Available	Mud removal and clay mineral acidizing, low surface tension	A-MAP	-	-	-	BJ Services
Available	Mud removal and clay mineral acidizing, low surface tension	A-MAP	-	-	-	Baker Oil Tools
Available	Mud removal and clay mineral acidizing, low surface tension	A-MAP	-	-	-	Nowsco-Fracmaster
Available	Mud removal and clay mineral acidizing, low surface tension	A-MAP	-	-	-	OSCA
Available	Gas well acidizing, low surface tension, fluid cleanup	A-MAA	-	-	-	Baker Oil Tools
Available	Gas well acidizing, low surface tension, fluid cleanup	A-MAA	-	-	-	Nowsco-Fracmaster
Available	Gas well acidizing, low surface tension, fluid cleanup	A-MAA	-	-	-	OSCA
Available	(Shell Development)	A-SG	-	-	-	Baker Oil Tools
Available	Generates mud acid in formation	A-RHF	-	-	-	OSCA
Available	Powdered hydroxethylcellulose viscosifier. Delayed hydration polymer for use as a secondary gel or batch mix	F-WBP	-	-	-	Fracmaster
Available	CMHPG gum in oil base slurry	F-WBP	-	-	-	Fracmaster
Available	Guar gum in oil base slurry	F-WBP	-	-	-	Fracmaster
Available	HPG gum in oil base slurry	F-WBP	-	-	-	Fracmaster
Available	Powdered hydroxyethylcellulose viscosifier	F-WBP	-	-	-	Fracmaster
Available	Powdered xanthan gum gelling agents as carrier fluid for gravel packs	F-WBP	-	-	-	Fracmaster
Available	100 mesh benzoic acid for water, acid or foam fracturing treatments	F-FLA	-	-	-	Halliburton
Available	100 mesh benzoic acid for water, acid or foam fracturing treatments	F-FLA	-	-	-	Nowsco Fracmaster
Available	100 mesh salt	F-FLA	-	-	-	Dowell
Available	100 mesh salt	F-FLA	-	-	-	Halliburton
Available	100 mesh salt	F-FLA	-	-	-	Nowsco Fracmaster
Available	FLA, Powdered fully degradable FLA for water base fluid at 70 to 350 F with internal breaker	F-FLA	-	-	-	BJ Services
Available	Liquid FLA for use in oil wells with water base fluids from 80 to 300F (diesel or other hydrocarbon)	F-FLA	-	-	-	BJ Services

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Available	Fully degradable FLA in diesel slurry for water base fluids at 120 to 350 F	F-FLA	-	-	-	BJ Services
Available	Fully degradable FLA in diesel slurry for water base fluids at 120 to 350 F	F-FLA	-	-	-	Halliburton
Available	Stach specific enzyme breaker	F-B	-	-	-	Fracmaster
Available	Low temperature breaker activator for persulfates	F-B	-	-	-	Fracmaster
Available	Low temperature breaker activator for persulfates	F-B	-	-	-	Osca
Available	Powdered weak base	F-PCA	-	-	-	Fracmaster
Available	Sulfamic acid	F-PCA	-	-	-	Fracmaster
Available	Foaming agent for 100% methanol and methanol-water mixtures	F-F	-	-	-	BJ Services
Available	Water abnd friction reducer	F-WBG	-	-	-	Halliburton
Available	Water abnd friction reducer	F-WBG	-	-	-	Osca
Available	Gelled water	F-WBG	-	-	-	Osca
Available	Gelled water with FLA	F-WBG	-	-	-	Fracmaster
Available	Gelled water with FLA	F-WBG	-	-	-	Nowsco Fracmaster
Available	Low residue gelled water (HPG)	F-WBG	-	-	-	Osca
Available	No residue gelled water (HEC)	F-WBG	-	-	-	Fracmaster
Available	Crosslinked HPG with 3 to 5% hydrocarbon for fluid loss	F-CGS	-	-	-	BJ Services
Available	Crosslinked HPG with 3 to 5% hydrocarbon for fluid loss	F-CGS	-	-	-	Fracmaster
Available	Crosslinked HPG with high temperature stabilizers	F-CGS	-	-	-	Fracmaster
Available	Crosslinked CMHEC	F-CGS	-	-	-	Dowell
Available	Crosslinked guar or HPG with borate	F-CGS	-	-	-	BJ Services
Available	Gelled water-alcohol systems	F-AWS	-	-	-	BJ Services
Available	Gelled water-alcohol systems	F-AWS	-	-	-	Dowell
Available	Gelled water-alcohol systems	F-AWS	-	-	-	Fracmaster
Available	Gelled water-alcohol systems	F-AWS	-	-	-	Halliburton
Available	Gelled water-alcohol systems	F-AWS	-	-	-	Nowsco Fracmaster
Available	Gelled water-alcohol systems	F-AWS	-	-	-	Osca
Available	N2 and Co2 foam	F-AWS	-	-	-	Fracmaster
Available	N2 and Co2 foam	F-AWS	-	-	-	Halliburton
Available	Crosslinked 100% alcohol system	F-AWS	-	-	-	Dowell
Available	Oil without viscosifier	F-OBS	-	-	-	BJ Services
Available	Oil without viscosifier	F-OBS	-	-	-	Osca
Available	Water N2 foam with or without gel	F-OBS	-	-	-	BJ Services
Available	Acid and N2 foam	F-OBS	-	-	-	BJ Services
Available	Acid and N2 foam	F-OBS	-	-	-	Dowell
Available	Acid and N2 foam	F-OBS	-	-	-	Halliburton
Available	Hydrocarbon and N2 foam	F-OBS	-	-	-	BJ Services
Available	Hydrocarbon and N2 foam	F-OBS	-	-	-	Dowell
Available	NOWFOAM Followed by gelled fluid	F-OBS	-	-	-	BJ Services
Available	Water and CO2 foam	F-OBS	-	-	-	Dowell
Available	Crosslinked gelled water foam	F-OBS	-	-	-	BJ Services
Available	Guar and hydroxypropylguar system	F-PP	-	-	-	BJ Services
Available	Crosslinked guar or hydroxypropylguar system	F-PP	-	-	-	BJ Services
Available	Crosslinked guar or hydroxypropylguar system	F-PP	-	-	-	Nowsco Fracmaster
Available	HPG without KCl in aqueous slurry	F-CMG	-	-	-	Fracmaster
Available	Guar in diesel slurry	F-CMG	-	-	-	Fracmaster
Available	HPG in diesel slurry	F-CMG	-	-	-	Fracmaster
Available	CMHEC in diesel slurry	F-CMG	-	-	-	Fracmaster
Available	Guar in mineral oil slurry	F-CMG	-	-	-	BJ Services
Available	Guar in mineral oil slurry	F-CMG	-	-	-	Dowell
Available	Guar in mineral oil slurry	F-CMG	-	-	-	Fracmaster
Available	Guar in mineral oil slurry	F-CMG	-	-	-	Nowsco Fracmaster
Available	HPG in mineral oil slurry	F-CMG	-	-	-	BJ Services
Available	HPG in mineral oil slurry	F-CMG	-	-	-	Dowell
Available	HPG in mineral oil slurry	F-CMG	-	-	-	Fracmaster
Available	HPG in mineral oil slurry	F-CMG	-	-	-	Halliburton
Available	HPG in mineral oil slurry	F-CMG	-	-	-	Nowsco Fracmaster
B124	Foaming agent for water and methanol	F-F	-	-	-	Dowell
B34	Scale inhibitor	A-SI	-	-	-	Dowell
B-4X	Bacteriacide	F-OGA	-	-	-	Fracmaster
B-4X	Biocide	F-OGA	-	-	-	Fracmaster
B50-3	Barium sulfate scale solvent	A-MP	-	-	-	Nowsco-Fracmaster
B58	Oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Dowell
B60	Anionic nonemulsifier	A-NE	-	-	-	Dowell
B60	Anionic nonemulsifier	F-NE	-	-	-	Dowell
B69	Biocide	F-OGA	-	-	-	Dowell
B94	Inhibitor for HCl and hydroflouric (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Dowell
B94	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	Dowell
B94	HCl inhibitor for water wells to 120F BHT	A-AI	-	-	-	Dowell
BA-2	Sulfamic acid	F-PCA	-	-	-	Halliburton
BA-20	Buffers (propriety)	F-PCA	-	-	-	Halliburton
BA-40	Strong base	F-PCA	-	-	-	Halliburton
BA-40	Buffers (propriety)	F-PCA	-	-	-	Halliburton
Ba-40L	Strong base	F-PCA	-	-	-	Halliburton
BA-40L	Buffers (propriety)	F-PCA	-	-	-	Halliburton
BaSolvent 2	Barium sulfate scale solvent	A-MP	-	-	-	Halliburton
BC-1	Low temperature breaker activator for persulfates	F-B	-	-	-	BJ Services
BC-1	Low temperature breaker activator for persulfates	F-B	-	-	-	Nowsco Fracmaster
BC-140	Proprietary crosslinking agent. Borate	F-C	-	-	-	Halliburton
BC-2	Acid breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Nowsco Fracmaster
BC-2	Low temperature breaker activator for persulfates	F-B	-	-	-	BJ Services
BC-2	Low temperature breaker activator for persulfates	F-B	-	-	-	Nowsco Fracmaster
BC-200	Propnetary crosslinking agent. Borate	F-C	-	-	-	Halliburton
BC-200	Delayed borate crosslinker high temperature	F-C	-	-	-	Halliburton
BC-31	Low temperature breaker activator for persulfates	F-B	-	-	-	BJ Services
BC-31	Low temperature breaker activator for persulfates	F-B	-	-	-	Nowsco Fracmaster
BD FL 44	FLA, Powdered fully degradable FLA for water base fluid used 120 to 350 F	F-FLA	-	-	-	Osca
BD FL 70	FLA, Powdered fully degradable FLA for water base fluid used 120 to 350 F	F-FLA	-	-	-	Osca
BDA	Acid plus surfactant to improve cleanup and prevent emulsions	A-AS	-	-	-	Dowell
BE-3	Bacteriacide	F-OGA	-	-	-	Halliburton
BE-3S	Bacteriacide	F-OGA	-	-	-	Halliburton
BE-3S	Biocide	F-OGA	-	-	-	Halliburton
BE-5	Bacteriacide	F-OGA	-	-	-	Halliburton

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
BE-5	Biocide	F-OGA	-	-	-	Halliburton
BE-6	Bacteriacide	F-OGA	-	-	-	Halliburton
BE-6	Biocide	F-OGA	-	-	-	Halliburton
Benzoic acid	100 mesh benzoic acid for acid, water or foam fracturing treatments	A-FL	-	-	-	Nowsco-Fracmaster
Benzoic acid	Flake benzoic acid	A-DA	-	-	-	BJ Services
Benzoic acid	Flake benzoic acid	A-DA	-	-	-	Nowsco-Fracmaster
Benzoic acid	Flake benzoic acid	A-DA	-	-	-	OSCA
Benzoic Aicd Flakes	100 mesh benzoic acid for water, acid or foam fracturing treatments	F-FLA	-	-	-	Fracmaster
BF-3	Buffers (propriety)	F-PCA	-	-	-	BJ Services
BF-7	Buffers (propriety)	F-PCA	-	-	-	BJ Services
BF-8	Strong base	F-PCA	-	-	-	BJ Services
BI 100	H2S corrosion inhibitor	A-CI	-	-	-	Baker Oil Tools
BI 100	H2S inhibitor	A-MP	-	-	-	Baker Oil Tools
BI 352	Multi-purpose completion fluid inhibitor	A-CI	-	-	-	Baker Oil Tools
BI 352	Completion fluid corrosion inhibitor	A-CI	-	-	-	Baker Oil Tools
BI 375	H2S corrsion inhibitor for coiled tubing	A-CI	-	-	-	Baker Oil Tools
BI 395	H2S inhibitor	A-MP	-	-	-	Baker Oil Tools
Bi-carbonate	Powdered weak base	F-PCA	-	-	-	Osca
Binary Foam	N2 and Co2 foam	F-AWS	-	-	-	BJ Services
Binary Foam	N2 and Co2 foam	F-AWS	-	-	-	Dowell
Binary Foam	N2 and Co2 foam	F-AWS	-	-	-	Nowsco Fracmaster
BioClear 1000	Biocide	F-OGA	-	-	-	BJ Services
Boic Acid	Proprietary crosslinking agent. Borate	F-C	-	-	-	BJ Services
Boragel	Crosslinked HPG	F-CGS	-	-	-	Halliburton
Borate	Crosslinked guar system	F-CGS	-	-	-	Dowell
Breaker	Acid breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Osca
Breaker E-2	High pH stable enzyme breaker for high pH frac fluids	F-B	-	-	-	Fracmaster
Breaker E-3	Enzyme breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Fracmaster
Breaker E-3	High pH stable enzyme breaker for high pH frac fluids	F-B	-	-	-	Fracmaster
Breaker E-3	Guar specific enzyme breaker	F-B	-	-	-	Fracmaster
Breaker E-Z	Enzyme breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Fracmaster
Breaker E-Z	Guar specific enzyme breaker	F-B	-	-	-	Fracmaster
Breaker F	Enzyme breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Fracmaster
Breaker F	Enzyme breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Nowsco Fracmaster
Breaker F	Guar specific enzyme breaker	F-B	-	-	-	Fracmaster
Breaker FLC	Enzyme breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Nowsco Fracmaster
Breaker H	Acid breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Nowsco Fracmaster
Breaker MO II	Low temperature oil breaker	F-B	-	-	-	Halliburton
Breaker MO II	Oil breaker. Low Temperature	F-B	-	-	-	Halliburton
Breaker MO-II	Breaker for phosphate ester oil gels	F-B	-	-	-	Halliburton
Breaker N	Oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Nowsco Fracmaster
Breaker ND	Delayed breaker	F-B	-	-	-	Nowsco Fracmaster
Breaker NE	Encapsulated oxidative breaker (140 to 225 F BHT)	F-B	-	-	-	Nowsco Fracmaster
Breaker O	Oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Fracmaster
Breaker P	Acid breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Nowsco Fracmaster
Breaker R	High-temperature oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Fracmaster
Breaker S	Oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Nowsco Fracmaster
BRIC 40	Anti-sludge agent for acid	A-ASA	-	-	-	Halliburton
BRIC 40	Proprietary iron stabilizer	A-IC	-	-	-	Halliburton
BRIC 40	Proprietary formulated to prevent acid sludging	A-AS	-	-	-	Halliburton
BRIC 40	Acid plus iron stabilization	A-AS	-	-	-	Halliburton
BSD	Barium sulfate scale solvent	A-MP	-	-	-	BJ Services
Buffer	Buffers (propriety)	F-PCA	-	-	-	Fracmaster
Buffer 10	Weak organic acid	F-PCA	-	-	-	Fracmaster
Buffer 16X	Buffers (propriety)	F-PCA	-	-	-	Fracmaster
Buffer 17X	Buffers (propriety)	F-PCA	-	-	-	Fracmaster
Buffer E	Buffers (propriety)	F-PCA	-	-	-	Nowsco Fracmaster
Buffer-8	Weak organic acid	F-PCA	-	-	-	Fracmaster
BX	Experimental product	A-MP	-	-	-	Baker Oil Tools
BXL-1W	Proprietary crosslinking agent. Borate	F-C	-	-	-	Nowsco Fracmaster
BXL-4	Proprietary crosslinking agent. Borate	F-C	-	-	-	Nowsco Fracmaster
BXL-7B	Proprietary crosslinking agent. Borate	F-C	-	-	-	Nowsco Fracmaster
C108	Liquid actitivator for phos[hate ester gels	F-OGA	-	-	-	Dowell
C238	Cationic clay stabilizer	F-CS	-	-	-	Dowell
C250	Multi-purpose completion fluid inhibitor	A-CI	-	-	-	San Antonio
C250	Completion fluid corrosion inhibitor	A-CI	-	-	-	OSCA
Calcium bromide brine	Liquid calcium bromide (CaBr)	A-CI	-	-	-	Halliburton
Calcium bromide liquid	Liquid calcium bromide (CaBr)	A-CI	-	-	-	BJ Services
Calcium chloride	Calcium chloride (CaCl)	A-MP	-	-	-	BJ Services
Calcium chloride	Calcium chloride (CaCl)	A-MP	-	-	-	Baker Oil Tools
Calcium chloride	Calcium chloride (CaCl)	A-MP	-	-	-	Halliburton
Calcium chloride	Calcium chloride (CaCl)	A-MP	-	-	-	Nowsco-Fracmaster
Calcium chloride	Calcium chloride (CaCl)	A-MP	-	-	-	OSCA
Calcium chloride	Calcium chloride (CaCl)	A-MP	-	-	-	San Antonio
Calcium chloride	Liquid calcium chloride (CaCL2)	A-CI	-	-	-	Nowsco-Fracmaster
Calcium chloride brine	Liquid calcium chloride (CaCL2)	A-CI	-	-	-	Halliburton
CAT-3	Low temperature breaker activator for persulfates	F-B	-	-	-	Halliburton
CAT-4	Low temperature breaker activator for persulfates	F-B	-	-	-	Halliburton
Cationic N	Cationic nonemulsifier for acid and water	A-NE	-	-	-	Halliburton
Cationic N	Cationic nonemulsifier for water and acid	F-NE	-	-	-	Halliburton
Caustic Soda	Strong base	F-PCA	-	-	-	BJ Services
Caustic Soda	Strong base	F-PCA	-	-	-	Fracmaster
Caustic Soda	Strong base	F-PCA	-	-	-	Nowsco Fracmaster
Caymaster 5C	Cationic clay stabilizer	A-CS	-	-	-	Nowsco-Fracmaster
CC-2	Cationic potassium chloride (KCl) substitute	A-CS	-	-	-	Nowsco-Fracmaster
CC-2	Cationic KCl substitute	F-CS	-	-	-	Fracmaster
CCA-H2S	H2S corrsion inhibitor for coiled tubing	A-CI	-	-	-	Halliburton
CCA-H2S	H2S inhibitor	A-MP	-	-	-	Halliburton
CCAH2S5	H2S corrosion inhibitor	A-CI	-	-	-	Halliburton
CF-1	Foaming agent	F-F	-	-	-	Fracmaster
CF-1	Foaming agent for water and brine	F-F	-	-	-	Nowsco Fracmaster
CF-1	Foaming agent for water and methanol	F-F	-	-	-	Fracmaster
Chemically retarded acid	HCl and chemical retarder mixture	A-RAS	-	-	-	Nowsco-Fracmaster
CI 100	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Baker Oil Tools
CI 104	Inhibitor for formic and acetic acid	A-AI	-	-	-	Baker Oil Tools

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
CI 200	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Baker Oil Tools
CI 200	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	Baker Oil Tools
CI-14	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	BJ Services
CI-20	Inhibitor for formic and acetic acid	A-AI	-	-	-	BJ Services
CI-25	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	BJ Services
CI-25	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	BJ Services
CI-26	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	BJ Services
CI-26	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	BJ Services
CI-27	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	BJ Services
CI-27	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Nowsco-Fracmaster
CI-27	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	BJ Services
CI-30	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Nowsco-Fracmaster
CII 101	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	Baker Oil Tools
CII 107	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	Baker Oil Tools
CI-II	Inhibitor for formic and acetic acid	A-AI	-	-	-	BJ Services
Citric acid	Organic acid powder	A-IC	-	-	-	San Antonio
CL-22	Proprietary crosslinking agent. Borate	F-C	-	-	-	Halliburton
CL-22	Delayed borate crosslinker high temperature	F-C	-	-	-	Halliburton
CL-23	Proprietary crosslinking agent. Zirconium (Zr)	F-C	-	-	-	Halliburton
CL-24	Proprietary crosslinking agent. Zirconium (Zr)	F-C	-	-	-	Halliburton
CL-28E	Delayed borate crosslinker high temperature	F-C	-	-	-	Halliburton
CL-28M	Proprietary crosslinking agent. Borate	F-C	-	-	-	Halliburton
CL-28M	Delayed borate crosslinker high temperature	F-C	-	-	-	Halliburton
CL-29	Proprietary crosslinking agent. Zirconium (Zr)	F-C	-	-	-	Halliburton
CL-31	Proprietary crosslinking agent. Borate	F-C	-	-	-	Halliburton
CL-34	Proprietary crosslinking agent. Zirconium (Zr)	F-C	-	-	-	Halliburton
ClaSta FS	Cationic polymer for stabilizing clays	A-CS	-	-	-	Halliburton
ClaSta FS	HCl and clay control additives	A-AS	-	-	-	Halliburton
ClaSta FS	Cationic polymer for stabilizing clays	F-CS	-	-	-	Halliburton
ClaSta XP	Cationic polymer for stabilizing clays	A-CS	-	-	-	Halliburton
ClaSta XP	Cationic polymer for stabilizing clays	F-CS	-	-	-	Halliburton
Clay acid	Generates mud acid in formation	A-RHF	-	-	-	Dowell
Clay Stab 4	Cationic clay stabilizer	A-CS	-	-	-	San Antonio
Clay Stab-5	Cationic polymer for stabilizing clays	A-CS	-	-	-	San Antonio
Clay T	Cationic potassium chloride (KCl) substitute	A-CS	-	-	-	San Antonio
Clay Treat 3C	Cationic KCl substitute	F-CS	-	-	-	BJ Services
ClayFix II	Cationic potassium chloride (KCl) substitute	A-CS	-	-	-	Halliburton
ClayFix II	Cationic clay stabilizer	A-CS	-	-	-	Halliburton
ClayFix II	Cationic KCl substitute	F-CS	-	-	-	Halliburton
ClayFix II	Cationic clay stabilizer	F-CS	-	-	-	Halliburton
ClayFlx	Ammonium chloride (NHCl)	A-MP	-	-	-	Halliburton
ClayMaster 5 C	Cationic polymer for stabilizing clays	F-CS	-	-	-	BJ Services
ClayMaster 5 C	Cationic clay stabilizer	F-CS	-	-	-	BJ Services
ClayMaster 5 C	Cationic clay stabilizer	F-CS	-	-	-	Nowsco Fracmaster
Claymaster 5C	Cationic polymer for stabilizing clays	A-CS	-	-	-	BJ Services
Claymaster 5C	Cationic polymer for stabilizing clays	A-CS	-	-	-	Nowsco-Fracmaster
Clayset 3	Cationic polymer for stabilizing clays	F-CS	-	-	-	Nowsco Fracmaster
Clayset 4	Cationic potassium chloride (KCl) substitute	A-CS	-	-	-	Nowsco-Fracmaster
Clayset 4	Cationic KCl substitute	F-CS	-	-	-	Nowsco Fracmaster
ClaySol	Generates mud acid in formation	A-RHF	-	-	-	Halliburton
ClayTreat 3C	Cationic potassium chloride (KCl) substitute	A-CS	-	-	-	BJ Services
CLE-28E	Propietary crosslinking agent. Borate	F-C	-	-	-	Halliburton
Clean Plug	CMHEC	F-PP	-	-	-	BJ Services
Clean Plug HT	CMHEC	F-PP	-	-	-	BJ Services
Clean Plug HT	Crosslinked CMHPG	F-PP	-	-	-	BJ Services
Cleanplug	CMHEC	A-PP	-	-	-	BJ Services
Combo Frac	NOWFOAM Followed by gelled fluid	F-OBS	-	-	-	Nowsco Fracmaster
Compounds	Cationic nonemulsifier for acid and water	A-NE	-	-	-	Halliburton
Compounds	Cationic nonemulsifier for water and acid	F-NE	-	-	-	Halliburton
Concentrated	HCl strenghts above 20%	A-AS	-	-	-	Halliburton
Converter	Liquid scale control component	A-MP	-	-	-	San Antonio
Corexit-7647	Scale inhibitor	A-SI	-	-	-	San Antonio
C-O-Two Frac	Water and CO2 foam	F-OBS	-	-	-	Halliburton
CRA acid	HCl and chemical retarder mixture	A-RAS	-	-	-	Halliburton
CRA-78M	HCl and chemical retarder mixture	A-RAS	-	-	-	Halliburton
Crack-chek 97	H2S inhibitor	A-MP	-	-	-	Halliburton
Crak-chek 97	H2S corrosion inhibitor	A-CI	-	-	-	Nowsco-Fracmaster
CRO-1X	Encapsulated oxidative breaker (140 to 225 F BHT)	F-B	-	-	-	Fracmaster
CRO-1X	Encapsulated oxidative breaker (225 to 350 F BHT)	F-B	-	-	-	Fracmaster
CRO-1X	Encapsulated oxidative breaker (BHT < 140F)	F-B	-	-	-	Fracmaster
CRO-1X	Encapsulated oxidative breaker (225 to 400 F BHT)	F-B	-	-	-	Fracmaster
Crosslinked	Crosslinked 100% alcohol system	F-AWS	-	-	-	Fracmaster
Crude Frac	Oil without viscosifier	F-OBS	-	-	-	Nowsco Fracmaster
CS-1	Cationic polymer for stabilizing clays	A-CS	-	-	-	OSCA
CS-1	Cationic clay stabilizer	A-CS	-	-	-	OSCA
CS-1	Cationic KCl substitute	F-CS	-	-	-	Osca
CS2	Cationic polymer for stabilizing clays	A-CS	-	-	-	OSCA
CS-2	Cationic polymer for stabilizing clays	F-CS	-	-	-	Fracmaster
CS-2	Cationic clay stabilizer	F-CS	-	-	-	Fracmaster
CS-3	Cationic clay stabilizer	F-CS	-	-	-	Osca
CS-4	Cationic clay stabilizer	A-CS	-	-	-	Baker Oil Tools
CSA-5LP	Cationic clay stabilizer	F-CS	-	-	-	Nowsco Fracmaster
CSA-6R	Cationic clay stabilizer	F-CS	-	-	-	Nowsco Fracmaster
CSC-3	Cationic polymer for stabilizing clays	A-CS	-	-	-	OSCA
CSC-3	Cationic clay stabilizer	A-CS	-	-	-	Nowsco-Fracmaster
CSC-3	Cationic polymer for stabilizing clays	F-CS	-	-	-	Osca
CSC-6	Cationic clay stabilizer	A-CS	-	-	-	Baker Oil Tools
Custom formulated	Gas well acidizing, low surface tension, fluid cleanup	A-MAA	-	-	-	Halliburton
CW-1	Weak organic acid	F-PCA	-	-	-	Halliburton
CX-1	Organic acid powder	A-IC	-	-	-	OSCA
CX-3	Propietary crosslinking agent. Borate	F-C	-	-	-	Fracmaster

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
CX-4	Propnetary crosslinking agent. Borate	F-C	-	-	-	Fracmaster
CX-5	Propnetary crosslinking agent. Titanium (Ti)	F-C	-	-	-	Fracmaster
CX-9	Propnetary crosslinking agent. Alumium (AL)	F-C	-	-	-	Fracmaster
CXA	Propnetary crosslinking agent. Titanium (Ti)	F-C	-	-	-	Fracmaster
CXB-1	Propnetary crosslinking agent. Borate	F-C	-	-	-	Fracmaster
CXB-2	Propnetary crosslinking agent. Borate	F-C	-	-	-	Fracmaster
CXB-5X	Propnetary crosslinking agent. Borate	F-C	-	-	-	Fracmaster
CXB-5X	Delayed borate crosslinker high temperature	F-C	-	-	-	Fracmaster
CXB-6X	Propnetary crosslinking agent. Borate	F-C	-	-	-	Fracmaster
CXZ-1X	Propnetary crosslinking agent. Zirconium (Zr)	F-C	-	-	-	Fracmaster
D144	Defoamer for aqueous fluids	F-D	-	-	-	Dowell
D-2	Anionic nonemulsifier for oil	A-NE	-	-	-	Nowsco-Fracmaster
D-2	Anionic nonemulsifier for oil, dispersible in water	A-NE	-	-	-	Halliburton
D-2	Anionic nonemuldifier for oil	F-NE	-	-	-	Fracmaster
D-2	Anionic nonemulsifier	F-NE	-	-	-	Fracmaster
D-2	Anionic nonemulsifier for oil and dispersible water	F-NE	-	-	-	Fracmaster
D-2	Anionic nonemulsifier for water and acid	F-NE	-	-	-	Fracmaster
D-3	Nonionic nonemulsifier	A-NE	-	-	-	Nowsco-Fracmaster
D-3	Nonionic nonemulsifier for oil	A-NE	-	-	-	Nowsco-Fracmaster
D-3	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Nowsco-Fracmaster
D-3	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	Nowsco-Fracmaster
D-3	Nonionic nonemulsifier	F-NE	-	-	-	Fracmaster
D-3	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Fracmaster
D47 (cold water)	Defoamer for aqueous fluids	F-D	-	-	-	Dowell
DA 130	Flake benzoic acid	A-DA	-	-	-	Baker Oil Tools
DAD	HCl acid with a dispersed aromatic solvent	A-AS	-	-	-	Dowell
DB-1	Delayed breaker	F-B	-	-	-	Osca
DB-1	Encapsulated oxidative breaker (140 to 225 F BHT)	F-B	-	-	-	Osca
DB-1	Encapsulated oxidative breaker (225 to 350 F BHT)	F-B	-	-	-	Osca
Defoamer	Defoamer for aqueous fluids	F-D	-	-	-	Osca
Defoamer-1	Defoamer for aqueous fluids	F-D	-	-	-	Fracmaster
Defoamer-3	Defoamer for aqueous fluids	F-D	-	-	-	Fracmaster
Defoamer-4	Defoamer for aqueous fluids	F-D	-	-	-	Fracmaster
Delay	Propriety crosslinking control agent	F-C	-	-	-	Osca
Delayed 100	Crosslinked guar system	F-CGS	-	-	-	Dowell
DeltaFrac 140	Crosslinked guar system	F-CGS	-	-	-	Halliburton
DeltaFrac 200	Crosslinked guar system	F-CGS	-	-	-	Halliburton
DF1	Barium sulfate scale solvent	A-MP	-	-	-	Dowell
DGA100	Mixture of HCl and gelling agent	A-RAS	-	-	-	Dowell
DGA200	Mixture of HCl and gelling agent	A-RAS	-	-	-	Dowell
DGA300	Mixture of HCl and gelling agent	A-RAS	-	-	-	Dowell
DGA400	Mixture of HCl and gelling agent	A-RAS	-	-	-	Dowell
Diesel	Diesel, Kerosene or aromatic	A-MP	-	-	-	BJ Services
Diesel	Diesel, Kerosene or aromatic	A-MP	-	-	-	Baker Oil Tools
Diesel	Diesel, Kerosene or aromatic	A-MP	-	-	-	San Antonio
Diesel	Crosslinked HPG with 3 to 5% hydrocarbon for fluid loss	F-CGS	-	-	-	BJ Services
Divert II (Benzoic acid flakes)	100 mesh benzoic acid for water, acid or foam fracturing treatments	F-FLA	-	-	-	BJ Services
Divert II (Benzoic acid flakes)	100 mesh benzoic acid for acid, water or foam fracturing treatments	A-FL	-	-	-	BJ Services
Divert III	Acid fluid loss additives	A-FL	-	-	-	BJ Services
Divert III	Water soluble diverting agent	A-DA	-	-	-	BJ Services
Divert Salt	Water soluble diverting agent	A-DA	-	-	-	Nowsco-Fracmaster
Divert VI	Acid diverting agent	A-DA	-	-	-	BJ Services
Divert X	Acid diverting agent	A-DA	-	-	-	BJ Services
DivertaFrac	Oil prepad with polymer coated sand diverting agent to control downward and water encroachment	F-CGS	-	-	-	Dowell
Diverter Salt	Graded rock salt	A-DA	-	-	-	Nowsco-Fracmaster
DL-22	Anionic nonemulsifier	A-NE	-	-	-	Nowsco-Fracmaster
DL-22	Anionic nonemulsifier for acid and water	A-NE	-	-	-	Nowsco-Fracmaster
DL-22	Anti-sludge agent for acid	A-ASA	-	-	-	Nowsco-Fracmaster
DL-26	Anionic nonemulsifier	A-NE	-	-	-	Nowsco-Fracmaster
DL-26	Anionic nonemulsifier for acid and water	A-NE	-	-	-	Nowsco-Fracmaster
DL-26	Anti-sludge agent for acid	A-ASA	-	-	-	Nowsco-Fracmaster
DL-26	Anionic nonemulsifier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
DM-100	Anti-sludge agent for acid	A-ASA	-	-	-	OSCA
DOC 90	Multi-purpose completion fluid inhibitor	A-CI	-	-	-	Nowsco-Fracmaster
DOC 90	Completion fluid corrosion inhibitor	A-CI	-	-	-	Nowsco-Fracmaster
Dopebuster	Pipe dope removal	A-MP	-	-	-	Halliburton
Double strength Fe acid	Acid plus iron stabilization	A-AS	-	-	-	Halliburton
DRB-10	Delayed breaker	F-B	-	-	-	Nowsco Fracmaster
DRB-10	Encapsulated oxidative breaker (140 to 225 F BHT)	F-B	-	-	-	Nowsco Fracmaster
DSGA (R)	Liquid acid viscosifier	A-WBP	-	-	-	BJ Services
DSGA Liquid	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	BJ Services
DSGA Liquid	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	OSCA
DSGA liquid	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	San Antonio
DuoFrac II	Alternating stages of viscous spearhead acid control (SAC)	A-RAS	-	-	-	Dowell
Dyvert OS	Acid diverting agent	A-DA	-	-	-	Nowsco-Fracmaster
E Series	Experimental product	A-MP	-	-	-	Dowell
E-10	Emulsifier for polyemulsion	F-E	-	-	-	Nowsco Fracmaster
E-12	Emulsifier for polyemulsion	F-E	-	-	-	Nowsco Fracmaster
E-2	Emulsifier for polyemulsion	F-E	-	-	-	BJ Services
E-20	Oil external emulsifier for HCl and HCl organic mixtures	A-E	-	-	-	BJ Services
E-30	Stabilizer for acid emulsion	A-MP	-	-	-	BJ Services
E-30	Emulsifier for polyemulsion	F-E	-	-	-	BJ Services
E-30	Emulsifier for polyemulsion	F-E	-	-	-	Nowsco Fracmaster
EB5-1	Drilling Mud Breaker	F-B	-	-	-	Fracmaster
EB5-2	Drilling Mud Breaker	F-B	-	-	-	Fracmaster
EDTA	EDTA - Sects	A-IC	-	-	-	OSCA
EF-10	Emulsifier for polyemulsion, CO2 emulsions or foams	F-E	-	-	-	Nowsco Fracmaster
EGMBE	Mutual solvent (EGMBE)	A-MS	-	-	-	OSCA
Emulsified acid	Oil external acid internal emulsion	A-RAS	-	-	-	BJ Services
Emulsified acid	Thin acid in oil emulsion that thicknes in high water saturation zone and thins in high oil saturation zone	A-RAS	-	-	-	BJ Services
Enzyme C	Cellulose specific enzyme breaker	F-B	-	-	-	BJ Services
Enzyme C	Cellulose specific enzyme breaker	F-B	-	-	-	Nowsco Fracmaster
Enzyme G	High pH stable enzyme breaker for high pH frac fluids	F-B	-	-	-	Nowsco Fracmaster
Enzyme G	Guar specific enzyme breaker	F-B	-	-	-	BJ Services
Enzyme G	Guar specific enzyme breaker	F-B	-	-	-	Nowsco Fracmaster

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Enzyme S	Stach specific enzyme breaker	F-B	-	-	-	BJ Services
Enzyme S	Stach specific enzyme breaker	F-B	-	-	-	Nowsco Fracmaster
Enzyme X	Xanthan specific enzyme breaker	F-B	-	-	-	BJ Services
Enzyme X	Xanthan specific enzyme breaker	F-B	-	-	-	Nowsco Fracmaster
EP 400	Nonionic surfactant and nonemulsifier for water and acid	F-NE	-	-	-	Osca
EP 600	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Osca
EP 700	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Osca
EP 700	Microemulsion surfactnat	F-NE	-	-	-	Osca
EP-400	Cationic surfactant for acid or water	A-NE	-	-	-	OSCA
EP-400	Nonionic nonemulsifier for oil	A-NE	-	-	-	OSCA
EP-400	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	OSCA
EP-400	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	OSCA
EP-500	Cationic nonemulsifier for acid and water	A-NE	-	-	-	OSCA
EP-700	Cationic surfactant for acid or water	A-NE	-	-	-	OSCA
EP-700	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	OSCA
EP-800	Cationic surfactant for acid or water	A-NE	-	-	-	OSCA
EP-800	Nonionic nonemulsifier for oil	A-NE	-	-	-	OSCA
EP-800	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	OSCA
EP-800	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	OSCA
EX	Experimental product	A-MP	-	-	-	BJ Services
EZ-Breaker -Z	High pH stable enzyme breaker for high pH frac fluids	F-B	-	-	-	Osca
EZClean	Gel breaker and filter cake degrader. Treatment follows water base fracturing fluids. (80 to 270F BHT)	F-B	-	-	-	BJ Services
EZClean	Gel breaker and filter cake degrader. Treatment follows water base fracturing fluids. (80 to 270F BHT)	F-B	-	-	-	Nowsco Fracmaster
F 104	Foaming agent	A-F	-	-	-	Dowell
F100	Foaming agent	A-F	-	-	-	Dowell
F100	Nonionic fluorosurfactant for water and acid systems	F-S	-	-	-	Dowell
F-100	Liquid friction reducer for hydrocarbons	A-FR	-	-	-	Nowsco-Fracmaster
F-100	Cationic surfactant for acid or water	A-S	-	-	-	Dowell
F-100	Liquid friction reducer for hydrocarbons	F-FR	-	-	-	Nowsco Fracmaster
F101	Foaming agent	A-F	-	-	-	Dowell
F103	nonionic fluorosurfactant for acid or water	A-S	-	-	-	Dowell
F103	Nonionic surfactant for acid or water	A-S	-	-	-	Dowell
F104	Foaming agent	F-F	-	-	-	Dowell
F104	Foaming agent for water and brine	F-F	-	-	-	Dowell
F38	Nonionic nonemulsifier	F-NE	-	-	-	Dowell
F40	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Dowell
F40	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	Dowell
F40	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Dowell
F40	Nonionic surfactant and nonemulsifier for water and acid	F-NE	-	-	-	Dowell
F52.1	Foaming agent	A-F	-	-	-	Dowell
F52.1 (water brine, acid)	Foaming agent for water and brine	A-F	-	-	-	Dowell
F521	Foaming agent	F-F	-	-	-	Dowell
F521 (water, brine and acid)	Foaming agent for water and brine	F-F	-	-	-	Dowell
F-568	Liquid cationic polyacrylamide for acids, brines and fresh water	F-FR	-	-	-	Nowsco Fracmaster
F-659	Liquid anionic polyacrylamide for water	F-FR	-	-	-	Nowsco Fracmaster
F-660	Liquid anionic polyacrylamide for acids	A-FR	-	-	-	Nowsco-Fracmaster
F75N	nonionic fluorosurfactant for acid or water	A-S	-	-	-	Dowell
F75N	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Dowell
F75N	Nonionic fluorosurfactant for acid and water	A-NE	-	-	-	Dowell
F75N	Nonionic fluorosurfactant for water and acid systems	F-S	-	-	-	Dowell
F75N	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Dowell
F-75N	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Dowell
F78	Cationic nonemulsifier for acid and water	A-FS	-	-	-	Dowell
F-78	Cationic fluorosurfactant for acid or water	A-S	-	-	-	Dowell
F-78	Foaming agent	F-F	-	-	-	Dowell
F78 (foamer and fines suspender)	Foaming agent for acid and water	A-F	-	-	-	Dowell
F78 (foamer and fines suspender)	Foaming agent for water and acids	F-F	-	-	-	Dowell
F801	Foaming agent	A-F	-	-	-	Dowell
F98	Oil wetting surfactant for limestone reservoirs and moderate temperature	A-AR	-	-	-	Dowell
F98	Oil wetting surfactant for linestone reservoirs and high temperature	A-AR	-	-	-	Dowell
FAI-250	Inhibitor for formic and acetic acid	A-AI	-	-	-	Nowsco-Fracmaster
FAO-25	Foamer for hydrocarbons	A-F	-	-	-	BJ Services
FAO-25	Foaming agent for oil and condensates	A-F	-	-	-	BJ Services
FAO-25	Foaming agent for oil and condensate	F-F	-	-	-	BJ Services
FAQ-25	Foaming agent for hydrocarbons	F-F	-	-	-	BJ Services
FAW 23	Foaming agent for water and brine	A-F	-	-	-	BJ Services
FAW-1	Foaming agent for water and brine	A-F	-	-	-	BJ Services
FAW-1	Foaming agent for acid and water	A-F	-	-	-	BJ Services
FAW-1	Foaming agent for water and methanol	A-F	-	-	-	BJ Services
FAW-1	Foaming agent	F-F	-	-	-	BJ Services
FAW-1	Foaming agent for water and acids	F-F	-	-	-	BJ Services
FAW-1	Foaming agent	A-F	-	-	-	BJ Services
FAW-18W	Anti-sludge agent for acid	A-ASA	-	-	-	BJ Services
FAW-18W	Foaming agent	A-F	-	-	-	BJ Services
FAW-18W	Foaming agent for water and brine	A-F	-	-	-	BJ Services
FAW-18W	Foaming agent	F-F	-	-	-	BJ Services
FAW-18W	Foaming agent for water and brine	F-F	-	-	-	BJ Services
FAW-19A	Foaming agent	A-F	-	-	-	BJ Services
FAW-19A	Foaming agent for 100% methanol and methanol water mixtures	A-F	-	-	-	BJ Services
FAW-20	Foaming agent	A-F	-	-	-	BJ Services
FAW-20	Foaming agent for water and brine	A-F	-	-	-	BJ Services
FAW-20	Foaming agent for water and methanol	A-F	-	-	-	BJ Services
FAW-20	Foaming agent	F-F	-	-	-	BJ Services
FAW-20	Foaming agent for water and brine	F-F	-	-	-	BJ Services
FAW-20	Foaming agent for water and acids	F-F	-	-	-	BJ Services
FAW-21	Foaming agent	A-F	-	-	-	BJ Services
FAW-21	Foaming agent for acid and water	A-F	-	-	-	BJ Services
FAW-21	Foaming agent	F-F	-	-	-	BJ Services
FAW-21	Foaming agent for water and acids	F-F	-	-	-	BJ Services
FAW-22	Foaming agent	F-F	-	-	-	BJ Services
FAW-22	Foaming agent for water and brine	F-F	-	-	-	BJ Services
FAW-4	Foaming agent	A-F	-	-	-	BJ Services
FAW-4	Foaming agent for water and brine	A-F	-	-	-	BJ Services
FAW-4	Foaming agent	F-F	-	-	-	BJ Services

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
FAW-4	Foaming agent for water and brine	F-F	-	-	-	BJ Services
FC-100	nonionic fluorosurfactant for acid or water	A-S	-	-	-	OSCA
FC-100	Nonionic fluorosurfactant for acid and water	A-NE	-	-	-	OSCA
FC-100	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Osca
FC-100	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Osca
FDP	Experimental product	A-MP	-	-	-	Halliburton
FE 120	Organic acid powder	A-IC	-	-	-	Baker Oil Tools
FE 120L	Organic acid liquid	A-IC	-	-	-	Baker Oil Tools
FE 123	Organic acid powder	A-IC	-	-	-	Baker Oil Tools
FE 123L	Organic acid liquid	A-IC	-	-	-	Baker Oil Tools
FE 124	Proprietary iron stabilizer	A-IC	-	-	-	Baker Oil Tools
FE 124L	Proprietary iron stabilizer	A-IC	-	-	-	Baker Oil Tools
FE 300	Proprietary iron stabilizer	A-IC	-	-	-	Baker Oil Tools
FE-1A	Organic acid liquid	A-IC	-	-	-	Halliburton
FE-2	Organic acid powder	A-IC	-	-	-	Halliburton
FE-3	Proprietary iron stabilizer	A-IC	-	-	-	Halliburton
FE-300	Powdered oxygen scavenger	A-OS	-	-	-	Baker Oil Tools
FE-328	Powdered oxygen scavenger	A-OS	-	-	-	Baker Oil Tools
FE-3A	Proprietary iron stabilizer	A-IC	-	-	-	Halliburton
FE-4	Formic acetic	A-RAS	-	-	-	Halliburton
FE-5A	Proprietary iron stabilizer	A-IC	-	-	-	Halliburton
Ferchek	Powdered oxygen scavenger	A-OS	-	-	-	Halliburton
Ferchek	Proprietary iron stabilizer	A-IC	-	-	-	Halliburton
Ferchek A	Proprietary iron stabilizer	A-IC	-	-	-	Halliburton
Ferchek A	Powdered oxygen scavenger	A-OS	-	-	-	Halliburton
Ferchek SC	Proprietary iron stabilizer	A-IC	-	-	-	Halliburton
Ferchek SC	Proprietary formulated to prevent acid sludging	A-AS	-	-	-	Halliburton
Ferchek SC	Acid plus iron stabilization	A-AS	-	-	-	Halliburton
Ferratrol 300	Acid breaker for guar, guar and cellulose derivatives	F-B	-	-	-	BJ Services
Ferriquest 400	Proprietary iron stabilizer	A-IC	-	-	-	OSCA
Ferrotrol 1000	EDTA - Sects	A-IC	-	-	-	BJ Services
Ferrotrol 200	Proprietary iron stabilizer	A-IC	-	-	-	BJ Services
Ferrotrol 200	Powdered oxygen scavenger	A-OS	-	-	-	BJ Services
Ferrotrol 210	Proprietary iron stabilizer	A-IC	-	-	-	BJ Services
Ferrotrol 210	Powdered oxygen scavenger	A-OS	-	-	-	BJ Services
Ferrotrol 260L	Proprietary iron stabilizer	A-IC	-	-	-	BJ Services
Ferrotrol 260L	Powdered oxygen scavenger	A-OS	-	-	-	BJ Services
Ferrotrol 270	Proprietary iron stabilizer	A-IC	-	-	-	BJ Services
Ferrotrol 270	Powdered oxygen scavenger	A-OS	-	-	-	BJ Services
Ferrotrol 271	Proprietary iron stabilizer	A-IC	-	-	-	BJ Services
Ferrotrol 272	Proprietary iron stabilizer	A-IC	-	-	-	BJ Services
Ferrotrol 272	Powdered oxygen scavenger	A-OS	-	-	-	BJ Services
Ferrotrol 273	Proprietary iron stabilizer	A-IC	-	-	-	BJ Services
Ferrotrol 300	Organic acid powder	A-IC	-	-	-	BJ Services
Ferrotrol 300	Weak organic acid	F-PCA	-	-	-	BJ Services
Ferrotrol 300L	Organic acid liquid	A-IC	-	-	-	BJ Services
Ferrotrol 300L	Weak organic acid	F-PCA	-	-	-	BJ Services
Ferrotrol 800	Proprietary iron stabilizer	A-IC	-	-	-	BJ Services
Ferrotrol 810	Organic acid powder	A-IC	-	-	-	BJ Services
Ferrotrol 810	Proprietary iron stabilizer	A-IC	-	-	-	BJ Services
Ferrotrol 900	EDTA - Sects	A-IC	-	-	-	BJ Services
Ferrotrol 900	Proprietary iron stabilizer	A-IC	-	-	-	BJ Services
Ferrotrol 900L	EDTA - Sects	A-IC	-	-	-	BJ Services
Ferrotrol 900L	Proprietary iron stabilizer	A-IC	-	-	-	BJ Services
Ferrotrol HS Acid	Specialty acid for sour gas wells	A-RAS	-	-	-	BJ Services
Ferrotrol-260L	Proprietary iron stabilizer	A-IC	-	-	-	Nowsco-Fracmaster
Ferrrotrol 271	Powdered oxygen scavenger	A-OS	-	-	-	BJ Services
Ferrrotrol 273	Powdered oxygen scavenger	A-OS	-	-	-	BJ Services
F-Flow	Anionic nonemulsifier for oil	A-NE	-	-	-	BJ Services
FL-100	100 mesh oil soluble resin for acid and water	A-FL	-	-	-	San Antonio
FL-60	Fully degradable FLA in diesel slurry for water base fluids at 120 to 350 F	F-FLA	-	-	-	Nowsco Fracmaster
FLA100	100 mesh sand for acid, water and oil	A-FL	-	-	-	Dowell
FLA100	100 mesh sand for use in water, oil and acid	F-FLA	-	-	-	Dowell
FLA10005	100 mesh oil soluble resin for acid and water	A-FL	-	-	-	Dowell
FLA10005	100 mesh oil soluble resin in water and acid	F-FLA	-	-	-	Dowell
FLA-20	Selectively graded fine mesh silica flour for water, oil and acid	F-FLA	-	-	-	Nowsco Fracmaster
FLA-50	Liquid FLA for use in oil wells with water base fluids from 80 to 300F (diesel or other hydrocarbon)	F-FLA	-	-	-	Nowsco Fracmaster
FLC 41	FLA, Powdered fully degradable FLA for water base fluid used 120 to 350 F	F-FLA	-	-	-	BJ Services
FLC 5	FLA, Powdered fully degradable FLA for water base fluid used 120 to 350 F	F-FLA	-	-	-	BJ Services
FLC-15	Proprietary liquid fluid loss solution	F-FLA	-	-	-	BJ Services
FLC-17	Proprietary liquid fluid loss solution	F-FLA	-	-	-	BJ Services
FLC-18	FLA-Acid	F-FLA	-	-	-	BJ Services
FLC-2	100 mesh oil soluble resin in water and acid	F-FLA	-	-	-	BJ Services
FLD ID	Liquid FLA for use in oil wells with water base fluids from 80 to 300F (diesel or other hydrocarbon)	F-FLA	-	-	-	Halliburton
FLD IX	Liquid FLA for use in oil wells with water base fluids from 80 to 300F (diesel or other hydrocarbon)	F-FLA	-	-	-	Halliburton
FLD-1	Proprietary liquid fluid loss solution	F-FLA	-	-	-	Halliburton
FLO-1	100 mesh oil soluble resin in water and acid	F-FLA	-	-	-	Fracmaster
FloBack 20	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	BJ Services
FloBack 30	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	BJ Services
Fluoroboric acid	Generates mud acid in formation	A-RHF	-	-	-	Baker Oil Tools
Foamed acid	Acid and N2 foam	F-OBS	-	-	-	Nowsco Fracmaster
Foamed hydrocarbon frac	Hydrocarbon and N2 foam	F-OBS	-	-	-	Nowsco Fracmaster
FoamFrac	Water N2 foam with or without gel	F-OBS	-	-	-	Dowell
FoamFrac	Water N2 foam with or without gel	F-OBS	-	-	-	Halliburton
FoamFrac	Water N2 foam with or without gel	F-OBS	-	-	-	Nowsco Fracmaster
Foaming agent for acid	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	Halliburton
Foamic acid	Synergistic additive for extending inhibition times at elevated temperature	F-PCA	-	-	-	Nowsco Fracmaster
Foamic acid	Synergistic additive for extending inhibition times at elevated temperature	F-PCA	-	-	-	Osca
Formic acetic	Formic acetic	A-RAS	-	-	-	BJ Services

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Formic acetic	Formic acetic	A-RAS	-	-	-	Halliburton
Formic Acid	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	San Antonio
Formic acid	Organic acid liquid	A-IC	-	-	-	BJ Services
Formic acid	Organic acid liquid	A-IC	-	-	-	Halliburton
Formic acid	Organic acid liquid	A-IC	-	-	-	Nowsco-Fracmaster
Formic acid	Organic acid liquid	A-IC	-	-	-	OSCA
Formic acid	Organic acid	A-MP	-	-	-	Baker Oil Tools
Formic acid	Organic acid	A-MP	-	-	-	Nowsco-Fracmaster
Formic acid	Organic acid	A-MP	-	-	-	OSCA
Formic acid	Organic acid	A-MP	-	-	-	San Antonio
Formic acid	Organic acid (formic and/or acetic)	A-AS	-	-	-	BJ Services
Formic acid	Organic acid (formic and/or acetic)	A-AS	-	-	-	Baker Oil Tools
Formic acid	Organic acid (formic and/or acetic)	A-AS	-	-	-	Halliburton
Formic acid	Organic acid (formic and/or acetic)	A-AS	-	-	-	Nowsco-Fracmaster
Formic acid	Organic acid (formic and/or acetic)	A-AS	-	-	-	OSCA
Formic acid	Synergistic additive for extending inhibition times at elevated temperature	F-PCA	-	-	-	Fracmaster
Formic acid	Synergistic additive for extending inhibition times at elevated temperature	F-PCA	-	-	-	Halliburton
Formic/Acetic	Formic acetic	A-RAS	-	-	-	OSCA
FR-19	Liquid friction reducer for hydrocarbons	A-FR	-	-	-	BJ Services
FR-200	Liquid cationic polyacrylamide for acids	A-FR	-	-	-	OSCA
FR-200	Liquid cationic polyacrylamide for acids, brines and fresh water	F-FR	-	-	-	Osca
FR-26LC	Liquid anionic polyacrylamide for water	F-FR	-	-	-	Halliburton
FR-28LC	Liquid cationic polyacrylamide for acids	A-FR	-	-	-	Halliburton
FR-28LC	Liquid cationic polyacrylamide for acids, brines and fresh water	F-FR	-	-	-	Halliburton
FR-300	Liquid anionic polyacrylamide for water	F-FR	-	-	-	Osca
FR-400	Liquid anionic polyacrylamide for acids	A-FR	-	-	-	OSCA
FR-5	Liquid friction reducer for hydrocarbons	A-FR	-	-	-	Halliburton
FR-5	Liquid friction reducer for hydrocarbons	F-FR	-	-	-	Halliburton
FRA-1	Liquid cationic polyacrylamide for acids, brines and fresh water	F-FR	-	-	-	Fracmaster
Frac K1X	Acid external emulsion with gelling agents in acid	A-RAS	-	-	-	Dowell
Fraccide 11	Bacteriacide	F-OGA	-	-	-	BJ Services
Fracgel	Crosslinked guar system	F-CGS	-	-	-	Halliburton
FracGel HT	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Halliburton
FraSeal	100 mesh oil soluble resin in water and acid	F-FLA	-	-	-	BJ Services
FraSeal M	100 mesh oil soluble resin in water and acid	F-FLA	-	-	-	BJ Services
FRO-1	Liquid friction reducer for hydrocarbons	F-FR	-	-	-	Fracmaster
FRO-18	Liquid friction reducer for hydrocarbons	A-FR	-	-	-	BJ Services
FRO-18	Liquid friction reducer for hydrocarbons	F-FR	-	-	-	BJ Services
FRW-14	Liquid anionic polyacrylamide for acids	A-FR	-	-	-	BJ Services
FRW-14	Liquid anionic polyacrylamide for water	F-FR	-	-	-	BJ Services
FRW-14	Liquid anionic polyacrylamide for water	F-FR	-	-	-	Nowsco Fracmaster
FRW-15	Liquid anionic polyacrylamide for water	F-FR	-	-	-	BJ Services
FRW-15	Liquid anionic polyacrylamide for water	F-FR	-	-	-	Nowsco Fracmaster
FRW-15 (water or brine)	Liquid anionic polyacrylamide for acids	A-FR	-	-	-	BJ Services
FRW-2	Liquid anionic polyacrylamide for water	F-FR	-	-	-	Fracmaster
Fumaric Acid	Weak organic acid	F-PCA	-	-	-	Nowsco Fracmaster
G*	Foaming agent for oil and condensate	F-F	-	-	-	Dowell
G8	Foaming agent for oil and condensates	A-F	-	-	-	Dowell
GA-15	Powdered xanthate polyner for viscosifying 15 % or less hydrochloric	A-WBP	-	-	-	San Antonio
Gas well acid	Proprietary formulated to prevent acid sludging	A-AS	-	-	-	Dowell
Gas well mud acid	Gas well acidizing, low surface tension, fluid cleanup	A-MAA	-	-	-	Dowell
Gas zone acid	Acid plus surfactant to improve cleanup and prevent emulsions	A-AS	-	-	-	BJ Services
Gas zone acid	Acid and alcohol mixture	A-AS	-	-	-	BJ Services
Gas zone acid	Gas well acidizing, low surface tension, fluid cleanup	A-MAA	-	-	-	BJ Services
GB-1	Oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Osca
GBA-2	Breaker for Crosslinked Acid	F-B	-	-	-	BJ Services
GBO-5L	Low temperature oil breaker	F-B	-	-	-	BJ Services
GBO-5L	Low temperature oil breaker	F-B	-	-	-	Nowsco Fracmaster
GBO-5L	Breaker for phosphate ester oil gels	F-B	-	-	-	BJ Services
GBO-5L	Breaker for phosphate ester oil gels	F-B	-	-	-	Nowsco Fracmaster
GBO-5L	Oil breaker, Low Temperature	F-B	-	-	-	BJ Services
GBO-5L	Oil breaker, Low Temperature	F-B	-	-	-	Nowsco Fracmaster
GBO-5L	Oil breaker, Low Temperature	F-B	-	-	-	BJ Services
GBO-5L	Oil breaker, Low Temperature	F-B	-	-	-	Nowsco Fracmaster
GBO-6	Encapsulated enzyme breaker	F-B	-	-	-	Nowsco Fracmaster
GBO-6	Breaker for phosphate ester oil gels	F-B	-	-	-	BJ Services
GBO-6	Oil breaker, Low Temperature	F-B	-	-	-	BJ Services
GBO-6	Oil breaker, Low Temperature	F-B	-	-	-	Nowsco Fracmaster
GBW-10	Enzyme breaker for guar, guar and cellulose derivatives	F-B	-	-	-	BJ Services
GBW-10	Enzyme breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Nowsco Fracmaster
GBW-15 Enzyme G	High pH stable enzyme breaker for high pH frac fluids	F-B	-	-	-	BJ Services
GBW-23	High-temperature oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	BJ Services
GBW-23	High-temperature oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Nowsco Fracmaster
GBW-23	Delayed breaker	F-B	-	-	-	BJ Services
GBW-23	Delayed breaker	F-B	-	-	-	Nowsco Fracmaster
GBW-23	Encapsulated oxidative breaker (140 to 225 F BHT)	F-B	-	-	-	Nowsco Fracmaster
GBW-23L	High-temperature oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	BJ Services
GBW-24	High-temperature oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	BJ Services
GBW-24	High-temperature oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Nowsco Fracmaster
GBW-24	Delayed breaker	F-B	-	-	-	BJ Services
GBW-24	Delayed breaker	F-B	-	-	-	Nowsco Fracmaster
GBW-24	Encapsulated oxidative breaker (140 to 225 F BHT)	F-B	-	-	-	Nowsco Fracmaster
GBW-24L	High-temperature oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	BJ Services
GBW-3	Guar specific enzyme breaker	F-B	-	-	-	Halliburton
GBW-30	Enzyme breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Halliburton
GBW-30	Guar specific enzyme breaker	F-B	-	-	-	Halliburton
GBW-30	Cellulose specific enzyme breaker	F-B	-	-	-	Halliburton
GBW-33D	High pH stable enzyme breaker for high pH frac fluids	F-B	-	-	-	BJ Services
GBW-40	Internal breaker for xanthan gelled carrier fluid	F-B	-	-	-	Halliburton

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
GBW-5	Oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	BJ Services
GBW-5	Oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Nowsco Fracmaster
GBW-7	Internal breaker for xanthan gelled carrier fluid	F-B	-	-	-	BJ Services
GC-1	HPG gum in oil base slurry	F-WBP	-	-	-	Osca
GC-1	HPG in mineral oil slurry	F-CMG	-	-	-	Osca
GC-2	Guar gum in oil base slurry	F-WBP	-	-	-	Osca
GC-2	Guar in mineral oil slurry	F-CMG	-	-	-	Osca
Gelled acid	Mixture of HCl and gelling agent	A-RAS	-	-	-	San Antonio
Gelled acid (gelled weak acid)	Mixture of HCl and gelling agent	A-RAS	-	-	-	Nowsco-Fracmaster
Gelled water	Gelled water	F-WBG	-	-	-	BJ Services
Gelled water plus fluid loss (FLA)	Gelled water with FLA	F-WBG	-	-	-	BJ Services
Gelmax A 50	Hydrxyethylcellulose (HEC) system, linear or crosslinked	A-PP	-	-	-	San Antonio
Gelmax A 50	Crosslinked guar or hydroxypropylguar	A-PP	-	-	-	San Antonio
GelSta	Powdered stabilizer for high temperatures	F-GS	-	-	-	Halliburton
Gel-Sta-L	Liquid stabilizer for high temperatures	F-GS	-	-	-	Halliburton
GM-55	Chemically modified natural polymer for gelling up to 80% methanol	A-WBP	-	-	-	BJ Services
GM-55	Chemically modified natural polymer for gelling up to 80% methanol	A-WBP	-	-	-	Nowsco-Fracmaster
GM-55	Chemically modified natural polymer for gelling up to 100% methanol	A-WBP	-	-	-	BJ Services
GM-55	Chemically modified natural polymer for gelling up to 100% methanol	A-WBP	-	-	-	Nowsco-Fracmaster
GM-55	Viscosifier for pure methanol	A-MP	-	-	-	BJ Services
Gm-55	Viscosifier for pure methanol	A-MP	-	-	-	Nowsco-Fracmaster
GO-53	Liquid viscosifier for phosphate ester gels	F-OGA	-	-	-	BJ Services
GO-63	Liquid viscosifier for phosphate ester gels	F-OGA	-	-	-	BJ Services
GO-63	High temperature oil gelling agent	F-OGA	-	-	-	BJ Services
GO-64	Liquid viscosifier for phosphate ester gels	F-OGA	-	-	-	BJ Services
GO-64	Liquid viscosifier for phosphate ester gels	F-OGA	-	-	-	Nowsco Fracmaster
GO-64	High temperature oil gelling agent	F-OGA	-	-	-	BJ Services
GO-64	High temperature oil gelling agent	F-OGA	-	-	-	Nowsco Fracmaster
GS-1	Powdered stabilizer for high temperatures	F-GS	-	-	-	Nowsco Fracmaster
GS-1	Powdered stabilizer for high temperatures	F-GS	-	-	-	Osca
GS-1A	Powdered stabilizer for high temperatures	F-GS	-	-	-	BJ Services
GS-1A	Powdered stabilizer for high temperatures	F-GS	-	-	-	Nowsco Fracmaster
GS-1L	Powdered stabilizer for high temperatures	F-GS	-	-	-	BJ Services
GS-6	Powdered stabilizer for high temperatures	F-GS	-	-	-	BJ Services
GS-7	Powdered stabilizer for high temperatures	F-GS	-	-	-	BJ Services
GW-21	Powdered hydroxyethylcellulose viscosifier	F-WBP	-	-	-	BJ Services
GW-21	Powdered hydroxyethylcellulose viscosifier	F-WBP	-	-	-	Nowsco Fracmaster
GW-21	No residue gelled water (HEC)	F-WBG	-	-	-	BJ Services
GW-21	No residue gelled water (HEC)	F-WBG	-	-	-	Nowsco Fracmaster
GW-22	Powdered xanthate polyner for viscosifying 15 % or less hydrochlonic	A-WBP	-	-	-	BJ Services
GW-22	Powdered xanthan gum gelling agents as carrier fluid for gravel packs	F-WBP	-	-	-	BJ Services
GW-27	Powdered guar gum polymer, delayed hydration for batch mix:	F-WBP	-	-	-	BJ Services
GW-27	Powdered guar gum polymer, delayed hydration for batch mix:	F-WBP	-	-	-	Nowsco Fracmaster
GW-28	Powdered carboxymethylhydroxethylcellulose viscosifier, Rapid hydration for batch and continuous mix	F-WBP	-	-	-	BJ Services
GW-28	Powdered carboxymethylhydroxethylcellulose viscosifier, Rapid hydration for batch and continuous mix	F-WBP	-	-	-	Nowsco Fracmaster
GW-32	Powdered hydroxypropylguar gum, delayed hydration polymer, for batch mix. No internal breaker	F-WBP	-	-	-	BJ Services
GW-32	Powdered hydroxypropylguar gum, delayed hydration polymer, for batch mix. No internal breaker	F-WBP	-	-	-	Nowsco Fracmaster
GW-32	Powdered HOG for oil base slurry	F-WBP	-	-	-	BJ Services
GW-32	Powdered HOG for oil base slurry	F-WBP	-	-	-	Nowsco Fracmaster
GW-32	Low residue gelled water (HPG)	F-WBG	-	-	-	BJ Services
GW-32	Low residue gelled water (HPG)	F-WBG	-	-	-	Nowsco Fracmaster
GW-38	Powdered CMHPG for oil base slurry	F-WBP	-	-	-	BJ Services
GW-38	Powdered CMHPG for oil base slurry	F-WBP	-	-	-	Nowsco Fracmaster
GW-38	High yield CMHPG (Slurrible)	F-WBP	-	-	-	BJ Services
GW-38	High yield CMHPG (Slurrible)	F-WBP	-	-	-	Nowsco Fracmaster
GW-38	Chemically modified natural polymer CMHPG	F-WBP	-	-	-	BJ Services
GW-38	Chemically modified natural polymer CMHPG	F-WBP	-	-	-	Nowsco Fracmaster
GW-4	Powdered guar gum polymer. Rapid hydration for use in oil base slurrys	F-WBP	-	-	-	BJ Services
GW-4	Powdered guar gum polymer. Rapid hydration for use in oil base slurrys	F-WBP	-	-	-	Nowsco Fracmaster
Gypban	Liquid scale control component	A-MP	-	-	-	Dowell
HAI-05	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Halliburton
HAI-05	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	Halliburton
HAI-25	HCl inhibitor for water wells to 120F BHT	A-AI	-	-	-	Halliburton
HAI-81M	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Halliburton
HAI-81M	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	Halliburton
HAI-85M	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	Halliburton
HAI-85M (400F)	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	Halliburton
HC-2	Emulsifier for polyemulsion, CO2 emulsions or foams	F-E	-	-	-	Halliburton
HC-2	Foaming agent	F-F	-	-	-	Halliburton
HC-2M	Fines suspending agent for acid	A-FS	-	-	-	Halliburton
HC-2M	Foaming agent	A-F	-	-	-	Halliburton
HC-2m	Acid plus surfactant and fines suspender to improve cleanup	A-AS	-	-	-	Halliburton
HCl	32 % HCl	A-MP	-	-	-	BJ Services
HCl	32 % HCl	A-MP	-	-	-	Baker Oil Tools
HCl	32 % HCl	A-MP	-	-	-	Dowell
HCl	32 % HCl	A-MP	-	-	-	Halliburton
HCl	32 % HCl	A-MP	-	-	-	Nowsco-Fracmaster
HCl	32 % HCl	A-MP	-	-	-	OSCA
HCl acetic	HCl and acetic acid mixture	A-RAS	-	-	-	OSCA
HCl acetic blends	HCl and acetic acid mixture	A-RAS	-	-	-	Nowsco-Fracmaster
HCl acid and acid blends	Acid plus surfactant to improve cleanup and prevent emulsions	A-AS	-	-	-	Nowsco-Fracmaster
HCl formic blends	HCl and formic acid mixture	A-RAS	-	-	-	Nowsco-Fracmaster
HCl or HCL/HF	Fines removal acid with iron stabilization	A-AS	-	-	-	BJ Services
HCl/Formic	HCl and formic acid mixture	A-RAS	-	-	-	OSCA
HCl + additives	HCl acid with surfactants to disperse and suspend mud and fines	A-AS	-	-	-	Nowsco-Fracmaster
HCl and water	Non-standard HCl	A-MP	-	-	-	BJ Services
HCl and water	Non-standard HCl	A-MP	-	-	-	Baker Oil Tools
HCl and water	Non-standard HCl	A-MP	-	-	-	Dowell

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
HCl and water	Non-standard HCl	A-MP	-	-	-	Halliburton
HCl and water	Non-standard HCl	A-MP	-	-	-	Nowsco-Fracmaster
HCl and water	Non-standard HCl	A-MP	-	-	-	OSCA
HCl and water	Non-standard HCl	A-MP	-	-	-	San Antonio
HD10-80	Nonionic nonemulsifier for oil	F-NE	-	-	-	Nowsco Fracmaster
HD10-80	Anionic nonemuldifier for oil	F-NE	-	-	-	Nowsco Fracmaster
HD10-90	Nonionic nonemulsifier for oil	A-NE	-	-	-	Nowsco-Fracmaster
High Perm CRE	Encapsulated enzyme breaker	F-B	-	-	-	Nowsco Fracmaster
HighPerm CRB	Encapsulated oxidative breaker (140 to 225 F BHT)	F-B	-	-	-	BJ Services
HighPerm CRB	Encapsulated oxidative breaker (225 to 350 F BHT)	F-B	-	-	-	BJ Services
HighPerm CRB	Encapsulated oxidative breaker (225 to 350 F BHT)	F-B	-	-	-	Nowsco Fracmaster
HighPerm CRB	Encapsulated oxidative breaker (BHT < 140F)	F-B	-	-	-	BJ Services
HighPerm CRB-LT	Encapsulated oxidative breaker (BHT < 140F)	F-B	-	-	-	Nowsco Fracmaster
High-tempblocking gel	Crosslinked CMHPG	A-PP	-	-	-	BJ Services
Hill-124B	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	Halliburton
Hill-124C	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	Halliburton
Hill-124F	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	Halliburton
Hill-500	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	Halliburton
HiTemp	HCl and chemical retarder mixture	A-RAS	-	-	-	BJ Services
HL breaker	Low temperature oil breaker	F-B	-	-	-	Halliburton
HL breaker	Breaker for phosphate ester oil gels	F-B	-	-	-	Halliburton
HL breaker	Oil breaker. Low Temperature	F-B	-	-	-	Halliburton
HLFC-2	HPG gum in oil base slurry	F-WBP	-	-	-	BJ Services
Howco suds	Foaming agent	A-F	-	-	-	Halliburton
HPH	High pH stable enzyme breaker for high pH frac fluids	F-B	-	-	-	Halliburton
HPH	Guar specific enzyme breaker	F-B	-	-	-	Halliburton
HS-2	H2S corrsion inhibitor for coiled tubing	A-CI	-	-	-	BJ Services
HS-2	H2S corrsion inhibitor for coiled tubing	A-CI	-	-	-	Nowsco-Fracmaster
HS-2	H2S corrosion inhibitor	A-CI	-	-	-	BJ Services
HS-2	H2S corrosion inhibitor	A-CI	-	-	-	Halliburton
HS-2	H2S inhibitor	A-MP	-	-	-	BJ Services
HS-2	H2S inhibitor	A-MP	-	-	-	Nowsco-Fracmaster
HSB	H2S inhibitor	A-MP	-	-	-	Baker Oil Tools
HT Blocking gel	Crosslinked CMHPG	F-PP	-	-	-	BJ Services
HT breaker	High-temperature oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Halliburton
HT Vis 508	Chemically modified natural polymer CMHPG	F-WBP	-	-	-	Osca
HT-40N	Environmental friendly solvents	A-MP	-	-	-	Nowsco-Fracmaster
HTA-710	HCl and formic acid mixture	A-RAS	-	-	-	Halliburton
HT-FLC (linear)	Crosslinked CMHPG	F-PP	-	-	-	Osca
HTI-400	Multi-purpose completion fluid inhibitor	A-CI	-	-	-	San Antonio
HTI-400	Completion fluid corrosion inhibitor	A-CI	-	-	-	OSCA
HV-60	Oil external acid internal emulsion	A-RAS	-	-	-	Halliburton
Hybor	Crosslinked guar system	F-CGS	-	-	-	Halliburton
Hybor	Crosslinked HPG	F-CGS	-	-	-	Halliburton
Hybor	Crosslinked HPG with 3 to 5% hydrocarbon for fluid loss	F-CGS	-	-	-	Halliburton
Hybor	Crosslinked HPG with high temperature stabilizers	F-CGS	-	-	-	Halliburton
Hybor	Controllable delayed crosslinked HPG system	F-CGS	-	-	-	Halliburton
Hybor	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Halliburton
Hybor	Crosslinked guar or HPG with borate	F-CGS	-	-	-	Halliburton
Hybor plus diesel	Crosslinked HPG with 3 to 5% hydrocarbon for fluid loss	F-CGS	-	-	-	Halliburton
HyCal I	Liquid calcium chloride (CaCL2)	A-CI	-	-	-	OSCA
HyCal II	Liquid calcium bromide (CaBr)	A-CI	-	-	-	OSCA
HyCal II	Liquid zinc chloride (ZnCl)	A-CI	-	-	-	OSCA
HyCal II SB	Liquid calcium bromide (CaBr)	A-CI	-	-	-	OSCA
HyCal III SB	Liquid zinc chloride (ZnCl)	A-CI	-	-	-	OSCA
HyCar 2000	Gelled oil	F-OBS	-	-	-	Nowsco Fracmaster
HYCAR-2000	Powdered viscosifier for conventional oil gels	F-OGA	-	-	-	Nowsco Fracmaster
HyClean	Acid plus surfactant and fines suspender to improve cleanup	A-AS	-	-	-	Halliburton
HydraFlex	Crosslinked HPG	F-CGS	-	-	-	Osca
HydraFlex	Crosslinked guar or HPG with borate	F-CGS	-	-	-	Osca
HydraFlex	Controllable delayed crosslinked HPG system	F-CGS	-	-	-	Osca
HydraFlex HT	Crosslinked HPG with high temperature stabilizers	F-CGS	-	-	-	Osca
HydraFlex HT	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Osca
Hydrate Quick	Weak organic acid	F-PCA	-	-	-	Osca
Hydroflex	Hydroxyethylcellulose (HEC) system, linear or crosslinked	A-PP	-	-	-	OSCA
HyFlo IV M	Anionic nonemuldifier for oil	F-NE	-	-	-	Halliburton
HyFlo IV M	Anionic nonemulsifier	F-NE	-	-	-	Halliburton
HyFlo IV M	Anionic nonemulsifier for oil and dispersible water	F-NE	-	-	-	Halliburton
HyFlo IVM	Anionic nonemulsifier for oil	A-NE	-	-	-	Halliburton
HyFlo IVM	Anionic nonemulsifier	A-NE	-	-	-	Halliburton
HyFlo IVM	Anionic nonemulsifier for oil, dispersible in water	A-NE	-	-	-	Dowell
HYG-3	Weak organic acid	F-PCA	-	-	-	Halliburton
HyPerm CX-1	Weak organic acid	F-PCA	-	-	-	Osca
HyTemp 0	Synergistic additive for extending inhibition times at elevated temperature	F-PCA	-	-	-	BJ Services
HyTemp 382	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	BJ Services
HyTemp 382	Synergistic additive for extending inhibition times at elevated temperature	F-PCA	-	-	-	BJ Services
HyTemp 400	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	BJ Services
HyTemp 400	Synergistic additive for extending inhibition times at elevated temperature	F-PCA	-	-	-	BJ Services
HyTemp I	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	BJ Services
HyTemp I	Synergistic additive for extending inhibition times at elevated temperature	F-PCA	-	-	-	BJ Services
HyTemp O	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	BJ Services
IC-10	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	San Antonio
IC-16/IC-17	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	San Antonio
IC-22	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	San Antonio
IC-8	Inhibitor for formic and acetic acid	A-AI	-	-	-	San Antonio
ICA-8	Proprietary iron stabilizer	A-IC	-	-	-	San Antonio
Improved Fe acid	Acid plus iron stabilization	A-AS	-	-	-	Halliburton
InFlo	Nonionic fluorosurfactant for acid and water	A-NE	-	-	-	BJ Services
Inflo 100	Cationic fluorosurfactant for acid or water	A-S	-	-	-	BJ Services
InFlo 100	Cationic fluorosurfactant for water and acid systems	F-S	-	-	-	BJ Services

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
InFlo 100	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	BJ Services
Inflo 150	nonionic fluorosurfactant for acid or water	A-S	-	-	-	BJ Services
InFlo 150	Nonionic fluorosurfactant for water and acid systems	F-S	-	-	-	BJ Services
InFlo 150	Coal surfactant	F-S	-	-	-	BJ Services
InFlo 150	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	BJ Services
InFlo 150	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Nowsco Fracmaster
InFlo 150	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	BJ Services
InFlow 100	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	BJ Services
Inflow-150	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Nowsco Fracmaster
Invercon-2	Oil-base mud dispersant	A-MP	-	-	-	BJ Services
InvertaFrac	Prepad with buoyant diverting agent to control upward growth	F-CGS	-	-	-	Dowell
Ironsorb 200	Proprietary iron stabilizer	A-IC	-	-	-	OSCA
IS-100	Organic acid powder	A-IC	-	-	-	Nowsco-Fracmaster
IS-2	Synergistic additive for extending inhibition times at elevated temperature	F-PCA	-	-	-	Fracmaster
IS-6	Proprietary iron stabilizer	A-IC	-	-	-	Nowsco-Fracmaster
IS-7	Proprietary iron stabilizer	A-IC	-	-	-	Nowsco-Fracmaster
IS-8	Proprietary iron stabilizer	A-IC	-	-	-	Nowsco-Fracmaster
Iversol	Water-base surfactant and dispersant system for conventional mud systems	A-WBC	-	-	-	BJ Services
J110	FLA used in water and oil (Adomite Aqua)	F-FLA	-	-	-	Dowell
J120 (acid)	Powdered anionic for acid, brines and fresh water	F-FR	-	-	-	Dowell
J126	FLA used in oil base fluids (Adomite Mark II)	F-FLA	-	-	-	Dowell
J-133	Powdered guar gum polymer, rapid hydration for continuous mix. Contains internal breaker	F-WBP	-	-	-	Dowell
J134	Enzyme breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Dowell
J134	High pH stable enzyme breaker for high pH frac fluids	F-B	-	-	-	Dowell
J134	Guar specific enzyme breaker	F-B	-	-	-	Dowell
J134L	Enzyme breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Dowell
J134L	High pH stable enzyme breaker for high pH frac fluids	F-B	-	-	-	Dowell
J134L	Guar specific enzyme breaker	F-B	-	-	-	Dowell
J134L	Gel breaker and filter cake degrader. Treatment follows water base fracturing fluids. (80 to 270F BHT)	F-B	-	-	-	Dowell
J164	Powdered hydroxethylcellulose viscosifier. Delayed hydration polymer for use as a secondary gel or batch mix	F-WBP	-	-	-	Dowell
J164 (Internal breaker)	Powdered hydroxyethylcellulose viscosifier	F-WBP	-	-	-	Dowell
J166 (water and brines)	Powdered anionic for acid, brines and fresh water	F-FR	-	-	-	Dowell
J166 (water, brine)	Anionic powder for acid, brines and fresh water	A-FR	-	-	-	Dowell
J20 (acid)	Cationic powder for acid, brines and fresh water	A-FR	-	-	-	Dowell
J218	Oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Dowell
J218	Gel breaker and filter cake degrader. Treatment follows water base fracturing fluids. (80 to 270F BHT)	F-B	-	-	-	Dowell
J221	Strong base	F-PCA	-	-	-	Dowell
J227 (particulate)	100 mesh benzoic acid for acid, water or foam fracturing treatments	A-FL	-	-	-	Dowell
J227A	Flake benzoic acid	A-DA	-	-	-	Dowell
J22L	Powdered CMHPG for oil base slurry	F-WBP	-	-	-	BJ Services
J237	Acid fluid loss additives	A-FL	-	-	-	Dowell
J237	Oil soluble resin in aqueous solution	A-DA	-	-	-	Dowell
J237	Acid diverting agent	A-DA	-	-	-	Dowell
J238	Combination graded oil soluble resin and degradable low molecular weight polymers non-damaging additive for acid and water	A-FL	-	-	-	Dowell
J238	Combination graded oil soluble resin and degradable low molecular weight polymers. Non-damaging for water and acid	F-FLA	-	-	-	Dowell
J23B	Graded oil soluble resin	A-DA	-	-	-	Dowell
J257	Liquid friction reducer for hydrocarbons	A-FR	-	-	-	Dowell
J257	Liquid friction reducer for hydrocarbons	F-FR	-	-	-	Dowell
J277 (particulate)	100 mesh benzoic acid for water, acid or foam fracturing treatments	F-FLA	-	-	-	Dowell
J285	Ammonium chloride (NHCl)	A-MP	-	-	-	Dowell
J291	Defoamer for oil base fluids	F-D	-	-	-	Dowell
J295	Breaker for phosphate ester oil gels	F-B	-	-	-	Dowell
J312	Powdered xanthate polyner for viscosifying 15 % or less hydrochlonc	A-WBP	-	-	-	Dowell
J313 (water and brine)	Liquid anionic polyacrylamide for water	F-FR	-	-	-	Dowell
J313 (water or brine)	Liquid anionic polyacrylamide for acids	A-FR	-	-	-	Dowell
J318	Low temperature breaker activator for persulfates	F-B	-	-	-	Dowell
J318	Low temperature oil breaker	F-B	-	-	-	Dowell
J318	Breaker for phosphate ester oil gels	F-B	-	-	-	Dowell
J318	Oil breaker	F-B	-	-	-	Dowell
J321	Liquid cationic polyacrylamide for acids	A-FR	-	-	-	Dowell
J321	Liquid cationic polyacrylamide for acids, brines and fresh water	F-FR	-	-	-	Dowell
J330	Acid diverting agent	A-DA	-	-	-	Dowell
J347	Powdered hydrxypropylguar gum, delayed hydration polymer, for batch mix. No internal breaker	F-WBP	-	-	-	Dowell
J352	Propnetary crosslinking agent. Titanium (Ti)	F-C	-	-	-	Dowell
J353	Powdered stabilizer for high temperatures	F-GS	-	-	-	Dowell
J360	Powdered xanthate polyner for viscosifying 15 % or less hydrochlonc	A-WBP	-	-	-	Dowell
J362	Powdered hydrxypropylguar gum, delayed hydration polymer, for batch mix. No internal breaker	F-WBP	-	-	-	Dowell
J363	Acid diverting agent	A-DA	-	-	-	Dowell
J363	Water soluble diverting agent	A-DA	-	-	-	Dowell
J418	Selectively graded fine mesh silica flour for water, oil and acid	F-FLA	-	-	-	Dowell
J424	Powdered guar gum polymer, delayed hydration for batch mix:	F-WBP	-	-	-	Dowell
J425	Liquid acid viscosifier	A-WBP	-	-	-	Dowell
J425 (16 - 28%)	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	Dowell
J429	Liquid acid viscosifier	A-WBP	-	-	-	Dowell
J450	Liquid stabilizer for high temperatures	F-GS	-	-	-	Dowell
J451	Proprietary liquid fluid loss solution	F-FLA	-	-	-	Dowell
J452	Liquid viscosifier for phosphate ester gels	F-OGA	-	-	-	Dowell
J452	High temperature oil gelling agent	F-OGA	-	-	-	Dowell
J453	Liquid actitivator for phos[hate ester gels	F-OGA	-	-	-	Dowell
J456	Powdered hydrxypropylguar gum, delayed hydration polymer, for batch mix. No internal breaker	F-WBP	-	-	-	Dowell
J456	Powdered HOG for oil base slurry	F-WBP	-	-	-	Dowell
J456	Low temperature breaker activator for persulfates	F-B	-	-	-	Dowell
J457	Powdered guar gum polymer. Rapid hydration for use in oil base slurrys	F-WBP	-	-	-	Dowell
J-457	Powdered guar gum polymer, rapid hydration for continuous mix. Contains internal breaker	F-WBP	-	-	-	Dowell

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
J464	Powdered weak base	F-PCA	-	-	-	Dowell
J465	Strong base	F-PCA	-	-	-	Dowell
J471A	Proprietary iron stabilizer	A-IC	-	-	-	Dowell
J473	Coal surfactant	F-S	-	-	-	Dowell
J475	Encapsulated oxidative breaker (140 to 225 F BHT)	F-B	-	-	-	Dowell
J476C	Liquid acid viscosifier	A-WBP	-	-	-	Dowell
J477	Acid diverting agent	A-DA	-	-	-	Dowell
J478	FLA, Powdered fully degradable FLA for water base fluid used 120 to 350 F	F-FLA	-	-	-	Dowell
J479	Encapsulated oxidative breaker (BHT < 140F)	F-B	-	-	-	Dowell
J481	High-temperature oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Dowell
J481	Gel breaker and filter cake degrader. Treatment follows water base fracturing fluids. (80 to 270F BHT)	F-B	-	-	-	Dowell
J486	Powdered CMHPG for oil base slurry	F-WBP	-	-	-	Dowell
J486	Chemically modified natural polymer CMHPG	F-WBP	-	-	-	Dowell
J490	Encapsulated oxidative breaker (225 to 350 F BHT)	F-B	-	-	-	Dowell
J490	Encapsulated oxidative breaker (225 to 400 F BHT)	F-B	-	-	-	Dowell
J493 (CBMK)	Coal fines and clean-up	F-WBP	-	-	-	Dowell
J494	Buffers (propriety)	F-PCA	-	-	-	Dowell
J496	Encapsulated oxidative breaker (140 to 225 F BHT)	F-B	-	-	-	Dowell
J498	FLA, Powdered fully degradable FLA for water base fluid used 120 to 350 F	F-FLA	-	-	-	Dowell
J499	FLA, Powdered fully degradable FLA for water base fluid used 120 to 350 F	F-FLA	-	-	-	Dowell
J503	Stach specific enzyme breaker	F-B	-	-	-	Dowell
J506	Proprietary crosslinking agent. Borate	F-C	-	-	-	Dowell
J506	Delayed borate crosslinker high temperature	F-C	-	-	-	Dowell
J507	Liquid acid viscosifier	A-WBP	-	-	-	Dowell
J508W	Non-polymer frac fluids (Clean Frac)	F-WBP	-	-	-	Dowell
J511	Crosslinking delay additive	F-C	-	-	-	Dowell
J-513	Proprietary crosslinking agent. Zirconium (Zr)	F-C	-	-	-	Dowell
J515	Proprietary crosslinking agent. Zirconium (Zr)	F-C	-	-	-	Dowell
J518	High temperature oil gelling agent	F-OGA	-	-	-	Dowell
J526	Non-polymer frac fluids (Clean Frac)	F-WBP	-	-	-	Dowell
J601	Liquid actitivator for phos[hate ester gels	F-OGA	-	-	-	Dowell
J602	Liquid actitivator for phos[hate ester gels	F-OGA	-	-	-	Dowell
J603	Breaker for phosphate ester oil gels	F-B	-	-	-	Dowell
J66	Graded rock salt	A-DA	-	-	-	Dowell
J66	Sodium chloride	A-MP	-	-	-	Dowell
J84	Selectively graded fine mesh silica flour for water, oil and acid	F-FLA	-	-	-	Dowell
J876	Powdered hydroxypropylguar gum, delayed hydration polymer, for batch mix. No internal breaker	F-WBP	-	-	-	Dowell
J876	HPG gum in oil base slurry	F-WBP	-	-	-	Dowell
J876	HPG in diesel slurry	F-CMG	-	-	-	Dowell
J877	Powdered guar gum polymer, delayed hydration for batch mix:	F-WBP	-	-	-	Dowell
J877	Guar gum in oil base slurry	F-WBP	-	-	-	Dowell
J877	Guar in diesel slurry	F-CMG	-	-	-	Dowell
J916	CMHPG gum in oil base slurry	F-WBP	-	-	-	Dowell
J916	High yield CMHPG (Slurrible)	F-WBP	-	-	-	Dowell
J916	CMHPG in diesel slurry	F-CMG	-	-	-	Dowell
K-34	Low temperature oil breaker	F-B	-	-	-	Halliburton
K-34	Breaker for phosphate ester oil gels	F-B	-	-	-	Halliburton
K-34	Oil breaker. Low Temperature	F-B	-	-	-	Halliburton
K-34	Oil breaker	F-B	-	-	-	Halliburton
K-34	Powdered weak base	F-PCA	-	-	-	Halliburton
K35	Strong base	F-PCA	-	-	-	Halliburton
K-35	Powdered scale control component of gyp removal process	A-MP	-	-	-	Halliburton
K-35	Breaker for phosphate ester oil gels	F-B	-	-	-	Halliburton
K-35	Buffers (propriety)	F-PCA	-	-	-	Halliburton
K46	Liquid stabilizer for high temperatures	F-GS	-	-	-	Dowell
KCl	Potassium chloride (KCl)	A-MP	-	-	-	BJ Services
KCl	Potassium chloride (KCl)	A-MP	-	-	-	Halliburton
KCl	Potassium chloride (KCl)	A-MP	-	-	-	OSCA
Kerosene	Diesel, Kerosene or aromatic	A-MP	-	-	-	Baker Oil Tools
Kerosene	Diesel, Kerosene or aromatic	A-MP	-	-	-	San Antonio
Kmax	Other derivitzed HEC	A-PP	-	-	-	Halliburton
K-MAX	Hydroxythylcellulose system linear or crosslinked	F-PP	-	-	-	Halliburton
KrystalFrac	Crosslinked CMHEC	F-CGS	-	-	-	BJ Services
KrystalFrac	Crosslinked CMHEC for high temperature	F-CGS	-	-	-	BJ Services
L1	Organic acid powder	A-IC	-	-	-	Dowell
L1	Acid plus iron stabilization	A-AS	-	-	-	Dowell
L10 (powder)	Proprietary crosslinking agent. Borate	F-C	-	-	-	Dowell
L35	Scale inhibitor	A-SI	-	-	-	Dowell
L36	Synergistic additive for extending inhibition times at elevated temperature	F-PCA	-	-	-	Dowell
L400	Organic acid liquid	A-IC	-	-	-	Dowell
L400	Organic acid	A-MP	-	-	-	Dowell
L400 (oil)	Organic acid (formic and/or acetic)	A-AS	-	-	-	Dowell
L400 plus HCl	HCl and acetic acid mixture	A-RAS	-	-	-	Dowell
L401 (winterized)	Organic acid liquid	A-IC	-	-	-	Dowell
L41	Acid plus iron stabilization	A-AS	-	-	-	Dowell
L41 (solid)	EDTA - Sects	A-IC	-	-	-	Dowell
L42	Cationic polymer for stabilizing clays	A-CS	-	-	-	Dowell
L42	Acid plus iron stabilization	A-AS	-	-	-	Dowell
L42	Cationic polymer for stabilizing clays	F-CS	-	-	-	Dowell
L47	Scale inhibitor	A-SI	-	-	-	Dowell
L49	Scale inhibitor	A-SI	-	-	-	Dowell
L55	Cationic polymer for stabilizing clays	A-CS	-	-	-	Dowell
L55	Cationic polymer for stabilizing clays	F-CS	-	-	-	Dowell
L58	Acid plus iron stabilization	A-AS	-	-	-	Dowell
L58	Specialty acid for sour gas wells	A-RAS	-	-	-	Dowell
L58	Proprietary iron stabilizer	A-IC	-	-	-	Dowell
L6	Synergistic additive for extending inhibition times at elevated temperature	F-PCA	-	-	-	Dowell
L62	Proprietary iron stabilizer	A-IC	-	-	-	Dowell
L63	Proprietary iron stabilizer	A-IC	-	-	-	Dowell

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
L64	Cationic potassium chloride (KCl) substitute	A-CS	-	-	-	Dowell
L64	Cationic KCl substitute	F-CS	-	-	-	Dowell
L64	Cationic clay stabilizer	F-CS	-	-	-	Dowell
LAD acid	Oil external acid internal emulsion	A-RAS	-	-	-	Nowsco-Fracmaster
LPC-3	CMHPG gum in oil base slurry	F-WBP	-	-	-	Nowsco Fracmaster
LGC-1	HPG with KCl in aqueous slurry	F-CMG	-	-	-	Halliburton
LGC-8	Guar gum in oil base slurry	F-WBP	-	-	-	Halliburton
LGC-8	Guar in diesel slurry	F-CMG	-	-	-	Halliburton
LGC-8	Guar in mineral oil slurry	F-CMG	-	-	-	Halliburton
LGC-II	Guar with KCl in aqueous slurry	F-CMG	-	-	-	Halliburton
LGC-IV	Guar gum in oil base slurry	F-WBP	-	-	-	Halliburton
LGC-IV	Guar in diesel slurry	F-CMG	-	-	-	Halliburton
LGC-V	HPG gum in oil base slurry	F-WBP	-	-	-	Halliburton
LGC-V	HPG in diesel slurry	F-CMG	-	-	-	Halliburton
LGC-VI	CMHPG gum in oil base slurry	F-WBP	-	-	-	Halliburton
LGC-VI	CMHPG in diesel slurry	F-CMG	-	-	-	Halliburton
Lignoflush	Water-base mud removal system	A-MP	-	-	-	Nowsco-Fracmaster
Lignoflush	Water-base mud removal non-reactive solution	A-As	-	-	-	Nowsco-Fracmaster
LoSurf 259	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Halliburton
LOSURF 259	Nonionic nonemulsifier	F-NE	-	-	-	Halliburton
LOSURF 259	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Halliburton
LoSurf 300	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Halliburton
LOSURF 300	Nonionic nonemulsifier	F-NE	-	-	-	Halliburton
LOSURF 300	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Halliburton
LoSurf 357	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Halliburton
LOSURF 357	Nonionic nonemulsifier	F-NE	-	-	-	Halliburton
LOSURF 357	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Halliburton
LoSUrf 396	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Halliburton
LOSURF 396	Nonionic nonemulsifier	F-NE	-	-	-	Halliburton
LOSURF 396	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Halliburton
LoSurt 259	Nonionic nonemulsifier	A-NE	-	-	-	Halliburton
LoSurt 300	Cationic surfactant for acid or water	A-NE	-	-	-	Halliburton
LoSurt 357	Cationic surfactant for acid or water	A-NE	-	-	-	Halliburton
LoSurt 396	Cationic surfactant for acid or water	A-NE	-	-	-	Halliburton
LoTemp	HCl and chemical retarder mixture	A-RAS	-	-	-	BJ Services
LP-55	Scale inhibitor	A-SI	-	-	-	Halliburton
LT-17	Anionic nonemulsifier	A-NE	-	-	-	BJ Services
LT-17	Cationic nonemulsifier for acid and water	A-NE	-	-	-	BJ Services
LT-17	Cationic nonemulsifier for acid and water	A-FS	-	-	-	BJ Services
LT-2	Nonionic surfactant and nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
LT-21	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	BJ Services
LT-21	Fines suspending agent for acid	A-FS	-	-	-	BJ Services
LT-21 or MR-1	Fines removal acid with iron stabilization	A-AS	-	-	-	BJ Services
LT-22	Cationic clay stabilizer	A-CS	-	-	-	BJ Services
LT-32	Cationic surfactant for acid or water	A-NE	-	-	-	BJ Services
LT-32	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	BJ Services
LT-32	Microemulsion surfactant	A-NE	-	-	-	BJ Services
LT-32	Nonionic nonemulsifier	F-NE	-	-	-	BJ Services
LT-32	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
LT-32	Microemulsion surfactnat	F-NE	-	-	-	BJ Services
LTA-3	Low temperature breaker activator for persulfates	F-B	-	-	-	Nowsco Fracmaster
M11	Strong base	F-PCA	-	-	-	Dowell
M117	Potassium chloride (KCl)	A-MP	-	-	-	Dowell
M129.1	Powdered oxygen scavenger	A-OS	-	-	-	Dowell
M2	Strong base	F-PCA	-	-	-	Dowell
M2	Strong base	F-PCA	-	-	-	Dowell
M275	Biocide	F-OGA	-	-	-	Dowell
M290	Biocide	F-OGA	-	-	-	Dowell
M3	Oil breaker. Low Temperature	F-B	-	-	-	Dowell
M-3 (2% caustic)	Strong base	F-PCA	-	-	-	Dowell
M33	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	Dowell
M38W	Cationic clay stabilizer	A-CS	-	-	-	Dowell
M38W	Cationic nonemulsifier for acid and water	A-NE	-	-	-	Dowell
M38W	Cationic clay stabilizer	F-CS	-	-	-	Dowell
M38W	Cationic nonemulsifier for water and acid	F-NE	-	-	-	Dowell
M47	Buffers (propriety)	F-PCA	-	-	-	Dowell
M54	Multi-purpose mutual solvent and paraffin dispersant	A-MP	-	-	-	Dowell
Magnacide 575	Biocide	F-OGA	-	-	-	BJ Services
Magnicide 545	Biocide	F-OGA	-	-	-	Osca
Masterflush O	Oil-base mud dispersant	A-MP	-	-	-	Nowsco-Fracmaster
Masterflush O	Oil-base mud removal nonreactive	A-As	-	-	-	Nowsco-Fracmaster
Masterflush W	Water-base surfactant and dispersant system for conventional mud systems	A-WBC	-	-	-	Nowsco-Fracmaster
Masterflush W	Water-base mud removal system	A-MP	-	-	-	Nowsco-Fracmaster
Masterflush-10	Oil-base mud dispersion	A-WBC	-	-	-	Nowsco-Fracmaster
Matriseal O	Oil soluble resin in aqueous solution	A-DA	-	-	-	Halliburton
Matriseal O	Acid diverting agent	A-DA	-	-	-	Halliburton
Matriseal OWG	Acid fluid loss additives	A-FL	-	-	-	Halliburton
Matriseal OWG	Non-aqueous solution	A-DA	-	-	-	Halliburton
Matriseal OWG	Acid diverting agent	A-DA	-	-	-	Halliburton
Matriseal OWG	Water soluble diverting agent	A-DA	-	-	-	Halliburton
MatrixFlo II	Acid breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Halliburton
Matrseal 0	Combination graded oil soluble resin and degradable low molecular weight polymers. Non-damaging for water and acid	F-FLA	-	-	-	Halliburton
Maxi-0-93 Gel	Crosslinked gelled oil for medium temperatures	F-OBS	-	-	-	BJ Services
Maxseal	Other derivitized HEC	A-PP	-	-	-	Halliburton
MCA	HCl acid with surfactants to disperse and suspend mud and fines	A-AS	-	-	-	Halliburton
MCA+iron control	Mud removal acid with iron stabilizing agents	A-AS	-	-	-	Halliburton
MCS-2	Water-base surfactant and dispersant system for conventional mud systems	A-WBC	-	-	-	BJ Services
MCS-3	Oil-base mud dispersion	A-WBC	-	-	-	BJ Services
MCS-3	Oil-base mud dispersant	A-MP	-	-	-	BJ Services
MCS-4	Water-base surfactant and dispersant system for conventional mud systems	A-WBC	-	-	-	BJ Services
Medallion	Crosslinked CMHPG high temperature fluid	F-CGS	-	-	-	BJ Services
Medallion	Crosslinked CMHPG low pH CO2 compatible fluid	F-CGS	-	-	-	BJ Services
Medallion	Crosslinked CMHPG low pH CO2 compatible fluid	F-CGS	-	-	-	Nowsco Fracmaster

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Medallion Frac	CO2 compatible fracturing fluid	F-CGS	-	-	-	Nowsco Fracmaster
Medallion Frac	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	BJ Services
Medallion Frac	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Nowsco Fracmaster
Medallion HT	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Nowsco Fracmaster
Medallion HT	Crosslinked CMHPG high temperature fluid	F-CGS	-	-	-	BJ Services
MedallionFrac	CO2 compatible fracturing fluid	F-CGS	-	-	-	BJ Services
MedallionFrac HT	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	BJ Services
Methanol	Liquid stabilizer for high temperatures	F-GS	-	-	-	BJ Services
Methanol	Liquid stabilizer for high temperatures	F-GS	-	-	-	Halliburton
Methanol	Liquid stabilizer for high temperatures	F-GS	-	-	-	Nowsco Fracmaster
Methanol	Liquid stabilizer for high temperatures	F-GS	-	-	-	Osca
Methanol 4X	Crosslinked 100% alcohol system	F-AWS	-	-	-	Fracmaster
MethoFoam	Methanol and N2 foam	F-OBS	-	-	-	BJ Services
MethoFoam	Methanol and N2 foam	F-OBS	-	-	-	Nowsco Fracmaster
MethoFrac	Crosslinked 100% alcohol system	F-AWS	-	-	-	BJ Services
MethoFrac	Crosslinked 100% alcohol system	F-AWS	-	-	-	Nowsco Fracmaster
MF-1	Foaming agent for water and methanol	A-F	-	-	-	Nowsco-Fracmaster
MF-1	Foaming agent for 100% methanol and methanol water mixtures	A-F	-	-	-	Nowsco-Fracmaster
MF-1	Foaming agent	F-F	-	-	-	Fracmaster
MF-1	Foaming agent for water and methanol	F-F	-	-	-	Fracmaster
MF-1	Foaming agent for 100% methanol and methanol-water mixtures	F-F	-	-	-	Fracmaster
MIGHTY-PAC	Proppants for holding formation cracks open.	F-IHC	-	-	-	Messina
MO-65	Liquid viscosifier for phosphate ester gels	F-OGA	-	-	-	Halliburton
MO-66	Liquid actitivator for phos[hate ester gels	F-OGA	-	-	-	Halliburton
MO67	Strong base	F-PCA	-	-	-	Halliburton
MO-67	Strong base	F-PCA	-	-	-	Halliburton
MO-67	Liquid actitivator for phos[hate ester gels	F-OGA	-	-	-	Halliburton
MO-75	Liquid viscosifier for phosphate ester gels	F-OGA	-	-	-	Halliburton
MO-76	Liquid actitivator for phos[hate ester gels	F-OGA	-	-	-	Halliburton
MOD acid 101	HCl and acetic acid mixture	A-RAS	-	-	-	Halliburton
MOD acid 202	HCl and acetic acid mixture	A-RAS	-	-	-	Halliburton
MO-HT B	High temperature oil gelling agent	F-OGA	-	-	-	Halliburton
MorFlo II	Anionic nonemulsifier	F-NE	-	-	-	Halliburton
MorFlo II	Anionic nonemulsifier for water and acid	F-NE	-	-	-	Halliburton
MorFlo III	General purpose anionic surfactant	A-MP	-	-	-	Halliburton
MrFlo III	Anionic nonemulsifier	A-NE	-	-	-	Halliburton
MRS Series	Water-base surfactant and dispersant system for conventional mud systems	A-WBC	-	-	-	BJ Services
MRS Series	Water-base mud removal system	A-MP	-	-	-	BJ Services
MRS Series	Water-base mud removal non-reactive solution	A-As	-	-	-	BJ Services
MRSA	Water-base mud removal non-reactive solution	A-As	-	-	-	Baker Oil Tools
MRSB	Water-base mud removal non-reactive solution	A-As	-	-	-	Baker Oil Tools
MS 100	Proprietary mutual solvent	A-MS	-	-	-	Baker Oil Tools
MS 75	Proprietary mutual solvent	A-MS	-	-	-	Baker Oil Tools
MS 77	Proprietary mutual solvent	A-MS	-	-	-	Baker Oil Tools
MS 90	Mutual solvent (EGMBE)	A-MS	-	-	-	Baker Oil Tools
MS 921	Multi-purpose mutual solvent and paraffin dispersant	A-MP	-	-	-	Baker Oil Tools
MS acid	Mud removal acid with iron stabilizing agents	A-AS	-	-	-	BJ Services
MS-1	Microemulsion surfactant	A-NE	-	-	-	OSCA
MS-1	Proprietary mutual solvent	A-MS	-	-	-	OSCA
MS-10	Proprietary mutual solvent	A-MS	-	-	-	BJ Services
MS100	Multi-purpose mutual solvent and paraffin dispersant	A-MP	-	-	-	Baker Oil Tools
MS-100	Mutual solvent (EGMBE)	A-MS	-	-	-	Nowsco-Fracmaster
MS-12	Proprietary mutual solvent	A-MS	-	-	-	BJ Services
MS16	Multi-purpose mutual solvent and paraffin dispersant	A-MP	-	-	-	BJ Services
MS-16	Proprietary mutual solvent	A-MS	-	-	-	BJ Services
MS-200	Proprietary mutual solvent	A-MS	-	-	-	Nowsco-Fracmaster
MS-400	Microemulsion surfactnat	F-NE	-	-	-	Nowsco Fracmaster
MS-5	Proprietary mutual solvent	A-MS	-	-	-	BJ Services
MS90	Multi-purpose mutual solvent and paraffin dispersant	A-MP	-	-	-	Baker Oil Tools
MSA	Acetic acid	A-AS	-	-	-	Halliburton
MSA II	Inhibitor for formic and acetic acid	A-AI	-	-	-	Halliburton
MSR	Mud removal acid with iron stabilizing agents	A-AS	-	-	-	Dowell
MSR 100	Acid plus surfactant and fines suspender to improve cleanup	A-AS	-	-	-	Dowell
MSR 123	Acid plus surfactant and fines suspender to improve cleanup	A-AS	-	-	-	Dowell
MSR 150	Acid plus surfactant and fines suspender to improve cleanup	A-AS	-	-	-	Dowell
MSR acid	Low surface tension acid plus iron stabilization	A-AS	-	-	-	Dowell
MSR acids	Fines removal acid with iron stabilization	A-AS	-	-	-	Dowell
MSR acids 100	Fines removal acid with iron stabilization	A-AS	-	-	-	Dowell
MSR100	HCl acid with surfactants to disperse and suspend mud and fines	A-AS	-	-	-	Dowell
MSR123	HCl acid with surfactants to disperse and suspend mud and fines	A-AS	-	-	-	Dowell
MSR150	HCl acid with surfactants to disperse and suspend mud and fines	A-AS	-	-	-	Dowell
Mud Flush	Water-base surfactant and dispersant system for conventional mud systems	A-WBC	-	-	-	Halliburton
MudClean OB	Oil-base mud dispersion	A-WBC	-	-	-	Dowell
Mudclean OB	Oil-base mud removal nonreactive	A-As	-	-	-	Dowell
MudFlush	Water-base mud removal non-reactive solution	A-As	-	-	-	Halliburton
Mud-Flush	Water-base mud removal system	A-MP	-	-	-	Halliburton
Musol	Mutual solvent (EGMBE)	A-MS	-	-	-	Halliburton
Musol A	Proprietary mutual solvent	A-MS	-	-	-	Halliburton
Musol E	Proprietary mutual solvent	A-MS	-	-	-	Halliburton
My-T-Acid	Alternating stages of viscous spearhead acid control (SAC)	A-RAS	-	-	-	Halliburton
MY-T-Gel LT	CO2 compatible fracturing fluid	F-CGS	-	-	-	Halliburton
MY-T-Oil III	Crosslinked gelled oil for higher temperatures	F-OBS	-	-	-	Halliburton
MY-T-Oil IV	Crosslinked gelled oil for medium temperatures	F-OBS	-	-	-	Halliburton
MY-T-Oil IV	Continuous crosslinked gelled oil	F-OBS	-	-	-	Halliburton
NAD-5	Asphaltene inhibitor	A-MP	-	-	-	Nowsco-Fracmaster
NAG 400	Powdered acid gellant	A-WBP	-	-	-	Nowsco-Fracmaster
NAG 500	Powdered xanthate polymer for viscosifying 15 % or less hydrochloric	A-WBP	-	-	-	Nowsco-Fracmaster
NAG-400L	Liquid acid viscosifier	A-WBP	-	-	-	Nowsco-Fracmaster
NAG-400L	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	Nowsco-Fracmaster
NAG-600L	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	Nowsco-Fracmaster
Naphthalene flake	Oil soluble graded napthalene	A-DA	-	-	-	Nowsco-Fracmaster
NAR-193	Oil wetting surfactant for limestone reservoirs and moderate temperature	A-AR	-	-	-	Nowsco-Fracmaster
NAR-193	Oil wetting surfactant for limestone reservoirs and high temperature	A-AR	-	-	-	Nowsco-Fracmaster
Nars	Water-base mud removal non-reactive solution	A-As	-	-	-	Dowell

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Nars 200	Water-base surfactant and dispersant system for conventional mud systems	A-WBC	-	-	-	Dowell
Nars 201	Water-base surfactant and dispersant system for conventional mud systems	A-WBC	-	-	-	Dowell
NARS200	Surfactant and clay stabilizer blend for removing oil base mud damage	A-MP	-	-	-	Dowell
NARS201	Surfactant and clay stabilizer blend for removing oil base mud damage	A-MP	-	-	-	Dowell
NE 100	Nonionic nonemulsifier	A-NE	-	-	-	Baker Oil Tools
NE 100	Nonionic nonemulsifier for oil	A-NE	-	-	-	Baker Oil Tools
NE 100	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Baker Oil Tools
NE 100	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	Baker Oil Tools
NE 264	Nonionic nonemulsifier	A-NE	-	-	-	Baker Oil Tools
NE 264	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Baker Oil Tools
NE 264	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	Baker Oil Tools
NE acid	Acid plus surfactant to improve cleanup and prevent emulsions	A-AS	-	-	-	Baker Oil Tools
NE acid	Acid plus surfactant to improve cleanup and prevent emulsions	A-AS	-	-	-	Halliburton
NE-10	Nonionic surfactant for acid or water	A-S	-	-	-	Baker Oil Tools
NE-110W	Anionic nonemulsifier for oil	A-NE	-	-	-	BJ Services
NE-110W	Anionic nonemulsifier	A-NE	-	-	-	BJ Services
NE-110W	Anionic nonemulsifier for oil, dispersible in water	A-NE	-	-	-	BJ Services
NE-110W	Anionic nonemuldifier for oil	F-NE	-	-	-	BJ Services
NE-110W	Anionic nonemuldifier for oil	F-NE	-	-	-	Nowsco Fracmaster
NE-110W	Anionic nonemulsifier	F-NE	-	-	-	BJ Services
NE-110W	Anionic nonemulsifier	F-NE	-	-	-	Nowsco Fracmaster
NE-110W	Anionic nonemulsifier for oil and dispersible water	F-NE	-	-	-	BJ Services
NE-110W	Anionic nonemulsifier for oil and dispersible water	F-NE	-	-	-	Nowsco Fracmaster
NE-110W	Anionic nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
NE-118	Nonionic nonemulsifier	A-NE	-	-	-	BJ Services
NE-118	Nonionic nonemulsifier for oil	A-NE	-	-	-	BJ Services
NE-118	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	BJ Services
NE-118	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	BJ Services
NE-118	Nonionic nonemulsifier	F-NE	-	-	-	BJ Services
NE-118	Nonionic nonemulsifier	F-NE	-	-	-	Nowsco Fracmaster
NE-118	Nonionic nonemulsifier for oil	F-NE	-	-	-	BJ Services
NE-118	Nonionic nonemulsifier for oil	F-NE	-	-	-	Nowsco Fracmaster
NE-118	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
NE-118	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
NE-118	Nonionic surfactant and nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
NE-118H	Nonionic nonemulsifier	A-NE	-	-	-	Nowsco-Fracmaster
NE-118H	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Nowsco-Fracmaster
NE-118H	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	Nowsco-Fracmaster
NE-13	Cationic nonemulsifier for acid and water	A-NE	-	-	-	BJ Services
NE-13	Anti-sludge agent for acid	A-ASA	-	-	-	BJ Services
NE-13	Cationic nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
NE-13	Cationic nonemulsifier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
NE-2	Nonionic nonemulsifier	F-NE	-	-	-	Fracmaster
NE-2	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Fracmaster
NE-2	Nonionic surfactant and nonemulsifier for water and acid	F-NE	-	-	-	Fracmaster
NE-32	Anionic nonemulsifier for acid and water	A-NE	-	-	-	BJ Services
NE-32	Stabilizer for acid emulsion	A-MP	-	-	-	BJ Services
NE-38	Cationic clay stabilizer	A-CS	-	-	-	BJ Services
NE-38	Cationic nonemulsifier for acid and water	A-NE	-	-	-	BJ Services
NE-38	Cationic clay stabilizer	F-CS	-	-	-	BJ Services
NE-38	Cationic clay stabilizer	F-CS	-	-	-	Nowsco Fracmaster
NE-38	Cationic nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
NE940	Nonionic nonemulsifier for oil	F-NE	-	-	-	BJ Services
NE940	Nonionic nonemulsifier for oil	F-NE	-	-	-	Nowsco Fracmaster
NE-940	Nonionic nonemulsifier	A-NE	-	-	-	Nowsco-Fracmaster
NE-940	Cationic surfactant for acid or water	A-NE	-	-	-	BJ Services
NE-940	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	BJ Services
NE-940	Nonionic nonemulsifier	F-NE	-	-	-	BJ Services
NE-940	Nonionic nonemulsifier	F-NE	-	-	-	Nowsco Fracmaster
NE-940	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
NE-940	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
NEA 96	Anionic nonemulsifier	F-NE	-	-	-	Halliburton
NEA-96	Anionic nonemulsifier	A-NE	-	-	-	Halliburton
NEA-96	General purpose anionic surfactant	A-MP	-	-	-	Halliburton
NEA-96M	Anionic nonemulsifier for acid and water	A-NE	-	-	-	Halliburton
NE-FE acid	Low surface tension acid plus iron stabilization	A-AS	-	-	-	Nowsco-Fracmaster
NF-3	Defoamer for aqueous fluids	F-D	-	-	-	Halliburton
NF-4	Defoamer for aqueous fluids	F-D	-	-	-	Halliburton
NF-5	Defoamer for aqueous fluids	F-D	-	-	-	Halliburton
NIoFrac	Hydrocarbon and N2 foam	F-OBS	-	-	-	Halliburton
NNE-10	Nonionic surfactant and nonemulsifier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
NNE-16	Nonionic surfactant and nonemulsifier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
NNE-18	Nonionic surfactant and nonemulsifier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
NNE-22	Nonionic surfactant and nonemulsifier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
NNE-24	Anionic nonemuldifier for oil	F-NE	-	-	-	Nowsco Fracmaster
NNE-24	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
NNE-46	Oil-base mud dispersant	A-MP	-	-	-	Nowsco-Fracmaster
Non-aqueous	Acetic acid in hydrocarbon	A-AS	-	-	-	Dowell
Nowadd 3	Powdered weak base	F-PCA	-	-	-	Nowsco Fracmaster
Nowcor 500	Multi-purpose completion fluid inhibitor	A-CI	-	-	-	Nowsco-Fracmaster
Nowcor 500	H2S inhibitor	A-MP	-	-	-	Nowsco-Fracmaster
Nowcor 500D	Multi-purpose completion fluid inhibitor	A-CI	-	-	-	Nowsco-Fracmaster
Nowcor 800	H2S corrosion inhibitor for coiled tubing	A-CI	-	-	-	Nowsco-Fracmaster
Nowcor 800	H2S inhibitor	A-MP	-	-	-	Nowsco-Fracmaster
Nowfeer 5C	Oil external emulsifier for HCl and HCl organic mixtures	A-E	-	-	-	Nowsco-Fracmaster
Nowferr	Specialty acid for sour gas wells	A-RAS	-	-	-	Nowsco-Fracmaster
Nowferr 10	Oil external emulsifier for HCl and HCl organic mixtures	A-E	-	-	-	Nowsco-Fracmaster
Nowferr 3	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	Nowsco-Fracmaster
Nowferr 3	HCl inhibitor for water wells to 120F BHT	A-AI	-	-	-	Nowsco-Fracmaster
Nowferr 5	Oil external emulsifier for HCl and HCl organic mixtures	A-E	-	-	-	Nowsco-Fracmaster
Nowferr 5	Anti-sludge agent for acid	A-ASA	-	-	-	Nowsco-Fracmaster
Nowferr 5C	Stabilizer for acid emulsion	A-MP	-	-	-	Nowsco-Fracmaster
Nowferr acid	Acid plus iron stabilization	A-AS	-	-	-	Nowsco-Fracmaster
nowferr acid	Fines removal acid with iron stabilization	A-AS	-	-	-	Nowsco-Fracmaster
Nowferr acid additives	Proprietary formulated to prevent acid sludging	A-AS	-	-	-	Nowsco-Fracmaster

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Nowferr acid additives	Mud removal acid with iron stabilizing agents	A-AS	-	-	-	Nowsco-Fracmaster
Nowferr HCl blends	Low surface tension acid plus iron stabilization	A-AS	-	-	-	OSCA
Nowferr-5	General purpose anionic surfactant	A-MP	-	-	-	Nowsco-Fracmaster
Nowflush 5	Surfactant and clay stabilizer blend for removing oil base mud damage	A-MP	-	-	-	Nowsco-Fracmaster
Nowflush 6	Surfactant and clay stabilizer blend for removing oil base mud damage	A-MP	-	-	-	Nowsco-Fracmaster
NowFlush-10	Oil-base mud dispersion	A-WBC	-	-	-	Nowsco-Fracmaster
NowpHix 11X	Buffers (propriety)	F-PCA	-	-	-	Nowsco Fracmaster
NowpHix 6P	Strong base	F-PCA	-	-	-	Nowsco Fracmaster
NowpHox	Gel breaker and filter cake degrader. Treatment follows water base fracturing fluids. (80 to 270F BHT)	F-B	-	-	-	Nowsco Fracmaster
NSA-15	Proprietary formulated to prevent acid sludging	A-AS	-	-	-	Halliburton
NSA-15	Organic acid mixture equual to 15 % HCl	A-RAS	-	-	-	Halliburton
Nuperm	Acid breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Osca
Nuperm Breaker	Gel breaker and filter cake degrader. Treatment follows water base fracturing fluids. (80 to 270F BHT)	F-B	-	-	-	Osca
N-Ver-Sperse A	Water-base surfactant and dispersant system for conventional mud systems	A-WBC	-	-	-	Halliburton
N-Ver-Sperse A	Surfactant and clay stabilizer blend for removing oil base mud damage	A-MP	-	-	-	Halliburton
N-Ver-Sperse A	Water-base mud removal system	A-MP	-	-	-	Halliburton
N-Ver-Sperse A	Water-base mud removal non-reactive solution	A-As	-	-	-	Halliburton
N-Ver-Sperse O	Oil-base mud dispersion	A-WBC	-	-	-	Halliburton
N-Ver-Sperse O	Surfactant and clay stabilizer blend for removing oil base mud damage	A-MP	-	-	-	Halliburton
N-Ver-Sperse O	Oil-base mud removal nonreactive	A-As	-	-	-	Halliburton
NWG-10	Powdered guar gum polymer, delayed hydration for batch mix;	F-WBP	-	-	-	Nowsco Fracmaster
NWG-11	Powdered guar gum polymer. Rapid hydration for use in oil base slurrys	F-WBP	-	-	-	Nowsco Fracmaster
NWG-11SLR	Guar gum in oil base slurry	F-WBP	-	-	-	Nowsco Fracmaster
NWG-12	Powdered guar gum polymer, rapid hydration for continuous mix. Contains internal breaker	F-WBP	-	-	-	Nowsco Fracmaster
NWG-20	Powdered hydroxypropylguar gum, delayed hydration polymer, for batch mix. No internal breaker	F-WBP	-	-	-	Nowsco Fracmaster
NWG-20	Powdered HPG. Delayed hydration polymer, designed for batch mix applications for borate crosslink	F-WBP	-	-	-	Nowsco Fracmaster
NWG-20	Low residue gelled water (HPG)	F-WBG	-	-	-	Nowsco Fracmaster
NWG-21	Powdered HOG for oil base slurry	F-WBP	-	-	-	Nowsco Fracmaster
NWG-21SLR	HPG gum in oil base slurry	F-WBP	-	-	-	Nowsco Fracmaster
NWG-25	Powdered hydroxypropylguar viscosifier with internal breaker. Rapid hydration for continuous mix	F-WBP	-	-	-	Nowsco Fracmaster
NWG-27	Chemically modified natural polymer CMHPG	F-WBP	-	-	-	Nowsco Fracmaster
NWG-31	Powdered CMHPG for oil base slurry	F-WBP	-	-	-	Nowsco Fracmaster
NWG-31SLR	CMHPG gum in oil base slurry	F-WBP	-	-	-	Nowsco Fracmaster
NWG-36	High yield CMHPG (Slurrible)	F-WBP	-	-	-	Nowsco Fracmaster
NWG-70	Powdered hydroxethylcellulose viscosifier. Delayed hydration polymer for use as a secondary gel or batch mix	F-WBP	-	-	-	Nowsco Fracmaster
NWG-70	Powdered hydroxyethylcellulose viscosifier	F-WBP	-	-	-	Nowsco Fracmaster
NWG-70	No residue gelled water (HEC)	F-WBG	-	-	-	Nowsco Fracmaster
NWR-250	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Nowsco Fracmaster
NWR-250	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Nowsco Fracmaster
NWR-256	Nonionic fluorosurfactant for water and acid systems	F-S	-	-	-	Nowsco Fracmaster
NWR-300	Coal surfactant	F-S	-	-	-	Nowsco Fracmaster
OC-Breaker S	Low temperature oil breaker	F-B	-	-	-	Fracmaster
OF-1	Foaming agent for hydrocarbons	F-F	-	-	-	Fracmaster
OF-1	Foaming agent for oil and condensate	F-F	-	-	-	Fracmaster
OFA-2	Foamer for hydrocarbons	A-F	-	-	-	Halliburton
OFA-2	Foaming agent for oil and condensates	A-F	-	-	-	Halliburton
OFA-2	Foaming agent for hydrocarbons	F-F	-	-	-	Halliburton
OFA-2	Foaming agent for oil and condensate	F-F	-	-	-	Halliburton
OFL-100	100 mesh oil soluble resin for acid and water	A-FL	-	-	-	Nowsco-Fracmaster
OFL-100	Graded oil soluble resin	A-DA	-	-	-	Nowsco-Fracmaster
OFL-100	100 mesh oil soluble resin in water and acid	F-FLA	-	-	-	Nowsco Fracmaster
OFL-600	Proprietary liquid fluid loss solution	F-FLA	-	-	-	Nowsco Fracmaster
OG Breaker 5	Breaker for phosphate ester oil gels	F-B	-	-	-	Fracmaster
OG Breaker 5	Oil breaker	F-B	-	-	-	Fracmaster
OG Breaker 8	Oil breaker	F-B	-	-	-	Fracmaster
OG Breaker B	Oil breaker. Low Temperature	F-B	-	-	-	Fracmaster
OG Breaker J	Breaker for phosphate ester oil gels	F-B	-	-	-	Fracmaster
OG Breaker J	Oil breaker. Low Temperature	F-B	-	-	-	Fracmaster
OG Breaker J	Oil breaker. Low Temperature	F-B	-	-	-	Fracmaster
OG Breaker J	Oil breaker	F-B	-	-	-	Fracmaster
OG Breaker S	Oil breaker. Low Temperature	F-B	-	-	-	Fracmaster
OG Breaker S	Oil breaker. Low Temperature	F-B	-	-	-	Fracmaster
OG-1	Powdered scale control component of gyp removal process	A-MP	-	-	-	Halliburton
OG-1 Breaker	Breaker for phosphate ester oil gels	F-B	-	-	-	Fracmaster
OG-1 Breaker	Oil breaker	F-B	-	-	-	Fracmaster
OG-1 Gellant	Powdered viscosifier for conventional oil gels	F-OGA	-	-	-	Fracmaster
OG-10 Gellant	Liquid viscosifier for phosphate ester gels	F-OGA	-	-	-	Fracmaster
OG-10 Gellant	High temperature oil gelling agent	F-OGA	-	-	-	Fracmaster
OG-14 Activator	Liquid actitivator for phos[hate ester gels	F-OGA	-	-	-	Fracmaster
OG-14 Gellant	Liquid viscosifier for phosphate ester gels	F-OGA	-	-	-	Fracmaster
OG-6 Activator	Liquid actitivator for phos[hate ester gels	F-OGA	-	-	-	Fracmaster
OG-6 Gellant	Liquid viscosifier for phosphate ester gels	F-OGA	-	-	-	Fracmaster
OG-8 Activator	Liquid actitivator for phos[hate ester gels	F-OGA	-	-	-	Fracmaster
OG-Breaker B	Low temperature oil breaker	F-B	-	-	-	Fracmaster
OG-Breaker J	Low temperature oil breaker	F-B	-	-	-	Fracmaster
OilSEEKER	Viscoelastic surfactant diverting agent	A-DA	-	-	-	Dowell
Olifoam	Foamer for hydrocarbons	A-F	-	-	-	San Antonio
Olifoam	Foaming agent for oil and condensates	A-F	-	-	-	San Antonio
OMA	Acetic acid in hydrocarbon	A-AS	-	-	-	Nowsco-Fracmaster
One Shot Acid	HCl acid with a dispersed aromatic solvent	A-AS	-	-	-	BJ Services
OptiFlo II	Encapsulated oxidative breaker (140 to 225 F BHT)	F-B	-	-	-	Halliburton
OptiFlo II	Encapsulated oxidative breaker (BHT < 140F)	F-B	-	-	-	Halliburton
OptiFlo LT	Encapsulated acidic breaker (<60 to 250 F BHT)	F-B	-	-	-	Halliburton
OptiFlo THE	Encapsulated enzyme breaker	F-B	-	-	-	Halliburton
OptiFloHTE	Guar specific enzyme breaker	F-B	-	-	-	Halliburton
OptiKleen	Gel breaker and filter cake degrader. Treatment follows water base fracturing fluids. (80 to 270F BHT)	F-B	-	-	-	Halliburton

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
OptiKleen-LT	Gel breaker and filter cake degrader. Treatment follows water base fracturing fluids. (80 to 270F BHT)	F-B	-	-	-	Halliburton
OS-300	Inhibitor for formic and acetic acid	A-AI	-	-	-	OSCA
OS7	Powdered oxygen scavenger	A-OS	-	-	-	OSCA
OS8	Powdered oxygen scavenger	A-OS	-	-	-	OSCA
OSA	Acetic acid in hydrocarbon	A-AS	-	-	-	Halliburton
OSC-11-2	Synergistic additive for extending inhibition times at elevated temperature	F-PCA	-	-	-	Osca
Osca Solv	Paraffin dispersant	A-PC	-	-	-	OSCA
Osca Solv	Liquid paraffin dispersant inhibitor	A-PC	-	-	-	OSCA
Osca Solv	Multi-purpose mutual solvent and paraffin dispersant	A-MP	-	-	-	OSCA
OS-CII-1	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	OSCA
OS-CII-2	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	OSCA
OS-CII-3	Synergistic additive for extending inhibition times at high temperature	A-AI	-	-	-	OSCA
OSI-170	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	OSCA
OSI-170	HCl inhibitor for water wells to 120F BHT	A-AI	-	-	-	OSCA
OSI-350	Inhibitor for formic and acetic acid	A-AI	-	-	-	OSCA
OSI-400	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	OSCA
OSI-400	Inhibitor for HCl and hydroflounc (HF) to 350F bottomhole temperature (BHT)	A-AI	-	-	-	OSCA
OSI-400	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	OSCA
OSI-400	Inhibitor for HCl and HF to 255F BHT	A-AI	-	-	-	OSCA
OSR-100	100 mesh oil soluble resin for acid and water	A-FL	-	-	-	Halliburton
OSR-100	Acid fluid loss additives	A-FL	-	-	-	Halliburton
OSR-100	Acid diverting agent	A-DA	-	-	-	Halliburton
OSR-100	100 mesh oil soluble resin in water and acid	F-FLA	-	-	-	Halliburton
OWD-4	Microemulsion surfactant	A-NE	-	-	-	Nowsco-Fracmaster
OxyClean	Gel breaker and filter cake degrader. Treatment follows water base fracturing fluids. (80 to 270F BHT)	F-B	-	-	-	BJ Services
OxyClean	Gel breaker and filter cake degrader. Treatment follows water base fracturing fluids. (80 to 270F BHT)	F-B	-	-	-	Nowsco Fracmaster
P121	Paraffin dispersant	A-PC	-	-	-	Dowell
P124	Liquid paraffin dispersant inhibitor	A-PC	-	-	-	Dowell
P125	Paraffin inhibitor	A-PC	-	-	-	Dowell
P129	Environmental friendly solvents	A-MP	-	-	-	Dowell
P-1500	Scale inhibitor	A-SI	-	-	-	Nowsco-Fracmaster
P-306	Scale inhibitor	A-SI	-	-	-	Nowsco-Fracmaster
P800	Paraffin dispersant	A-PC	-	-	-	Dowell
PAD acid	HCl acid with a dispersed aromatic solvent	A-AS	-	-	-	Halliburton
Parachek 160	Paraffin inhibitor	A-PC	-	-	-	Halliburton
Paraclean	Oil external acid internal emulsion	A-RAS	-	-	-	Nowsco-Fracmaster
Paraclean acid	Thin acid in oil emulsion that thicknes in high water saturation zone and thins in high oil saturation zone	A-RAS	-	-	-	Nowsco-Fracmaster
Paragon	Diesel, Kerosene or aromatic	A-MP	-	-	-	Halliburton
Paragon 1	Diesel, Kerosene or aromatic	A-MP	-	-	-	Halliburton
Paragon 100	Diesel, Kerosene or aromatic	A-MP	-	-	-	Halliburton
Paragon 100	Environmental friendly solvents	A-MP	-	-	-	Halliburton
Parahib-3	Paraffin dispersant	A-PC	-	-	-	Nowsco-Fracmaster
Parahib-3	Liquid paraffin dispersant inhibitor	A-PC	-	-	-	Nowsco-Fracmaster
Parasol D	Anionic nonemulsifier for oil	A-NE	-	-	-	BJ Services
Parasperse	Paraffin dispersant	A-PC	-	-	-	Halliburton
Parasperse	Multi-purpose mutual solvent and paraffin dispersant	A-MP	-	-	-	Halliburton
Parasperse-T	Multi-purpose mutual solvent and paraffin dispersant	A-MP	-	-	-	Halliburton
Paraspese-T	Paraffin dispersant	A-PC	-	-	-	Halliburton
Paratrol 17	Paraffin inhibitor	A-PC	-	-	-	BJ Services
Paratrol 30	Paraffin inhibitor	A-PC	-	-	-	BJ Services
Paravan 25	Environmental friendly solvents	A-MP	-	-	-	BJ Services
Paravan D	Paraffin dispersant	A-PC	-	-	-	BJ Services
PC100	Nonionic fluorosurfactant for water and acid systems	F-S	-	-	-	Osca
PC-100	Paraffin inhibitor	A-PC	-	-	-	OSCA
PC-200	Paraffin dispersant	A-PC	-	-	-	OSCA
Pen-5	Emulsifier for polyemulsion, CO2 emulsions or foams	F-E	-	-	-	Halliburton
Pen-5	Foaming agent	F-F	-	-	-	Halliburton
Pen-5	Foaming agent for water and acids	F-F	-	-	-	Halliburton
Pen-5 (acid foaming agent)	Nonionic surfactant and nonemulsifier for water and acid	F-NE	-	-	-	Halliburton
Pen-5M	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	Halliburton
PEN-5M	Foaming agent	A-F	-	-	-	Halliburton
Pen-5M	Foaming agent for acid and water	A-F	-	-	-	Halliburton
Pen-88M	Microemulsion surfactant	A-NE	-	-	-	Halliburton
Pen-88M	Microemulsion surfactnat	F-NE	-	-	-	Halliburton
Penetrating acid	HCl acid with surfactants to disperse and suspend mud and fines	A-AS	-	-	-	Halliburton
Perforating acid IV	Acetic acid	A-AS	-	-	-	Dowell
Perforating acid L400	Acetic acid	A-AS	-	-	-	Dowell
Perforating acid L401	Acetic acid	A-AS	-	-	-	Dowell
Perforating acid VI	Acetic acid	A-AS	-	-	-	Dowell
Perforating acid VI (acetic weighted)	Acetic acid	A-AS	-	-	-	Dowell
Perforating acids I_III (HCl)	Acetic acid	A-AS	-	-	-	Dowell
pH Control-1L	Buffers (propriety)	F-PCA	-	-	-	Osca
pH Control-2L	Buffers (propriety)	F-PCA	-	-	-	Osca
pHControl 4-L hydroxide	Strong base	F-PCA	-	-	-	Osca
PI 902	Paraffin inhibitor	A-PC	-	-	-	Baker Oil Tools
PlyAcid	Acid external emulsion with gelling agents in acid	A-RAS	-	-	-	Nowsco-Fracmaster
Poly-CO2	Water and CO2 foam	F-OBS	-	-	-	BJ Services
Poly-CO2	Water and CO2 foam	F-OBS	-	-	-	Nowsco Fracmaster
Polyemulsion	Water external emulsion developed by Exxon	F-OBS	-	-	-	BJ Services
Polyemulsion	Water external emulsion developed by Exxon	F-OBS	-	-	-	Fracmaster
Polyemulsion	Water external emulsion developed by Exxon	F-OBS	-	-	-	Nowsco Fracmaster
Polymulsion	Acid external emulsion with gelling agents in acid	A-RAS	-	-	-	BJ Services
Potassium chloride	Potassium chloride (KCl)	A-MP	-	-	-	Baker Oil Tools
Potassium chloride	Potassium chloride (KCl)	A-MP	-	-	-	Nowsco-Fracmaster
PPA	Thin acid in oil emulsion that thicknes in high water saturation zone and thins in high oil saturation zone	A-RAS	-	-	-	BJ Services
Propnet Gold	200 - 450 F	F-PPC	-	-	-	Dowell
Propnet I J501	<175 F	F-PPC	-	-	-	Dowell
Propnet II J502	<300 F	F-PPC	-	-	-	Dowell

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Protectozone	Guar or hydroxypropylguar (HPG) system	A-PP	-	-	-	Dowell
Protectozone	Hydrxyethylcellulose (HEC) system, linear or crosslinked	A-PP	-	-	-	Dowell
Protectozone	Guar and hydroxypropylguar system	F-PP	-	-	-	Dowell
Protectozone	Hydrxythylcellulose system linear or crosslinked	F-PP	-	-	-	Dowell
Protectozone	Crosslinked hydroxypropylguar system	F-PP	-	-	-	Dowell
Protectozone Vf	Guar and hydroxypropylguar system	F-PP	-	-	-	Dowell
Protex-All	Scale inhibitor	A-SI	-	-	-	Halliburton
PS-1	Emulsifier for polyemulsion	F-E	-	-	-	Fracmaster
PS-1	Emulsifier for polyemulsion, CO2 emulsions or foams	F-E	-	-	-	Fracmaster
PS-2	Emulsifier for polyemulsion	F-E	-	-	-	Fracmaster
PS-2	Emulsifier for polyemulsion, CO2 emulsions or foams	F-E	-	-	-	Fracmaster
PS-3	Emulsifier for polyemulsion	F-E	-	-	-	Fracmaster
PS-3	Emulsifier for polyemulsion, CO2 emulsions or foams	F-E	-	-	-	Fracmaster
Pur Gel III	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Halliburton
PurGel	Crosslinked CMHPG low pH CO2 compatible fluid	F-CGS	-	-	-	Halliburton
Pur-gel III	CO2 compatible fracturing fluid	F-CGS	-	-	-	Halliburton
Pur-Gel III	Crosslinked gelled water foam	F-OBS	-	-	-	Halliburton
Qflow	Anionic nonemulsifier for oil	A-NE	-	-	-	San Antonio
Qflow	Anionic nonemulsifier	A-NE	-	-	-	San Antonio
QFLOW	Anionic nonemulsifier for oil, dispersible in water	A-NE	-	-	-	San Antonio
Qflow	Anti-sludge agent for acid	A-ASA	-	-	-	San Antonio
QTX-25A	Proprietary crosslinking agent. Titanium (Ti)	F-C	-	-	-	Nowsco Fracmaster
Quick Vis	Hydrxythylcellulose system linear or crosslinked	F-PP	-	-	-	Osca
RB-100	High-temperature oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Osca
RB-200	High-temperature oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Osca
RediFrac	Gelled water with FLA	F-WBG	-	-	-	Dowell
Regular flake	Flake benzoic acid	A-DA	-	-	-	BJ Services
Retarded acid 10	HCl and formic acid mixture	A-RAS	-	-	-	Dowell
Retarded acid 9	Formic acetic	A-RAS	-	-	-	Dowell
Retarded acid 9	Organic acid mixture equual to 15 % HCl	A-RAS	-	-	-	Dowell
RF-20	Liquid anionic polyacrylamide for acids	A-FR	-	-	-	San Antonio
RF-28	Anionic powder for acid, brines and fresh water	A-FR	-	-	-	San Antonio
RF-5A	Liquid cationic polyacrylamide for acids	A-FR	-	-	-	San Antonio
RG-20	Liquid viscosifier for phosphate ester gels	F-OGA	-	-	-	Nowsco Fracmaster
RG-21	Liquid acttivator for phos[hate ester gels	F-OGA	-	-	-	Nowsco Fracmaster
RG-25 SLR	Low temperature oil breaker	F-B	-	-	-	Nowsco Fracmaster
RG-25 SLR	Breaker for phosphate ester oil gels	F-B	-	-	-	Nowsco Fracmaster
RG-25 SLR	Oil breaker. Low Temperature	F-B	-	-	-	Nowsco Fracmaster
Rheo Gel	Crosslinked gelled oil for medium temperatures	F-OBS	-	-	-	BJ Services
Rheo Gel	Crosslinked gelled oil for higher temperatures	F-OBS	-	-	-	Nowsco Fracmaster
Rheo Gel	Continuous crosslinked gelled oil	F-OBS	-	-	-	BJ Services
Rheo Gel	Continuous crosslinked gelled oil	F-OBS	-	-	-	Nowsco Fracmaster
RheoFlex	Crosslinked guar system	F-CGS	-	-	-	Osca
RheoFlex	Crosslinked guar or HPG with borate	F-CGS	-	-	-	Osca
RheoGel	Crosslinked gelled oil for medium temperatures	F-OBS	-	-	-	Nowsco Fracmaster
RHF acid	Generates mud acid in fornation	A-RHF	-	-	-	Nowsco-Fracmaster
Ridox S	Powdered oxygen scavenger	A-OS	-	-	-	Nowsco-Fracmaster
Rigid Gel P5	Hydrxythylcellulose system linear or crosslinked	F-PP	-	-	-	Nowsco Fracmaster
River Frac	Water abnd friction reducer	F-WBG	-	-	-	Dowell
Rock salt	Graded rock salt	A-DA	-	-	-	BJ Services
Rock Salt	Graded rock salt	A-DA	-	-	-	OSCA
Rock salt	Water soluble diverting agent	A-DA	-	-	-	BJ Services
Rock salt	Water soluble diverting agent	A-DA	-	-	-	Nowsco-Fracmaster
Rock salt	Water soluble diverting agent	A-DA	-	-	-	OSCA
Rock Salt	100 mesh salt	F-FLA	-	-	-	Fracmaster
ROG-1	Gelled oil	F-OBS	-	-	-	Fracmaster
ROG-10	Gelled oil	F-OBS	-	-	-	Fracmaster
ROG-10	Crosslinked gelled oil for medium temperatures	F-OBS	-	-	-	Fracmaster
ROG-10	Crosslinked gelled oil for higher temperatures	F-OBS	-	-	-	Fracmaster
ROG-15	Gelled oil	F-OBS	-	-	-	Fracmaster
ROG-15	Crosslinked gelled oil for medium temperatures	F-OBS	-	-	-	Fracmaster
ROG-15	Crosslinked gelled oil for higher temperatures	F-OBS	-	-	-	Fracmaster
ROG-15	Continuous crosslinked gelled oil	F-OBS	-	-	-	Fracmaster
ROG-6	Gelled oil	F-OBS	-	-	-	Fracmaster
ROG-6	Crosslinked gelled oil for medium temperatures	F-OBS	-	-	-	Fracmaster
S1 (flakes)	Calcium chloride (CaCl)	A-MP	-	-	-	Dowell
S-10	Nonionic fluorosurfactant for water and acid systems	F-S	-	-	-	Fracmaster
S-10	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Fracmaster
S-10	Nonionic surfactant and nonemulsifier for water and acid	F-NE	-	-	-	Fracmaster
S-10	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Fracmaster
S100	100 mesh sand for acid, water and oil	A-FL	-	-	-	Dowell
S100	100 mesh oil soluble resin in water and acid	F-FLA	-	-	-	Dowell
S-150	Cationic nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
S-150	Cationic nonemulsifier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
S2 (pellets)	Calcium chloride (CaCl)	A-MP	-	-	-	Dowell
S-301	General purpose anionic surfactant	A-MP	-	-	-	BJ Services
S-400	Foaming agent	A-F	-	-	-	BJ Services
S-400	Foaming agent for water and brine	A-F	-	-	-	BJ Services
S-400	Foaming agent for acid and water	A-F	-	-	-	BJ Services
S-400	Foaming agent for water and methanol	A-F	-	-	-	BJ Services
S-400	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
S-400	Foaming agent	F-F	-	-	-	BJ Services
S-400	Foaming agent for water and acids	F-F	-	-	-	BJ Services
S-400	Foaming agent for water and methanol	F-F	-	-	-	BJ Services
S61	Liquid zinc chlonde (ZnCl)	A-CI	-	-	-	Dowell
S62	Liquid calcium bromide (CaBr)	A-CI	-	-	-	Dowell
S63	Liquid calcium chloride (CaCL2)	A-CI	-	-	-	Dowell
S-70	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Nowsco Fracmaster
SA Systems	Low surface tension acid plus iron stabilization	A-AS	-	-	-	BJ Services
SA-100	Fines suspending agent for acid	A-FS	-	-	-	OSCA
SA-300	Water-base surfactant and dispersant system for conventional mud systems	A-WBC	-	-	-	OSCA
Salt	Sodium chloride	A-MP	-	-	-	BJ Services
Salt	Sodium chloride	A-MP	-	-	-	Halliburton
Salt	Sodium chloride	A-MP	-	-	-	Nowsco-Fracmaster

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
Salt	Sodium chloride	A-MP	-	-	-	OSCA
Salt	Sodium chloride	A-MP	-	-	-	San Antonio
Salt-trimix	Graded rock salt	A-DA	-	-	-	BJ Services
sandbBlok-1	100 mesh salt	A-FL	-	-	-	San Antonio
Sandblok-1	Graded rock salt	A-DA	-	-	-	San Antonio
Sandblok-1	Water soluble diverting agent	A-DA	-	-	-	San Antonio
SandBlok-3	100 mesh benzoic acid for acid, water or foam fracturing treatments	A-FL	-	-	-	San Antonio
Sandblok-3	Flake benzoic acid	A-DA	-	-	-	San Antonio
Sandblok-4	Acid diverting agent	A-DA	-	-	-	San Antonio
Sandoil	Oil without viscosifier	F-OBS	-	-	-	Halliburton
Sandstone acid	Generates mud acid in formation	A-RHF	-	-	-	BJ Services
Sandstone acid	Generates mud acid in formation	A-RHF	-	-	-	Nowsco-Fracmaster
Sappflush	Water-base mud removal system	A-MP	-	-	-	Nowsco-Fracmaster
Sappflush	Water-base mud removal non-reactive solution	A-As	-	-	-	Nowsco-Fracmaster
Saturn I	Crosslinked guar system	F-CGS	-	-	-	BJ Services
SC-10	Nonionic nonemulsifier	A-NE	-	-	-	San Antonio
SC-10	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	San Antonio
SC-100	Scale inhibitor	A-SI	-	-	-	OSCA
SC-172	Liquid scale control component	A-MP	-	-	-	Nowsco-Fracmaster
SC-21	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	San Antonio
SC-21	Fines suspending agent for acid	A-FS	-	-	-	San Antonio
SC-22	Cationic nonemulsifier for acid and water	A-NE	-	-	-	San Antonio
SC-25	Oil wetting surfactant for limestone reservoirs and moderate temperature	A-AR	-	-	-	San Antonio
SC-25	Oil wetting surfactant for limestone reservoirs and high temperature	A-AR	-	-	-	San Antonio
SC-25	Anionic nonemulsifier	A-NE	-	-	-	San Antonio
SC-25	Foaming agent for water and brine	A-F	-	-	-	San Antonio
SC-40	Nonionic nonemulsifier	A-NE	-	-	-	San Antonio
SC-40	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	San Antonio
SC-5	Oil wetting surfactant for limestone reservoirs and moderate temperature	A-AR	-	-	-	San Antonio
SC-5	Anionic nonemulsifier	A-NE	-	-	-	San Antonio
SCA-130	H2S corrsion inhibitor for coiled tubing	A-CI	-	-	-	Halliburton
SCA-130	H2S corrosion inhibitor	A-CI	-	-	-	Halliburton
SCA-130	H2S inhibitor	A-MP	-	-	-	Halliburton
Scalechek HT	Scale inhibitor	A-SI	-	-	-	Halliburton
SCB-100	Scale inhibitor	A-SI	-	-	-	OSCA
SCP-2	Scale inhibitor	A-SI	-	-	-	Halliburton
SD-180	EDTA - Sects	A-IC	-	-	-	Nowsco-Fracmaster
SD-181	EDTA - Sects	A-IC	-	-	-	Nowsco-Fracmaster
SEM-5	Emulsifier for polyemulsion	F-E	-	-	-	Halliburton
SEM-5	Emulsifier for polyemulsion, CO2 emulsions or foams	F-E	-	-	-	Halliburton
SEM-7	Emulsifier for polyemulsion	F-E	-	-	-	Halliburton
SEM-7	Emulsifier for polyemulsion, CO2 emulsions or foams	F-E	-	-	-	Halliburton
Sequestering acid	Acid plus iron stabilization	A-AS	-	-	-	BJ Services
SF-1	Foaming agent	F-F	-	-	-	Nowsco Fracmaster
SF-1	Foaming agent for water and brine	F-F	-	-	-	Nowsco Fracmaster
SF-100	100 mesh sand for acid, water and oil	A-FL	-	-	-	San Antonio
SF-15	Foaming agent	F-F	-	-	-	Nowsco Fracmaster
SF-16	Foaming agent	F-F	-	-	-	Nowsco Fracmaster
SF-17	Foaming agent	F-F	-	-	-	Nowsco Fracmaster
Sf-18	Foaming agent	F-F	-	-	-	Nowsco Fracmaster
Sf-19	Foaming agent	F-F	-	-	-	Nowsco Fracmaster
SF-2	nonionic fluorosurfactant for acid or water	A-S	-	-	-	San Antonio
SF-2	Nonionic fluorosurfactant for acid and water	A-NE	-	-	-	San Antonio
SF-2	Foaming agent for acid and water	A-F	-	-	-	Nowsco-Fracmaster
SF-2	Foaming agent	F-F	-	-	-	Nowsco Fracmaster
SF-2	Foaming agent for water and acids	F-F	-	-	-	Nowsco Fracmaster
SF-23	Foaming agent for acid and water	A-F	-	-	-	Nowsco-Fracmaster
SF-3	Foamer for hydrocarbons	A-F	-	-	-	Nowsco-Fracmaster
SF-3	Foaming agent for oil and condensates	A-F	-	-	-	Nowsco-Fracmaster
SF-3	Foaming agent for hydrocarbons	F-F	-	-	-	Nowsco Fracmaster
SF-3	Foaming agent for oil and condensate	F-F	-	-	-	Nowsco Fracmaster
SF-6D	Foaming agent for water and acids	F-F	-	-	-	Nowsco Fracmaster
SF-8	Foaming agent for water and methanol	A-F	-	-	-	Nowsco-Fracmaster
SF-8	Foaming agent for 100% methanol and methanol water mixtures	A-F	-	-	-	Nowsco-Fracmaster
SF-8	Foaming agent for water and methanol	F-F	-	-	-	Nowsco Fracmaster
SF-8	Foaming agent for 100% methanol and methanol-water mixtures	F-F	-	-	-	Nowsco Fracmaster
SFA-100	100 mesh sand for use in water, oil and acid	F-FLA	-	-	-	Fracmaster
SFA-200	Selectively graded fine mesh silica flour for water, oil and acid	F-FLA	-	-	-	Fracmaster
SG-1	Powdered oxygen scavenger	A-OS	-	-	-	Nowsco-Fracmaster
SG-1	Powdered stabilizer for high temperatures	F-GS	-	-	-	Fracmaster
SG-2	Powdered stabilizer for high temperatures	F-GS	-	-	-	Fracmaster
SGA II	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	Halliburton
SGA II	Mixture of HCl and gelling agent	A-RAS	-	-	-	Halliburton
SGA II (250F)	Mixture of HCl and gelling agent	A-RAS	-	-	-	Halliburton
SGA III	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	Halliburton
SGA-1	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	Halliburton
SGA-1 (160F)	Mixture of HCl and gelling agent	A-RAS	-	-	-	Halliburton
SGA-HT	Liquid acid viscosifier	A-WBP	-	-	-	Halliburton
SGA-HT	Liquid acid viscosifier for up to 15 %	A-WBP	-	-	-	Halliburton
SGA-HT (400F)	Mixture of HCl and gelling agent	A-RAS	-	-	-	Halliburton
SGA-I	Liquid acid viscosifier	A-WBP	-	-	-	Halliburton
SGA-II	Liquid acid viscosifier	A-WBP	-	-	-	Halliburton
SGA-III	Liquid acid viscosifier	A-WBP	-	-	-	Halliburton
SGMA	(Shell Development)	A-SG	-	-	-	Dowell
SGMA	(Shell Development)	A-SG	-	-	-	Halliburton
SGMA	(Shell Development)	A-SG	-	-	-	Nowsco-Fracmaster
SGMA	(Shell Development)	A-SG	-	-	-	OSCA
SI 351	Scale inhibitor	A-SI	-	-	-	Baker Oil Tools
SI 352	Liquid scale control component	A-MP	-	-	-	Baker Oil Tools
SI 353	Scale inhibitor	A-SI	-	-	-	Baker Oil Tools
Silica flour	Selectively graded fine mesh silica flour for water, oil and acid	F-FLA	-	-	-	BJ Services
SLA-46	Anionic nonemulsifier	F-NE	-	-	-	BJ Services

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
SLA-46	Anionic nonemulsifier for water and acid	F-NE	-	-	-	BJ Services
SLA-48	Oil wetting surfactant for limestone reservoirs and moderate temperature	A-AR	-	-	-	BJ Services
SLA-48	Oil wetting surfactant for limestone reservoirs and high temperature	A-AR	-	-	-	BJ Services
SLPC-4	CMHEC in diesel slurry	F-CMG	-	-	-	BJ Services
SLUDGE 2	Anionic nonemulsifier	A-NE	-	-	-	San Antonio
Sludge-2	Anti-sludge agent for acid	A-ASA	-	-	-	San Antonio
Soda Ash	Strong base	F-PCA	-	-	-	Fracmaster
Sodium	Powdered weak base	F-PCA	-	-	-	Osca
Sodium Acetate	Breaker for phosphate ester oil gels	F-B	-	-	-	BJ Services
Sodium Acetate	Breaker for phosphate ester oil gels	F-B	-	-	-	Osca
Sodium Acetate	Buffers (propriety)	F-PCA	-	-	-	BJ Services
Sodium bicarbonate	Powdered weak base	F-PCA	-	-	-	BJ Services
Sodium Borate	Proprietary crosslinking agent. Borate	F-C	-	-	-	BJ Services
Sodium Carbonate	Breaker for phosphate ester oil gels	F-B	-	-	-	BJ Services
Sodium carbonate	Strong base	F-PCA	-	-	-	BJ Services
Sodium Carbonate	Buffers (propriety)	F-PCA	-	-	-	BJ Services
Sodium chloride	Sodium chloride	A-MP	-	-	-	Baker Oil Tools
SodiumAcetate	Oil breaker. Low Temperature	F-B	-	-	-	BJ Services
Solv 140	Diesel, Kerosene or aromatic	A-MP	-	-	-	OSCA
Solv 150	Diesel, Kerosene or aromatic	A-MP	-	-	-	OSCA
Solw-90	Mutual solvent (EGMBE)	A-MS	-	-	-	San Antonio
SP breaker	Oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Halliburton
SpacerSperse	Oil-base mud dispersant	A-MP	-	-	-	Halliburton
Special custom blend	Mud removal and clay mineral acidizing, low surface tension	A-MAP	-	-	-	Dowell
Special custom blend	Mud removal and clay mineral acidizing, low surface tension	A-MAP	-	-	-	Halliburton
SpectraFrac G	Crosslinked guar system	F-CGS	-	-	-	Nowsco Fracmaster
SpectraFrac G	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	BJ Services
SpectraFrac G	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Nowsco Fracmaster
SpectralFrac G	Crosslinked guar system	F-CGS	-	-	-	BJ Services
SPERSE-All	Foaming agent	A-F	-	-	-	Halliburton
SPERSE-All	Foaming agent	A-F	-	-	-	Halliburton
SPERSE-All	Foaming agent for water and brine	A-F	-	-	-	Halliburton
SPERSE-All	Foaming agent for acid and water	A-F	-	-	-	Halliburton
SR-1	Powdered scale control component of gyp removal process	A-MP	-	-	-	Nowsco-Fracmaster
SS 100	Foaming agent	F-F	-	-	-	Osca
SS 200	Foaming agent	F-F	-	-	-	Osca
SS 200	Foaming agent for water and acids	F-F	-	-	-	Osca
SS-10	H2S corrsion inhibitor for coiled tubing	A-CI	-	-	-	OSCA
SS-10	H2S corrosion inhibitor	A-CI	-	-	-	OSCA
SS-10	H2S inhubitor	A-MP	-	-	-	San Antonio
SS-100	Foaming agent	A-F	-	-	-	OSCA
SS-100	Foaming agent for water and brine	A-F	-	-	-	OSCA
SS-100	Foaming agent for acid and water	A-F	-	-	-	OSCA
SS-100	Foaming agent for water and methanol	A-F	-	-	-	OSCA
SS-150	Foaming agent	A-F	-	-	-	OSCA
SSO-21	Foaming agent for water and acids	F-F	-	-	-	Halliburton
SSO-21M	Microemulsion surfactant	A-NE	-	-	-	Halliburton
SSO-21M	Fines suspending agent for acid	A-FS	-	-	-	Halliburton
SSO-21M	Foaming agent for acid and water	A-F	-	-	-	Halliburton
SSO-21M	Coal surfactant	F-S	-	-	-	Halliburton
SSO-21M	Microemulsion surfactnat	F-NE	-	-	-	Halliburton
SST-245	Scale inhubitor	A-SI	-	-	-	Nowsco-Fracmaster
ST 100	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Baker Oil Tools
ST 100	Fines suspending agent for acid	A-FS	-	-	-	Baker Oil Tools
ST 101	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Baker Oil Tools
ST 101	Microemulsion surfactant	A-NE	-	-	-	Baker Oil Tools
ST 101	Paraffin dispersant	A-PC	-	-	-	Baker Oil Tools
ST 167	Fines suspending agent for acid	A-FS	-	-	-	Baker Oil Tools
ST 340	Nonionic fluorosurfactant for acid or water	A-S	-	-	-	Baker Oil Tools
ST 340	Nonionic fluorosurfactant for acid and water	A-NE	-	-	-	Baker Oil Tools
ST101	Pipe dope removal	A-MP	-	-	-	Baker Oil Tools
Stabilized foam solution (SFS)	Water N2 foam with or without gel	F-OBS	-	-	-	Dowell
StaLive acid	HCI and chemical retarder mixture	A-RAS	-	-	-	BJ Services
Star 3	Cationic clay stabilizer	A-CS	-	-	-	San Antonio
StrataFrac II service	Crosslinked HPG with 3 to 5% hydrocarbon for fluid loss	F-CGS	-	-	-	Dowell
Sulfamic acid	Sulfamic acid	F-PCA	-	-	-	BJ Services
Sulfamic acid	Sulfamic acid	F-PCA	-	-	-	Nowsco Fracmaster
Sulfamic acid	Sulfamic acid	F-PCA	-	-	-	Osca
Super allo Frac II	Crosslinked gelled oil for higher temperatures	F-OBS	-	-	-	BJ Services
Super A-Sol	Amoco Super A-Sol	A-MS	-	-	-	Dowell
Super A-Sol	Amoco Super A-Sol	A-MS	-	-	-	Halliburton
Super A-Sol	Amoco Super A-Sol	A-MS	-	-	-	Nowsco-Fracmaster
Super A-Sol	Amoco Super A-Sol	A-MS	-	-	-	OSCA
Super flake	Flake benzoic acid	A-DA	-	-	-	BJ Services
Super Rheo Gel	Crosslinked gelled oil for medium temperatures	F-OBS	-	-	-	BJ Services
Super Rheo Gel	Crosslinked gelled oil for higher temperatures	F-OBS	-	-	-	BJ Services
Super Sand	Acid external emulsion with gelling agents in acid	A-KAS	-	-	-	Dowell
Super SandFrac K-1	Water external emulsion developed by Exxon	F-OBS	-	-	-	Dowell
Super Vis D	Hydrxythylcellulose system linear or crosslinked	F-PP	-	-	-	Osca
Super X (28%)	HCI strenghts above 20%	A-AS	-	-	-	Dowell
Super X emulsion	Oil external acid internal emulsion	A-RAS	-	-	-	Dowell
Super Xf98	HCI and chemical retarder mixture	A-RAS	-	-	-	Dowell
SuperEmulsiFrac	Water external emulsion developed by Exxon	F-OBS	-	-	-	Halliburton
SuperFlo III	nonionic fluorosurfactant for acid or water	A-S	-	-	-	Halliburton
SuperFlo III	Nonionic fluorosurfactant for acid and water	A-NE	-	-	-	Halliburton
SuperFlo III	Nonionic fluorosurfactant for water and acid systems	F-S	-	-	-	Halliburton
SuperFlo III	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Halliburton
SuperFlo III	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Halliburton
SuperFoam	Crosslinked gelled water foam	F-OBS	-	-	-	Dowell
SuperFoam-1	Foaming agent	A-F	-	-	-	San Antonio
Superfoam-1	Foaming agent for water and methanol	A-F	-	-	-	San Antonio
SuperFoam-2	Foaming agent	A-F	-	-	-	San Antonio
Supersol	Chemically retarded HCI and formic acid mixture	A-RAS	-	-	-	BJ Services
Supersol	Organic acid mixture equual to 15 % HCI	A-RAS	-	-	-	BJ Services
SuperSol 10-20-30	HCI and acetic acid mixture	A-RAS	-	-	-	BJ Services
SuperSol 10-20-30	HCI and formic acid mixture	A-RAS	-	-	-	BJ Services

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
SUPER-WEL-FRAC	Proppants for holding formation cracks open.	F-RCP	-	-	-	Messina
SWIC ACID	Specialty acid for sour gas wells	A-RAS	-	-	-	Halliburton
SWIC II	Specialty acid for sour gas wells	A-RAS	-	-	-	Halliburton
Tarchek	Asphaltene inhibitor	A-MP	-	-	-	Halliburton
TBA-110	Graded rock salt	A-DA	-	-	-	Halliburton
TBA-110	Acid diverting agent	A-DA	-	-	-	Halliburton
TBA-110	Water soluble diverting agent	A-DA	-	-	-	Halliburton
TechSolv 2000	Barium sulfate scale solvent	A-MP	-	-	-	BJ Services
Temblok	Crosslinked guar or hydroxypropylguar system	F-PP	-	-	-	Halliburton
Temblok 100	Guar or hydroxypropylguar (HPG) system	A-PP	-	-	-	Halliburton
Temblok 100	Guar and hydroxypropylguar system	F-PP	-	-	-	Halliburton
Temblok 50	Crosslinked hydroxypropylguar system	F-PP	-	-	-	Halliburton
Temblok 50	Hydroxyethylcellulose (HEC) system, linear or crosslinked	A-PP	-	-	-	Halliburton
Temblok 50	Crosslinked guar or hydroxypropylguar	A-PP	-	-	-	Halliburton
Temblok 75	Hydroxythylcellulose system linear or crosslinked	F-PP	-	-	-	Halliburton
Temblok 90	Guar and hydroxypropylguar system	F-PP	-	-	-	Halliburton
TFA-380	Cationic fluorosurfactant for acid or water	A-S	-	-	-	Dowell
TFA-380	Cationic fluorosurfactant for water and acid systems	F-S	-	-	-	Dowell
Thermagel	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Halliburton
Thermagel	Crosslinked CMHPG high temperature fluid	F-CGS	-	-	-	Halliburton
TLC-15	Oil soluble graded napthalene	A-DA	-	-	-	San Antonio
TLC-15S	Acid diverting agent	A-DA	-	-	-	Halliburton
TLC-80	Flake benzoic acid	A-DA	-	-	-	Halliburton
TLC-80	Acid diverting agent	A-DA	-	-	-	Halliburton
TLC-80	Water soluble diverting agent	A-DA	-	-	-	Halliburton
TLC-W3	Water soluble diverting agent	A-DA	-	-	-	Halliburton
U100	Proprietary mutual solvent	A-MS	-	-	-	Dowell
U101	Proprietary mutual solvent	A-MS	-	-	-	Dowell
U101	Asphaltene inhibitor	A-MP	-	-	-	Dowell
U103	Oil external emulsifier for HCl and HCl organic mixtures	A-E	-	-	-	Dowell
U28	Strong base	F-PCA	-	-	-	Dowell
U42	Liquid scale control component	A-MP	-	-	-	Dowell
U42	Specialty acid for sour gas wells	A-RAS	-	-	-	Dowell
U42 (liquid)	EDTA - Sects	A-IC	-	-	-	Dowell
U43	Sulfamic acid	F-PCA	-	-	-	Dowell
U51	Diesel, Kerosene or aromatic	A-MP	-	-	-	Dowell
U52	Diesel, Kerosene or aromatic	A-MP	-	-	-	Dowell
U66	Mutual solvent (EGMBE)	A-MS	-	-	-	Dowell
U74	General purpose anionic surfactant	A-MP	-	-	-	Dowell
U74 (DAO acid)	Oil internal emulsifier for HCl and HCl organic	A-E	-	-	-	Dowell
U78A (not for diesel)	Emulsifier for polyemulsion	F-E	-	-	-	Dowell
U78E	Emulsifier for polyemulsion, CO2 emulsions or foams	F-E	-	-	-	Dowell
U79	Amoco mutual solvent	A-MS	-	-	-	Dowell
U80	Stabilizer for acid emulsion	A-MP	-	-	-	Dowell
U82	Paraffin dispersant	A-PC	-	-	-	Dowell
Ucarbcide 250	Bactericide	F-OGA	-	-	-	Fracmaster
Ultra Perm CRE	Encapsulated enzyme breaker	F-B	-	-	-	BJ Services
Ultra-1000	Crosslinked guar system	F-CGS	-	-	-	Nowsco Fracmaster
Ultra-2000	Crosslinked HPG	F-CGS	-	-	-	Nowsco Fracmaster
UltraFlo	Hydroxyethylcellulose (HEC) system, linear or crosslinked	A-PP	-	-	-	Nowsco-Fracmaster
Ultraflo 1000	Economical, low residue crosslinked system	F-CGS	-	-	-	Nowsco Fracmaster
Ultraflo 2000	Crosslinked guar or HPG with borate	F-CGS	-	-	-	Nowsco Fracmaster
UltraFlush	Water-base mud removal system	A-MP	-	-	-	BJ Services
Ultrafrac	CO2 compatible fracturing fluid	F-CGS	-	-	-	Nowsco Fracmaster
Ultrafrac 3000	Crosslinked CMHPG low pH CO2 compatible fluid	F-CGS	-	-	-	Nowsco Fracmaster
UltraPerm CRB	Encapsulated oxidative breaker (140 to 225 F BHT)	F-B	-	-	-	BJ Services
UltraPerm CRB	Encapsulated oxidative breaker (225 to 350 F BHT)	F-B	-	-	-	BJ Services
UltraPerm CRB	Encapsulated oxidative breaker (225 to 350 F BHT)	F-B	-	-	-	Nowsco Fracmaster
UltraPerm CRB	Encapsulated oxidative breaker (BHT < 140F)	F-B	-	-	-	BJ Services
UltraPerm CRB	Encapsulated oxidative breaker (BHT < 140F)	F-B	-	-	-	Nowsco Fracmaster
Ultratherm	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Nowsco Fracmaster
Ultratherm 3000	Crosslinked CMHPG high temperature fluid	F-CGS	-	-	-	Nowsco Fracmaster
Ultravis D2000	Controllable delayed crosslinked HPG system	F-CGS	-	-	-	Nowsco Fracmaster
Ultravis LPW	Crosslinked HPG with 3 to 5% hydrocarbon for fluid loss	F-CGS	-	-	-	Nowsco Fracmaster
US-2	Mutual solvent (EGMBE)	A-MS	-	-	-	BJ Services
US-2	Proprietary mutual solvent	A-MS	-	-	-	BJ Services
US-40	Mutual solvent (EGMBE)	A-MS	-	-	-	BJ Services
US-40	Multi-purpose mutual solvent and paraffin dispersant	A-MP	-	-	-	BJ Services
VCA	Crosslinked high viscosity acid	A-RAS	-	-	-	Dowell
VCA	Crosslinked high viscosity acid	A-RAS	-	-	-	Halliburton
Veragel	Guar or hydroxypropylguar (HPG) system	A-PP	-	-	-	Nowsco-Fracmaster
Versagel	Crosslinked HPG	F-CGS	-	-	-	Halliburton
Versagel HT	Crosslinked HPG	F-CGS	-	-	-	Halliburton
VersaGel HT	Crosslinked HPG with high temperature stabilizers	F-CGS	-	-	-	Halliburton
VersaGel HT	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Halliburton
Versagel LT	Crosslinked HPG	F-CGS	-	-	-	Halliburton
VersaGel LT	CO2 compatible fracturing fluid	F-CGS	-	-	-	Halliburton
Versol I	Water-base surfactant and dispersant system for conventional mud systems	A-WBC	-	-	-	BJ Services
Versol II	Oil-base mud dispersion	A-WBC	-	-	-	BJ Services
Versol II	Surfactant and clay stabilizer blend for removing oil base mud damage	A-MP	-	-	-	BJ Services
Versol II	Oil-base mud removal nonreactive	A-As	-	-	-	BJ Services
Versol V	Surfactant and clay stabilizer blend for removing oil base mud damage	A-MP	-	-	-	BJ Services
Versol V	Oil-base mud removal nonreactive	A-As	-	-	-	BJ Services
VI-10	Liquid viscosifier for soap type gels	F-OGA	-	-	-	Halliburton
VicCon NF	High-temperature oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Halliburton
ViCon NF	Oxidizer breaker for guar, guar and cellulose derivatives	F-B	-	-	-	Halliburton
Viking	Crosslinked guar system	F-CGS	-	-	-	BJ Services
Viking	Economical, low residue crosslinked system	F-CGS	-	-	-	BJ Services
Viking	Controllable delayed crosslinked HPG system	F-CGS	-	-	-	Nowsco Fracmaster
Viking	Crosslinked guar system	F-CGS	-	-	-	Nowsco Fracmaster
Viking D	Crosslinked guar system	F-CGS	-	-	-	BJ Services
Viking D	Crosslinked guar system	F-CGS	-	-	-	Nowsco Fracmaster
Viking D	Economical, low residue crosslinked system	F-CGS	-	-	-	BJ Services
Viking D	Controllable delayed crosslinked HPG system	F-CGS	-	-	-	Nowsco Fracmaster

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
VIS	Powdered hydroxethylcellulose viscosifier. Delayed hydration polymer for use as a secondary gel or batch mix	F-WBP	-	-	-	Osca
Vis	Powdered hydroxyethylcellulose viscosifier	F-WBP	-	-	-	Osca
Vis-O-Frac	Gelled oil	F-OBS	-	-	-	Halliburton
W22	Cationic nonemulsifier for water and acid	F-NE	-	-	-	Dowell
W27	Cationic nonemulsifier for acid and water	A-NE	-	-	-	Dowell
W27	Cationic nonemulsifier for water and acid	F-NE	-	-	-	Dowell
W35	Anionic nonemulsifier	A-NE	-	-	-	Dowell
W35	Anti-sludge agent for acid	A-ASA	-	-	-	Dowell
W35	Anionic nonemulsifier	F-NE	-	-	-	Dowell
W39	Cationic nonemulsifier for acid and water	A-NE	-	-	-	Dowell
W39	Cationic nonemulsifier for water and acid	F-NE	-	-	-	Dowell
W53	Nonionic nonemulsifier	A-NE	-	-	-	Dowell
W53	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Dowell
W53	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Dowell
W-53	Nonionic nonemulsifier	F-NE	-	-	-	Dowell
W54	Nonionic nonemulsifier	A-NE	-	-	-	Dowell
W54	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Dowell
W54	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Dowell
WA 200	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Osca
WA 200	Nonionic surfactant and nonemulsifier for water and acid	F-NE	-	-	-	Osca
WA-100	Nonionic nonemulsifier	A-NE	-	-	-	OSCA
WA-100	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	OSCA
WA-200	Nonionic nonemulsifier	A-NE	-	-	-	OSCA
WA-200	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	OSCA
WAC-11D	Combination graded oil soluble resin and degradable low molecular weight polymers. Non-damaging for water and acid	F-FLA	-	-	-	Halliburton
WAC-9	Acid fluid loss additives	A-FL	-	-	-	Halliburton
WAC-9	Selectively graded fine mesh silica flour for water, oil and acid	F-FLA	-	-	-	Halliburton
Water Frac	Gelled water	F-WBG	-	-	-	Dowell
Water Frac	Gelled water	F-WBG	-	-	-	Halliburton
Water Frac plus fluid loss (FLA)	Gelled water with FLA	F-WBG	-	-	-	Halliburton
WaterFrac	CO2 compatible fracturing fluid	F-CGS	-	-	-	Halliburton
WC 500	Hydroxythylcellulose system linear or crosslinked	F-PP	-	-	-	Dowell
WC 750	Hydroxythylcellulose system linear or crosslinked	F-PP	-	-	-	Dowell
WE-60NE	Nonionic nonemulsifier for acid and water	A-NE	-	-	-	Nowsco-Fracmaster
Well Wash 2000	Oil-base mud dispersant	A-MP	-	-	-	OSCA
Well Wash 400	Water-base mud removal system	A-MP	-	-	-	San Antonio
Wellwash-1000	Oil-base mud dispersion	A-WBC	-	-	-	OSCA
Wellwash-1000	Water-base surfactant and dispersant system for conventional mud systems	A-WBC	-	-	-	OSCA
WF 117	Foaming agent	A-F	-	-	-	Baker Oil Tools
WF 117	Foaming agent for water and brine	A-F	-	-	-	Baker Oil Tools
WF 117	Foaming agent for acid and water	A-F	-	-	-	Baker Oil Tools
WF 200 (HPG)	Gelled water	F-WBG	-	-	-	Dowell
WF-1	Foaming agent	A-F	-	-	-	Nowsco-Fracmaster
WF-1	Foaming agent for acid and water	A-F	-	-	-	Nowsco-Fracmaster
WF-1	Foaming agent for water and methanol	A-F	-	-	-	Nowsco-Fracmaster
WF-1	Emulsifier for polyemulsion, CO2 emulsions or foams	F-E	-	-	-	Fracmaster
WF-1	Foaming agent	F-F	-	-	-	Fracmaster
WF-1	Foaming agent for water and brine	F-F	-	-	-	Fracmaster
WF100 (guar)	Gelled water	F-WBG	-	-	-	Dowell
WF200	Low residue gelled water (HPG)	F-WBG	-	-	-	Dowell
WG-11	Powdered hydroxypropylguar gum, delayed hydration polymer, for batch mix. No internal breaker	F-WBP	-	-	-	Halliburton
WG-11	Powdered HPG. Delayed hydration polymer, designed for batch mix applications for borate crosslink	F-WBP	-	-	-	Halliburton
WG-11	Powdered HOG for oil base slurry	F-WBP	-	-	-	Halliburton
WG-11	Low residue gelled water (HPG)	F-WBG	-	-	-	Halliburton
WG-15	Powdered guar gum polymer, delayed hydration for batch mix:	F-WBP	-	-	-	Fracmaster
WG-15	Powdered guar gum polymer. Rapid hydration for use in oil base slurrys	F-WBP	-	-	-	Fracmaster
WG-16	Powdered hydroxypropylguar gum, delayed hydration polymer, for batch mix. No internal breaker	F-WBP	-	-	-	Fracmaster
WG-16	Powdered HPG. Delayed hydration polymer, designed for batch mix applications for borate crosslink	F-WBP	-	-	-	Fracmaster
WG-16	Powdered HOG for oil base slurry	F-WBP	-	-	-	Fracmaster
WG-17	Powdered hydroxethylcellulose viscosifier. Delayed hydration polymer for use as a secondary gel or batch mix	F-WBP	-	-	-	Halliburton
WG-17	Powdered hydroxyethylcellulose viscosifier	F-WBP	-	-	-	Halliburton
WG-17	No residue gelled water (HEC)	F-WBG	-	-	-	Halliburton
WG-18	Powdered CMHPG for oil base slurry	F-WBP	-	-	-	Halliburton
WG-18	High yield CMHPG (Slurrible)	F-WBP	-	-	-	Halliburton
WG-18	Chemically modified natural polymer CMHPG	F-WBP	-	-	-	Halliburton
WG-19	Powdered guar gum polymer, delayed hydration for batch mix:	F-WBP	-	-	-	Halliburton
WG-20	Chemically modified natural polymer for gelling up to 80% methanol	A-WBP	-	-	-	Halliburton
WG-20	Chemically modified natural polymer for gelling up to 100% methanol	A-WBP	-	-	-	Halliburton
WG-20	Viscosifier for pure methanol	A-MP	-	-	-	Halliburton
WG-22	Powdered guar gum polymer. Rapid hydration for use in oil base slurrys	F-WBP	-	-	-	Halliburton
WG-24	Powdered xanthate polyner for viscosifying 15 % or less hydrochlonc	A-WBP	-	-	-	Halliburton
WG-24	Powdered xanthan gum gelling agents as carrier fluid for gravel packs	F-WBP	-	-	-	Halliburton
WG-299	Powdered xanthate polyner for viscosifying 15 % or less hydrochlonc	A-WBP	-	-	-	Baker Oil Tools
WG-31	Powdered guar gum polymer. Rapid hydration for use in oil base slurrys	F-WBP	-	-	-	Halliburton
WG-32	Powdered guar gum polymer. Rapid hydration for use in oil base slurrys	F-WBP	-	-	-	Halliburton
WG-33	Chemically modified HEC for crosslinked fluid. No internal breaker	F-WBP	-	-	-	Halliburton
WG-5	Chemically modified HEC for crosslinked fluid. No internal breaker	F-WBP	-	-	-	Fracmaster
WG-5	Powdered carboxymethylhydroxethylcellulose viscosifier, Rapid hydration for batch and continuous mix	F-WBP	-	-	-	Fracmaster
WG-8	Powdered CMHPG for oil base slurry	F-WBP	-	-	-	Fracmaster
WG-8	High yield CMHPG (Slurrible)	F-WBP	-	-	-	Fracmaster
WG-8	Chemically modified natural polymer CMHPG	F-WBP	-	-	-	Fracmaster
WG-9	Chemically modified natural polymer CMHPG	F-WBP	-	-	-	Fracmaster
WH 500 (not crosslinked)	Hydroxyethylcellulose (HEC) system, linear or crosslinked	A-PP	-	-	-	Dowell
WH500	Crosslinked hydroxypropylguar system	F-PP	-	-	-	Dowell

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
WH700 (not crosslinked)	Crosslinked hydroxypropylguar system	F-PP	-	-	-	Dowell
Whowco suds	Foaming agent	F-F	-	-	-	Halliburton
WL 300	Guar or hydroxypropylguar (HPG) system	A-PP	-	-	-	Dowell
WL 300	Guar and hydroxypropylguar system	F-PP	-	-	-	Dowell
WL 500	Guar or hydroxypropylguar (HPG) system	A-PP	-	-	-	Dowell
WL 500	Guar and hydroxypropylguar system	F-PP	-	-	-	Dowell
WLC-4	FLA, Powdered fully degradable FLA for water base fluid used 120 to 350 F	F-FLA	-	-	-	Halliburton
WLC-5	FLA, Powdered fully degradable FLA for water base fluid at 70 to 350 F with internal breaker	F-FLA	-	-	-	Halliburton
WLC-6 (<150F)	FLA, Powdered fully degradable FLA for water base fluid at 70 to 350 F with internal breaker	F-FLA	-	-	-	Halliburton
WS-50	Emulsifier for polyemulsion	F-E	-	-	-	Nowsco Fracmaster
WS-6 ONE	Nonionic nonemulsifier	F-NE	-	-	-	Nowsco Fracmaster
WS-6 ONE	Nonionic nonemulsifier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
WS-6 ONE	Nonionic surfactant and nonemulsfier for water and acid	F-NE	-	-	-	Nowsco Fracmaster
WS-60NE	Nonionic surfactant and nonemulsifier for acid and water	A-NE	-	-	-	Nowsco-Fracmaster
WS-70	Nonionic fluorosurfactant for acid and water	A-NE	-	-	-	Nowsco-Fracmaster
WS-70	Nonionic fluorosurfactant for water and acid systems	F-S	-	-	-	Nowsco Fracmaster
WS-70	Nonionic fluorosurfactant for water and acid	F-NE	-	-	-	Nowsco Fracmaster
WS-75	nonionic fluorosurfactant for acid or water	A-S	-	-	-	Nowsco-Fracmaster
XCD	Powdered xanthan gum gelling agents as carrier fluid for gravel packs	F-WBP	-	-	-	Osca
Xcide 102	Biocide	F-OGA	-	-	-	Nowsco Fracmaster
Xcide 102W	Bacteriacide	F-OGA	-	-	-	Nowsco Fracmaster
Xcide 207	Bacteriacide	F-OGA	-	-	-	Nowsco Fracmaster
Xcide 207	Biocide	F-OGA	-	-	-	BJ Services
Xcide 207	Biocide	F-OGA	-	-	-	Nowsco Fracmaster
X-Cide 207	Bacteriacide	F-OGA	-	-	-	Osca
X-Cide 207	Biocide	F-OGA	-	-	-	Osca
XL Acid III	Crosslinked high viscosity acid	A-RAS	-	-	-	BJ Services
XLA-2	Crosslinker for XL acid	F-C	-	-	-	BJ Services
XLA-3	Crosslink acid	F-ABG	-	-	-	BJ Services
XLD-30	Propriety crosslinking control agent	F-C	-	-	-	BJ Services
XLD-30	Crosslinking delay additive	F-C	-	-	-	BJ Services
XLFC-1	Guar gum in oil base slurry	F-WBP	-	-	-	BJ Services
XLFC-1	Guar gum in oil base slurry	F-WBP	-	-	-	Nowsco Fracmaster
XLFC-1	Guar in diesel slurry	F-CMG	-	-	-	BJ Services
XLFC-1	Guar in diesel slurry	F-CMG	-	-	-	Nowsco Fracmaster
XLFC-2	HPG gum in oil base slurry	F-WBP	-	-	-	Nowsco Fracmaster
XLFC-2	HPG in diesel slurry	F-CMG	-	-	-	BJ Services
XLFC-2	HPG in diesel slurry	F-CMG	-	-	-	Nowsco Fracmaster
XLFC-3	CMHPG gum in oil base slurry	F-WBP	-	-	-	BJ Services
XLFC-3	CMHPG in diesel slurry	F-CMG	-	-	-	BJ Services
XLFC-3	CMHPG in diesel slurry	F-CMG	-	-	-	Nowsco Fracmaster
X-Link-1	Propnetary crosslinking agent. Borate	F-C	-	-	-	Osca
X-Link-1	Delayed borate crosslinker high temperature	F-C	-	-	-	Osca
X-Link-3	Propnetary crosslinking agent. Borate	F-C	-	-	-	Osca
XLO-1	Liquid actitivator for phosphate ester gels	F-OGA	-	-	-	BJ Services
XLO-4	Liquid actitivator for phosphate ester gels	F-OGA	-	-	-	BJ Services
XLO-5	Liquid actitivator for phosphate ester gels	F-OGA	-	-	-	BJ Services
XLO-5	Liquid actitivator for phosphate ester gels	F-OGA	-	-	-	Nowsco Fracmaster
XLR-2	Crosslinking delay additive	F-C	-	-	-	Nowsco Fracmaster
XLW-14	Propnetary crosslinking agent. Zirconium (Zr)	F-C	-	-	-	BJ Services
XLW-2	Crosslinking delay additive	F-C	-	-	-	BJ Services
XLW-22C	Propnetary crosslinking agent. Zirconium (Zr)	F-C	-	-	-	BJ Services
XLW-24	Propnetary crosslinking agent. Borate	F-C	-	-	-	BJ Services
XLW-24	Propnetary crosslinking agent. Borate	F-C	-	-	-	Nowsco Fracmaster
XLW-30	Propnetary crosslinking agent. Borate	F-C	-	-	-	BJ Services
XLW-30	Propnetary crosslinking agent. Borate	F-C	-	-	-	Nowsco Fracmaster
XLW-30	Delayed borate crosslinker high temperature	F-C	-	-	-	BJ Services
XLW-30A	Propnetary crosslinking agent. Borate	F-C	-	-	-	BJ Services
XLW-30A	Delayed borate crosslinker high temperature	F-C	-	-	-	BJ Services
XLW-32	Propnetary crosslinking agent. Borate	F-C	-	-	-	BJ Services
XLW-32	Propnetary crosslinking agent. Borate	F-C	-	-	-	Nowsco Fracmaster
XLW-4	Propnetary crosslinking agent. Borate	F-C	-	-	-	BJ Services
XLW-4	Propnetary crosslinking agent. Borate	F-C	-	-	-	Nowsco Fracmaster
XLW-45	Propnetary crosslinking agent. Titanium (Ti)	F-C	-	-	-	BJ Services
XLW-45	Propnetary crosslinking agent. Titanium (Ti)	F-C	-	-	-	Nowsco Fracmaster
XLW-49	Propnetary crosslinking agent. Zirconium (Zr)	F-C	-	-	-	BJ Services
XLW-52	Propnetary crosslinking agent. Zirconium (Zr)	F-C	-	-	-	BJ Services
XLW-53	Propnetary crosslinking agent. Alumium (AL)	F-C	-	-	-	BJ Services
XLW-53	Propnetary crosslinking agent. Alumium (AL)	F-C	-	-	-	Nowsco Fracmaster
XLW-56	Propnetary crosslinking agent. Borate	F-C	-	-	-	BJ Services
XLW-56	Propnetary crosslinking agent. Borate	F-C	-	-	-	Nowsco Fracmaster
XLW-56	Delayed borate crosslinker high temperature	F-C	-	-	-	BJ Services
XLW-56	Delayed borate crosslinker high temperature	F-C	-	-	-	Nowsco Fracmaster
XLW-60	Propnetary crosslinking agent. Zirconium (Zr)	F-C	-	-	-	BJ Services
XX intensified acid	HCl with low concentration HF	A-AS	-	-	-	Dowell
Xylene	Diesel, Kerosene or aromatic	A-MP	-	-	-	BJ Services
Xylene	Multi-purpose mutual solvent and paraffin dispersant	A-MP	-	-	-	Nowsco-Fracmaster
Xylene	Multi-purpose mutual solvent and paraffin dispersant	A-MP	-	-	-	San Antonio
Xylene diesel	Diesel, Kerosene or aromatic	A-MP	-	-	-	OSCA
Y1	Ammonium bifluoride	A-MP	-	-	-	Dowell
Y3	Oil breaker. Low Temperature	F-B	-	-	-	Dowell
YF 300 Titanate	Crosslinked guar system	F-CGS	-	-	-	Dowell
YF100	Crosslinked guar system	F-CGS	-	-	-	Dowell
YF100	Economical, low residue crosslinked system	F-CGS	-	-	-	Dowell
YF100	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Dowell
YF100 (guar)	Crosslinked guar or HPG with borate	F-CGS	-	-	-	Dowell
YF100 LG	Economical, low residue crosslinked system	F-CGS	-	-	-	Dowell
YF100 LGD	Economical, low residue crosslinked system	F-CGS	-	-	-	Dowell
YF100 LGD	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Dowell
YF100HTD	Crosslinked guar system	F-CGS	-	-	-	Dowell
YF100LG	Crosslinked guar system	F-CGS	-	-	-	Dowell
YF100LGD	Crosslinked guar system	F-CGS	-	-	-	Dowell
YF200	Crosslinked HPG	F-CGS	-	-	-	Dowell
YF200 (HPG)	Crosslinked guar or HPG with borate	F-CGS	-	-	-	Dowell

Product	Description	Product function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
YF200D	Crosslinked HPG	F-CGS	-	-	-	Dowell
YF300	CO2 compatible fracturing fluid	F-CGS	-	-	-	Dowell
YF400	CO2 compatible fracturing fluid	F-CGS	-	-	-	Dowell
YF400 Titanate (delayed available)	Crosslinked HPG	F-CGS	-	-	-	Dowell
YF500 (guar)	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Dowell
YF500 Zirconate delayed	Crosslinked guar system	F-CGS	-	-	-	Dowell
YF60 II	Breaker for phosphate ester oil gels	F-B	-	-	-	Dowell
YF60 III	Breaker for phosphate ester oil gels	F-B	-	-	-	Dowell
YF600	Controllable delayed crosslinked HPG system	F-CGS	-	-	-	Dowell
YF600	Crosslinked HPG with high temperature stabilizers	F-CGS	-	-	-	Dowell
YF600 (HPG)	Controllable delayed crosslinked high temperature system	F-CGS	-	-	-	Dowell
YF600 (zirconium)	Crosslinked HPG	F-CGS	-	-	-	Dowell
YF800	Crosslinked CMHPG high temperature fluid	F-CGS	-	-	-	Dowell
YF800-LpH	Crosslinked CMHPG low pH CO2 compatible fluid	F-CGS	-	-	-	Dowell
YF-Go III	Crosslinked gelled oil for medium temperatures	F-OBS	-	-	-	Dowell
YF-GO III	Continuous crosslinked gelled oil	F-OBS	-	-	-	Dowell
YF-GO IV	Crosslinked gelled oil for higher temperatures	F-OBS	-	-	-	Dowell
YF-Go V	Crosslinked gelled oil for medium temperatures	F-OBS	-	-	-	Dowell
YF-GO V	Crosslinked gelled oil for higher temperatures	F-OBS	-	-	-	Dowell
YF-GO V	Continuous crosslinked gelled oil	F-OBS	-	-	-	Dowell
YFHC	No residue gelled water (HEC)	F-WBG	-	-	-	Dowell
YF-LpH	CO2 compatible fracturing fluid	F-CGS	-	-	-	Dowell
Zinc chloride brine	Liquid zinc chloride (ZnCl)	A-CI	-	-	-	Halliburton
Zinc chloride liquid	Liquid zinc chloride (ZnCl)	A-CI	-	-	-	BJ Services
Z-PROP	Proppants for holding formation cracks open.	F-IHC	-	-	-	Messina

CHEMICAL INVENTORY:

PRODUCTION-TREATING CHEMICALS

Production Treating Chemicals: Codes, Functional Categories, Descriptions and Material Types Used

Code	Functional Category	Description	Material Types Used
P-B	Biocides	Chemicals used to control the growth of bacteria that can generate hydrogen sulfide and cause corrosion and bacteria that produce slime and biomass.	Quaternary amine salt and amine acetate, aldehydes, THPS, sodium hypochlorite, other
P-CI	Corrosion inhibitors	Used to prevent or minimize internal corrosion in offshore production systems.	Amides/imidazolines, amines and amines salts, quaternary ammonium salts, nitrogen heterocyclics
P-SI	Scale inhibitors	Used to prevent water formed scales (calcium carbonate, barium sulfate and strontium sulfate).	Phosphate esters, phosphonates, and polymers
P-EB	Emulsion breakers	Used to de-stabilize water in oil emulsions to make oil saleable .	Oxyalkylated resins, polyglycol esters, alkyl aryl sulfonates
P-RB	Reverse breakers	Used to de-stabilize oil in water dispersions and facilitate gravity separation. Used to reduce the interface tension, allowing the oil droplets to coalesce into large drops.	Polyamines, polyamine quaternary compounds
P-A	Antifoam	Used to de-stabilize foam in the separation of gas and liquids in separators. Used to reduce foaming of water during de-oxygenation for waterfloods.	Silicones, polyglycol esters
P-CF	Coagulants, flocculants	Used to make small solids agglomerate so that they can be separated by filtration or flotation. Applied to the removal of solids from injection water and to improve oil removal for overboard discharge.	Aluminum sulfate, other metal compounds, polymeric amides
P-S	Surfactants	Used to remove small amounts of oil or grease from the platform and/or equipment.	Alkyl aryl sulfonates, ethoxylated alkyl phenols
P-TC	Paraffin treating chemicals	Used to prevent solid organic deposits from depositing on the walls of the piping and equipment. Also includes solvents for removing such deposits.	Hydrocarbon polymers, solvents
P-SA	Solvents and additives	Used as carriers in the various chemical formulations. Hydrocarbon solvents are used for those chemicals meant to reach the oil phase. Alcohols and glycols are used as mutual solvents in both water soluble and oil soluble formulations.	Naphtha, light aromatic naphtha, heavy aromatic naphtha, kerosene, ethylene glycol, other low molecular weight glycols, methanol, isopropanol
P-OS	Oxygen scavenger	Used to remove oxygen from waterflood water.	Sodium bisulfite, ammonium bisulfite
P-HIC	Hydrate inhibition chemicals	Use to control the formation of gas hydrates in gathering piping systems.	Methanol, ethylene glycol
P-DC	Dehydration chemicals	Used to remove water vapor from natural gas.	Triethylene glycol
P-SC	Sweetening chemicals	Used to remove carbon dioxide and hydrogen sulfide from natural gas.	Proprietary products; the most common systems are monoethanolamine (MEA) or diethanolamine (DEA)

Production Treating Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
EC1056A	Quaternary and imidazoline salts in water and methanol	P-CI	-	-	-	Nalco/Exxon
EC1091A	A sulfonated fatty acid alkyl amide polyamine and isopropanol in a hydrocarbon solvent	P-CI	-	-	-	Nalco/Exxon
EC1110A	An aqueous blend of an imidazolium compound, quaternary amine, alcohols, and aryl sulfonate	P-CI	-	-	-	Nalco/Exxon
EC1118A	Quaternary and imidazoline salts in heavy aromatic distillate	P-CI	-	-	-	Nalco/Exxon
EC1140A	A fatty acid polyethylene amine salt, fatty acids, oxyalkylate, diethylamine and methanol in a hydrocarbon solvent	P-CI	-	-	-	Nalco/Exxon
EC1259A	Quaternary amine and imidazoline salts in glycol and alcohol	P-CI	-	-	-	Nalco/Exxon
EC1385A	An aqueous solution of ammonium bisulfite, alkanolphosphate ester, and a quaternary alkoxy alkyamine and isopropanol	P-CI	P-OS	-	-	Nalco/Exxon
EC2012A	A blend of oxyalkylate polymers, isopropanol, and aromatic hydrocarbon	P-EB	-	-	-	Nalco/Exxon
EC2029A	A blend of oxyalkylate polymers, methanol, and aromatic hydrocarbon	P-EB	-	-	-	Nalco/Exxon
EC2034A	A blend of oxylkylate polymers, methanol, and aromatic	P-EB	-	-	-	Nalco/Exxon
EC2068A	An aqueous solution of inorganic acids	P-EB	-	-	-	Nalco/Exxon
EC2072A	A blend of organic sulfonic acid, oxylkylate polymers, methanol, and aromatic hydrocarbon	P-EB	-	-	-	Nalco/Exxon
EC6009A	A mixture of toluene and heptanes	P-TC	-	-	-	Nalco/Exxon
EC6024A	An aqueous solution of polyacrylate	P-RB	-	-	-	Nalco/Exxon
EC6029A	An aqueous mixture of an acrylamide modified terpolymer and ammonium salts	P-RB	-	-	-	Nalco/Exxon
EC6036A	An aqueous solution of a polyfunctional aromatic heterocyclic compound in isopropanol	P-RB	-	-	-	Nalco/Exxon
EC6037A	An aqueous solution of a polyquaternary compound and acrylic polymer in methanol	P-RB	-	-	-	Nalco/Exxon
EC6038A	An aqueous polymine and sulfate in methanol	P-RB	-	-	-	Nalco/Exxon
EC6039A	A phosphoric acid solution	P-RB	-	-	-	Nalco/Exxon
EC6047A	An aqueous solution of a glycol and alcohol	P-RB	-	-	-	Nalco/Exxon
EC6080A	Water, Phosphate, Glycol, Phosphate ester	P-SI	-	-	-	Nalco/Exxon
EC6088A	A phosphonomethylated amine in water/alcohol and ethylene glycol	P-SI	-	-	-	Nalco/Exxon
EC6098A	An aqueous hydrochloric acid solution	P-SI	-	-	-	Nalco/Exxon
EC6111A	An aqueous solution of glutaraldehyde	P-B	-	-	-	Nalco/Exxon
EC6112A	Aqueous solution of glutaraldehyde	P-B	-	-	-	Nalco/Exxon
EC6297A	An aqueous THPS solution	P-B	-	-	-	Nalco/Exxon
EC9034A	A blend of acetylenic diol and an alkyl alcohol in polysiloxane and kerosene	P-A	-	-	-	Nalco/Exxon
EC9323A	Antifoam, Hydrocarbon solvent	P-A	-	-	-	Nalco/Exxon
Nalco 7700	An oxyalkylate in a hydrocarbon solvent	P-EB	-	-	-	Nalco/Exxon
Nalco 8157	An aqueous solution of aluminum hydroxy chloride and an amine polymer	P-RB	-	-	-	Nalco/Exxon
Nalco 8180	An aqueous solution of aluminum salts and polymers	P-RB	-	-	-	Nalco/Exxon
Emulsotron X-1083	Blend of resin adducts and complex polyols	P-EB	-	-	-	Champion Technologies
Contron R-2477	Amide	P-CI	-	-	-	Champion Technologies
Contron RU-230	Quaternary amines	P-CI	-	-	-	Champion Technologies
Gyptron TA-13	Inhibited Acid	P-SI	-	-	-	Champion Technologies
Cortron RU-142	Catalyzed ammonium bisulfite solution	P-CI	-	-	-	Champion Technologies
Gyptron T-314	Polymer Blend	P-SI	-	-	-	Champion Technologies
Cleartron ZB-294	Cationic Polymer Blend	P-RB	-	-	-	Champion Technologies
Cleartron ZB-295	Metal Salt/Polymer Blend	P-RB	-	-	-	Champion Technologies
Gyptron T-139	Phosphonate	P-SI	-	-	-	Champion Technologies
X-Cide 0102	Glutaraldehyde	P-CI	-	-	-	Baker Petrolite
HSW700F	Methanol, Ethanolamine, Alkanolamine/adehyde condensate	P-SC	-	-	-	Baker Petrolite
WAW0273C	Hydrochloric Acid	P-RB	-	-	-	Baker Petrolite
CGO9051	Aromatic hydrocarbon mixture, Naphthalene, Isopropanol, Mixed ethylene amines	P-CI	-	-	-	Baker Petrolite
CRW9110	Methanol, Isopropanol,	P-CI	-	-	-	Baker Petrolite
CLW3041	2-Butoxyethanol, Dodecylbenzenesulfonic	P-S	-	-	-	Baker Petrolite
CRO0389G	Methanol, Alkylaryl sulfonates, Light aromatic naphtha, Sulfonate salt of fatty acid	P-CI	-	-	-	Baker Petrolite
CRO9123	Aromatic hydrocarbon, Naphthalene, Isopropanol, Benzenemethanaminium	P-CI	-	-	-	Baker Petrolite
CRW0201I	Propylene Glycol, Ethoxylated fatty imidazoline salt	P-CI	-	-	-	Baker Petrolite
CRW5449D	Methanol, Ispropanol, Polyethylene glycol t-butylphenyl ether	P-CI	-	-	-	Baker Petrolite
CRW682	Ethylene glycol, Ammonium bisulfite, Isopropanol	P-CI	-	-	-	Baker Petrolite
CRW9045	Isopropanol	P-CI	-	-	-	Baker Petrolite
CRW9043	2-Butoxyethanol, Diethylenetriamine	P-CI	-	-	-	Baker Petrolite
CRW9058	Methanol	P-CI	-	-	-	Baker Petrolite
DFO3005	Petroleum distillate	P-A	-	-	-	Baker Petrolite
DFO3004	Kerosene	P-A	-	-	-	Baker Petrolite
DFO3043	Aromatic hydrocarbon mixture, Isopropanol, Naphthalene, Aromatic petroleum, Xylene	P-A	-	-	-	Baker Petrolite
DFO3051	Medium aliphatic solvent naphtha	P-A	-	-	-	Baker Petrolite
DFO3056	Petroleum distillates, Methyl isobutyl ketone	P-A	-	-	-	Baker Petrolite

Production Treating Chemicals: Products, Descriptions, Product Functions and Suppliers

Product	Description	Product Function(s)				Supplier
		Function 1	Function 2	Function 3	Function 4	
DMO8215	Aromatic hydrocarbon mixture, Isopropanol, naphthalene	P-EB	-	-	-	Baker Petrolite
DMO8321	Aromatic hydrocarbon mixture, Dodecylbenzenesulfonic, Naphthalene	P-EB	-	-	-	Baker Petrolite
DMO8298	Aromatic hydrocarbon mixture, Naphthalene, Aromatic/Hydrocarbon mixture, Xylene, Trimethylbenzene	P-EB	-	-	-	Baker Petrolite
DMO8056	Aromatic hydrocarbon mixture, Naphthalene	P-EB	-	-	-	Baker Petrolite
DMO2256G	Light aromatic naphtha	P-EB	-	-	-	Baker Petrolite
DMO0100G	2-Ethylhexanol, Light aromatic naphtha	P-EB	-	-	-	Baker Petrolite
DMO8204	Heavy aromatic distillate, Aromatic/hydrocarbon mixture, Isopropanol, Xylene, Ethylbenzene, Trimethylbenzene, Cumene	P-EB	-	-	-	Baker Petrolite
DMO8168	Aromatic hydrocarbon mixture, Naphthalene, Petroleum distillate, Aromatic hydrocarbon	P-EB	-	-	-	Baker Petrolite
DMO0017F	Isodecanol, Alkylaryl sulfonates, Light aromatic naphtha, Alkylaryl sulfonates	P-EB	-	-	-	Baker Petrolite
DMO8150	Aromatic hydrocarbon, Xylene, Isopropanol, Ethylbenzene	P-EB	-	-	-	Baker Petrolite
DMO8008	Aromatic hydrocarbon mixture, Petroleum distillate, Isopropanol, Naphthalene, Xylene, Ethylbenzene	P-EB	-	-	-	Baker Petrolite
DMO4014K	2-Ethylhaxanol, Heavy aromatic naphtha, Light aromatic naphtha	P-EB	-	-	-	Baker Petrolite
DMO8314	Acetic acid, Aromatic hydrocarbon mixture, Ethylene glycol, Naphthalene, Aromatic/hydrocarbon mixture	P-EB	-	-	-	Baker Petrolite
RBW6560	Acrylic copolymer	P-RB	-	-	-	Baker Petrolite
RBW6515	Methanol	P-RB	-	-	-	Baker Petrolite
RBW6012	Methanol	P-RB	-	-	-	Baker Petrolite
RBW6512	Methanol	P-RB	-	-	-	Baker Petrolite
RBW6302	Acrylic polyamide, Petroleum distillate, Naphtha, Ethylene glycol, Inorganic compound	P-RB	-	-	-	Baker Petrolite
RBW6072	Methanol	P-RB	-	-	-	Baker Petrolite
RBW6036	Methanol	P-RB	-	-	-	Baker Petrolite
RBW6022Y	N-Butanol, Ethylene glycol, Triethylene glycol, Potassium hydroxide, Tall oil fatty acid	P-RB	-	-	-	Baker Petrolite
RBW6022X	Ethylene glycol, Isopropanol, Potassium hydroxide, Triethylene glycol	P-RB	-	-	-	Baker Petrolite
RBW6022	Ethylene glycol, Methanol, Polyamine	P-RB	-	-	-	Baker Petrolite
RBW6020Y	N-Butanol, Ethylene glycol, Triethylene glycol, Potassium hydroxide	P-RB	-	-	-	Baker Petrolite
RBW0420I	No Hazardous material are contained in this product	P-RB	-	-	-	Baker Petrolite
RBW0274T	Sulfur-derivitized polyamines	P-RB	-	-	-	Baker Petrolite
RBW0252R	Acrylamide, Propargyl alcohol, Metal salt	P-RB	-	-	-	Baker Petrolite
RBW0112E	Methanol, Ammnium hydroxide, Fatty quaternary ammonium chloride	P-RB	-	-	-	Baker Petrolite
RE4261	Xylene (ortho), Trimethylbenzene, Cumene, Diethylbenzenes, Light aromatic naphtha	P-EB	-	-	-	Baker Petrolite
RE4205	Calcium chloride, Organic phosphonate	P-SI	-	-	-	Baker Petrolite
RE4145	Methanol, Aluminum salt	P-EB	-	-	-	Baker Petrolite
RE3974	Isopropanol, Naphthalene, Polyoxyalkylene glycol, A polyether, Alkylarylsufonate amine salt, Aromatic petroleum, distillate, Ammonium salt	P-CI	-	-	-	Baker Petrolite
RE3951	Methanol, Naphthalene, Aromatic petroleum distillate, Alkylbenzene sulfonic acid	P-EB	-	-	-	Baker Petrolite
P518	Xylene, Toluene, Ethylbenzene	P-TC	-	-	-	Baker Petrolite
PAO0100F	Toluene, VM&P Naphtha	P-TC	-	-	-	Baker Petrolite
PAO0103F	2-Ethylhexanol, Toluene, Alkylaryl sulfonates, VM&P Naphtha, Light aromatic naphtha	P-TC	-	-	-	Baker Petrolite
PAO0480F	Toluene, VM&P Naphtha, Light aromatic naphtha, Polyalkylsuccinic imide	P-TC	-	-	-	Baker Petrolite
PA2365	Manoethanolamine, Methoxypropylamine	P-SC	-	-	-	Baker Petrolite
PFR23	Methanol	P-HI	-	-	-	Baker Petrolite
OSW0477C	Citric acid, Sodium bisulfite	P-OS	-	-	-	Baker Petrolite
OSI1A	Ethylene glycol, Aromatic naphtha, Acetic acid, Naphthalene	P-EB	-	-	-	Baker Petrolite
OXW5101	Sodium chlorite	P-B	-	-	-	Baker Petrolite
OSW3055	Sodium bisulfite	P-OS	-	-	-	Baker Petrolite
FLW0109I	No Hazardous materials are in this product	P-RB	-	-	-	Baker Petrolite
FLW0123D	Methanol	P-RB	-	-	-	Baker Petrolite
FLW0130I	Hydrotreated light distillate, VM&P Naphtha, Nonylphenol ethoxylate	P-RB	-	-	-	Baker Petrolite
FLW0162I	Ethylene glycol, Hydrotreated light distillate, Nonylphenol ethoxylate	P-RB	-	-	-	Baker Petrolite
SCW4050	Ammonium chloride fume	P-SI	-	-	-	Baker Petrolite
SCW4033	No Hazardous materials are in this product	P-SI	-	-	-	Baker Petrolite
SCW4013	Mixture proprietary	P-SI	-	-	-	Baker Petrolite
SCW0203G	Methanol	P-SI	-	-	-	Baker Petrolite
SRW 4811	Hydrochloric Acid	P-SI	-	-	-	Baker Petrolite
SRW4804	Isopropanol, Acetic acid	P-SI	-	-	-	Baker Petrolite
SRW0029C	Glycolic acid, Phosphoric acid	P-SI	-	-	-	Baker Petrolite

APPENDIX B

MATERIAL SAFETY DATA SHEETS (MSDSs) FOR THE SELECTED 21 CHEMICALS PROFILED

HYDROCHLORIC ACID

PROFILE #1

	BJ SERVICES COMPANY MATERIAL SAFETY DATA SHEET	Region: USA

SECTION I - GENERAL INFORMATION

PRODUCT NAME:	**Hydrochloric Acid (HCl)**
ITEM NUMBER :	100092, 100088, 464950
CHEMICAL DESCRIPTION:	Inorganic acid
PRODUCT USE:	Acidizing
SUPPLIER:	BJ Services Company
ADDRESS:	5500 Northwest Central Dr Houston TX 77092
EMERGENCY TELEPHONE NUMBER	**(800)424-9300 for CHEMTREC** **(202)483-7616 Alaska and International**
PREPARED BY:	BJ Services Environmental Group (281)351-0773
DATE PREPARED:	December 30, 1996 Supersedes: February 1995

HMIS HAZARD INDEX

HEALTH:	3
FLAMMABILITY:	0
REACTIVITY:	2
PERSONAL PROTECTION:	j

SECTION II - HAZARDOUS COMPONENTS

HAZARDOUS COMPONENTS	CAS #	PERCENT	HAZARD
Hydrochloric acid	7647-01-0	3.0-36.0	Corrosive

SECTION III - FIRE AND EXPLOSION HAZARD DATA

FLASHPOINT (METHOD):	None
UPPER EXPLOSION LIMIT(% BY VOL):	N.A.
LOWER EXPLOSION LIMIT(% BY VOL):	N.A.
AUTO-IGNITION TEMPERATURE:	N.A.
EXTINGUISHING MEDIA:	Hydrochloric acid does not burn. Use appropriate media for surrounding fire.
SPECIAL FIRE FIGHTING PROCEDURES:	Equipment normally used for other hazards present should be used.
EXPLOSION DATA:	Hydrochloric acid will react with most metals to evolve hydrogen gas which when mixed with air may result in fire or explosion if ignited.
HAZARDOUS COMBUSTION PRODUCTS:	Hydrogen gas, chlorine gas

SECTION IV - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: Skin and eye contact, inhalation, ingestion

ACUTE OVEREXPOSURE EFFECTS:

SKIN CONTACT:	Liquid or concentrated vapors can rapidly cause burns. Repeated or prolonged contact with dilute solution, and concentrated vapors can cause irritation and dermatitis.
SKIN ABSORPTION:	Not absorbed by skin.
EYE CONTACT:	Liquid or concentrated vapors can cause eye irritation, severe burns and permanent damage including blindness.
INHALATION:	Mist and vapors can cause irritation of respiratory tract, with burning, choking, coughing, headaches and rapid heartbeat. Levels of 10 to 35 ppm can cause irritation of throat and 50 - 100 ppm is nearly unbearable for 1 hour. Inflammation, destruction of nasal passages and breathing difficulties can occur with higher concentrations and may be delayed in onset. 1000-2000 ppm can be fatal.
INGESTION:	Can cause severe burns of mouth, esophagus and stomach. Nausea, pain and vomiting frequently occur. Depending on the amount swallowed, holes in the intestinal tract, kidney inflammation, shock and death can occur.

CHRONIC OVEREXPOSURE EFFECTS: Irritation of mucous lining and erosion of the teeth. Persons with asthma, bronchitis, emphysema and other lung conditions and chronic nose, sinus or throat conditions may have those conditions aggravated by exposure to HCl.

EXPOSURE LIMITS:

HAZARDOUS COMPONENT	ACGIH TLV	OSHA PEL
Hydrochloric acid	5 ppm	5 ppm

CARCINOGENICITY, REPRODUCTIVE EFFECTS:
Not listed as carcinogen - IARC, NTP, or OSHA

TERATOGENICITY, MUTAGENICITY:
No effects listed.

TOXICITY STUDIES:

LD(50)	900 mg/kg (oral rabbit)
LC(50)	3124 ppm/1hr (inhal rat)

SECTION V - FIRST AID PROCEDURES

FOR EYES: Immediately flush with plenty of water for at least 15 minutes. Seek medical attention immediately!

FOR SKIN:	Immediately drench the victim with water and remove exposed clothing as soon as possible. If burns are severe or extensive, do not move the victim, call for emergency medical care.
FOR INHALATION:	Remove victim to fresh air and administer 100% oxygen for 15 to 30 minutes. If breathing has stopped, begin artificial respiration and treat for shock. Get medical attention immediately.
FOR INGESTION:	Drink large amounts of lime water or milk of magnesia. Use plain water if these are not available. DO NOT use sodium bicarbonate. Spontaneous vomiting may occur, but do not attempt to induce. Get immediate medical help.

SECTION VI - PHYSICAL DATA

APPEARANCE AND ODOR:	Clear, colorless to slightly yellow fuming liquid. Sharp, pungent and irritating odor.
SPECIFIC GRAVITY:	1.16
VAPOR PRESSURE:	Approximately 13 mmHg @ 20°C
VAPOR DENSITY (air=1):	1.3 (HCl gas)
EVAPORATION RATE:	Depends on barometric pressure and % HCl
BOILING POINT:	110oC
FREEZING POINT:	N.E.
SOLUBILITY IN H20:	82.3 gm/100 gm H2O at 0°C
pH:	<1

SECTION VII - REACTIVITY DATA

CHEMICAL STABILITY:	Stable
INCOMPATIBLE MATERIALS:	Metals
HAZARDOUS POLYMERIZATION:	Does not polymerize
HAZARDOUS DECOMPOSITION PRODUCTS:	Hydrogen gas Chlorine gas

SECTION VIII - SPECIAL/PERSONAL PROTECTION

VENTILATION:	The use of mechanical ventilation is recommended whenever this product is used in a confined space. Where engineering controls are not feasible, assure use is in an area where there is natural air movement.
RESPIRATORY PROTECTION:	Cartridge or Canister Respirator Acid Gas
PROTECTIVE GLOVES:	Rubber
EYE PROTECTION:	Goggles
OTHER PROTECTIVE EQUIPMENT:	Apron. Eyewash bottles or other rinsing agent should be easily accessible.

SECTION IX - HANDLING PRECAUTIONS

LEAK AND SPILL PROCEDURES:	Evacuate area where concentrated fumes are present. Cleanup personnel to wear full protective gear. Completely contain spilled acid with dikes, etc., and prevent run-off into ground and surface waters or into sewers. Product will dissociate in water affecting the pH and will cause aquatic toxic effect similar to chlorine.

	Neutralize with soda ash or dilute caustic soda.
WASTE DISPOSAL:	If this product becomes a waste it is hazardous and classed as, Corrosive waste- D002, under 40 CFR 261. Always dispose of according to all local/state/and federal regulations.
HANDLING & SPECIAL EQUIPMENT:	Avoid contact with eyes, skin and clothing. Avoid breathing fumes. Avoid contact with metals.
STORAGE REQUIREMENTS:	Store in non-metal containers.

SECTION X - REGULATORY INFORMATION

SHIPPING INFORMATION

PROPER SHIPPING NAME:	Hydrochloric acid
HAZARD CLASS:	8
UN/NA NUMBER:	UN 1789
PACKING GROUP W/ "PG":	PG II
SUBSIDIARY RISK:	N.A.
REPORTABLE QUANTITY (RQ):	5000lbs/2270kg (HCl)
EMERGENCY RESPONSE GUIDE #:	157

ENVIRONMENTAL INFORMATION

SARA TITLE III

SECTION 302/304	This product does not contain ingredients listed as an Extremely Hazardous Substance.
SECTION 311/312	Immediate
SECTION 313	This product contains the following ingredients (at a level of 1% or greater) which appear on the List of Toxic Chemicals: Hydrochloric acid

OTHER REGULATORY INFORMATION

TSCA INVENTORY:	All of the components in this appear on the TSCA inventory.
CALIFORNIA PROP 65:	None of the chemicals on the current Proposition 65 list are known to be present in this product.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

Once printed, the information contained in this document is valid for a period of 45 days from its date stamp. 01/14/99

Revision: 1 **Status: Approved & Released MSDS**

Revision History:

Revision:	Sec/Para Changed	Change Made:	Date
1	N/A	Initial Issue of Document	Today
2	X	Shipping name updated	1-12-99

HYDROFLUORIC ACID

PROFILE #2

	BJ SERVICES COMPANY **MATERIAL SAFETY DATA SHEET**	Region: USA

SECTION I - GENERAL INFORMATION

PRODUCT NAME:	**HCl:HF Acid**
ITEM NUMBER:	N.A.
CHEMICAL DESCRIPTION:	Mixture of hydrochloric and hydrofluoric acids
PRODUCT USE:	Acidizing
SUPPLIER:	BJ Services Company
ADDRESS:	5500 Northwest Central Dr Houston TX 77092
EMERGENCY TELEPHONE NUMBER	**(800)424-9300 for CHEMTREC** **(202)483-7616 Alaska and International**
PREPARED BY:	BJ Services Environmental Group (281)351-0773
DATE PREPARED:	February 4, 1998 Supersedes: August 15, 1997

HMIS HAZARD INDEX

HEALTH:	3
FLAMMABILITY:	0
REACTIVITY:	2
PERSONAL PROTECTION:	j

SECTION II - HAZARDOUS COMPONENTS

HAZARDOUS COMPONENTS	CAS #	PERCENT	HAZARD
Hydrochloric acid	7647-01-0	7 - 18	Corrosive
Hydrofluoric acid	7664-39-3	1 - 6	Corrosive, Toxic

SECTION III - FIRE AND EXPLOSION HAZARD DATA

FLASHPOINT (METHOD):	None
UPPER EXPLOSION LIMIT(% BY VOL):	N.A.
LOWER EXPLOSION LIMIT(% BY VOL):	N.A.
AUTO-IGNITION TEMPERATURE:	N.A.
EXTINGUISHING MEDIA:	Acid does not burn. Use appropriate media for surrounding fire.
SPECIAL FIRE FIGHTING PROCEDURES:	When fighting fire near or around this product, use dry chemicals, carbon dioxide and profuse amounts of water since HF is present or will be generated. Wear self-contained breathing apparatus. Also wear goggles, face shield and full protective clothing.

EXPLOSION DATA: Hydrochloric acid will react with most metals to evolve hydrogen gas which may result in fire or explosion if ignited. Dangerous when heated, emits toxic corrosive fumes. Flammable and explosive hydrogen gas may be formed when HF reacts with certain metals

HAZARDOUS COMBUSTION PRODUCTS: Hydrogen gas and hydrogen fluoride gas

SECTION IV - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: Skin contact, eye contact, inhalation, ingestion

ACUTE OVEREXPOSURE EFFECTS:

SKIN CONTACT: Liquid or concentrated vapors can rapidly cause burns. The HF present may cause burns that are not painful or visible for several hours.

SKIN ABSORPTION: May be fatal if absorbed

EYE CONTACT: Liquid or concentrated vapors can cause eye irritation, severe burns and permanent damage including blindness.

INHALATION: Mist and vapors can cause irritation of respiratory tract, with burning, choking, coughing, headaches and rapid heartbeat. Levels of 10 to 35 ppm can cause irritation of throat and 50 - 100 ppm is nearly unbearable for 1 hour. HF vapors may be fatal. Inflammation, destruction of nasal passages and breathing difficulties can occur with higher concentrations and may be delayed in onset. 1000 - 2000 ppm can be fatal.

INGESTION: Can cause severe burns of mouth, esophagus and stomach. Nausea, pain and vomiting frequently occur. Depending on the amount swallowed, holes in the intestinal tract, kidney inflammation, shock and death can occur.

CHRONIC OVEREXPOSURE EFFECTS: May cause irritation of mucous lining and erosion of the teeth. Persons with asthma, bronchitis, emphysema and other lung conditions and chronic nose, sinus or throat conditions may have those conditions aggravated by exposure to HCl. Fluorosis, kidney or liver damage can occur with prolonged exposure.

EXPOSURE LIMITS:

HAZARDOUS COMPONENT	ACGIH TLV	OSHA PEL
Hydrochloric acid	5 ppm	5 ppm
Hydrofluoric acid	3 ppm	3 ppm

CARCINOGENICITY, REPRODUCTIVE EFFECTS:
Not listed as carcinogen-IARC, NTP or OSHA

TERATOGENICITY, MUTAGENICITY:
No effects listed

TOXICITY STUDIES:

LD(50)	900 mg/kg (oral rabbit)
LC(50)	3124 ppm/1hr (inhal rat)

SECTION V - FIRST AID PROCEDURES

FOR EYES:	Immediately flush with plenty of water for at least 15 minutes. Seek medical attention immediately!!
FOR SKIN:	Worker should be subjected to a drenching shower for at least 15 minutes while removing contaminated clothing. Apply ice cold 0.2% Hyamine solution or 0.13% Zephiran for 1-4 hrs depending on severity of burns. Call for emergency medical care. If burns are extensive or severe, do not move victim. Call for emergency medical care.
FOR INHALATION:	Remove victim to fresh air and administer 100% oxygen for 15 to 30 minutes. If breathing has stopped, begin artificial respiration and treat for shock. Get medical attention immediately.
FOR INGESTION:	Drink large amounts of lime water or milk of magnesia. Use plain water if these are not available. DO NOT use sodium bicarbonate. Spontaneous vomiting may occur, but do not attempt to induce. Get immediate medical help.

SECTION VI - PHYSICAL DATA

APPEARANCE AND ODOR:	Clear, colorless to slightly yellow liquid. Sharp, pungent and irritating odor. Odor of HCl will mask odor of HF.
SPECIFIC GRAVITY:	Varies with strength of acids
VAPOR PRESSURE:	The vapor pressure of all aqueous solutions approach that of the constant boiling point mixture which boils at 110oC at 760 mmHg.
VAPOR DENSITY (air=1):	See vapor pressure
EVAPORATION RATE:	Depends on barometric pressure and % acid
BOILING POINT:	Depends on concentration of acids
FREEZING POINT:	N.E.
SOLUBILITY IN H20:	Soluble
pH:	<1

SECTION VII - REACTIVITY DATA

CHEMICAL STABILITY:	Stable
INCOMPATIBLE MATERIALS:	HCl will attack metals. HF will attack glass, concrete, certain metals, silica-containing materials, natural rubber, leather and many organics.
HAZARDOUS POLYMERIZATION:	Does not polymerize
HAZARDOUS DECOMPOSITION PRODUCTS:	Hydrogen gas, chlorine gas, hydrogen fluoride gas

SECTION VIII - SPECIAL/PERSONAL PROTECTION

VENTILATION:	The use of mechanical ventilation is recommended whenever this product is used in a confined space. Where engineering controls are not feasible, assure use is in an area where there is natural air movement.
RESPIRATORY PROTECTION:	Cartridge or canister respirator, acid gas
PROTECTIVE GLOVES:	Rubber
EYE PROTECTION:	Goggles
OTHER PROTECTIVE EQUIPMENT:	Eyewash bottles or other rinsing equipment should be easily accessible.

SECTION IX - HANDLING PRECAUTIONS

LEAK AND SPILL PROCEDURES:	Notify personnel, provide adequate ventilation, and remove ignition sources since hydrogen may be generated by reaction with metals. Personnel involved in clean up must wear protective equipment. Dike or contain spill to prevent from entering waterways. Cover with lime to form a slurry. Pump neutralized slurry into salvage containers for proper disposal. Recover residue with non-sparking shovels or absorbent material and add to salvage containers.
WASTE DISPOSAL:	If this product becomes a waste it meets the requirements of a RCRA hazardous waste with the waste code D002. Always dispose of according to all local, state, and federal regulations.
HANDLING & SPECIAL EQUIPMENT:	Avoid contact with eyes, skin and clothing. Avoid breathing fumes. Avoid contact with metals. HF is hazardous to the skin, eyes and mucous membranes. Dilute acids such as this product may not burn immediately on contact. If HF comes in contact with any part of the body, regardless of concentration, flush immediately with water for 15-30 minutes. Solutions as dilute as 1/2% can cause an HF burn which may not make its presence known until many hours later. HF vapors will seek any source of moisture resulting dilute solutions. One of the most common places for dilute burns is under the fingernails. Check gloves for pinholes daily and discard any defective gloves. HF can absorb into plastic and wood surfaces and appear dry, yet be a source of HF burns. Neutralize tools and protective equipment with sodium carbonate or dilute ammonia after use.
STORAGE REQUIREMENTS:	Store in non-metal containers. Store in a tightly closed container in a well-ventilated area.

SECTION X - REGULATORY INFORMATION

SHIPPING INFORMATION

PROPER SHIPPING NAME:	Corrosive liquids, toxic, n.o.s. (contains hydrochloric acid and hydrofluoric acid)
HAZARD CLASS:	8
UN/NA NUMBER:	UN 2922
PACKING GROUP W/ "PG":	PG II
SUBSIDIARY RISK:	Poison
REPORTABLE QUANTITY (RQ):	5000/2270 (hydrochloric acid) 100/45.4 (hydrofluoric acid)
EMERGENCY RESPONSE GUIDE #:	154

ENVIRONMENTAL INFORMATION

SARA TITLE III

SECTION 302/304	This product contains the following ingredient(s) which is listed as an Extremely Hazardous Substance: Hydrofluoric acid
SECTION 311/312	Immediate
SECTION 313	This product contains the following ingredients (at a level of 1% or greater) which appear on the List of Toxic Chemicals: Hydrochloric acid 7-18% Hydrofluoric acid 1-6%

OTHER REGULATORY INFORMATION

TSCA INVENTORY:	All of the components in this appear on the TSCA inventory.
CALIFORNIA PROP 65:	None of the chemicals on the current Proposition 65 list are known to be present in this product.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

Once printed, the information contained in this document is valid for a period of 45 days from its date stamp. 02/14/2000

Revision: 1 **Status: Approved & Released MSDS**

Revision History:

Revision:	Sec/Para Changed	Change Made:	Date
1	N/A	Initial Issue of Document	Today

POLYSILOXANE

PROFILE #3

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

Antifoam B(tm) Silicone Emulsion

MSDS Number: A7140 --- *Effective Date: 09/08/97*

1. Product Identification

Synonyms: None
CAS No.: Not applicable.
Molecular Weight: Not applicable.
Chemical Formula: Not applicable.
Product Codes: B531

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Water	7732-18-5	ca. 83%	No
Dimethyl Siloxanes	63148-62-9	ca. 9%	No
Methyl cellulose	9004-67-5	ca. 2%	No
Hydrogenated tallow glycerides	68308-54-3	ca. 1%	Yes

3. Hazards Identification

Emergency Overview

CAUTION! MAY CAUSE EYE IRRITATION.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight
Flammability Rating: 1 - Slight
Reactivity Rating: 0 - None
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
No adverse health effects via inhalation.
Ingestion:
No adverse effects expected. May cause mild irritation to the gastrointestinal tract.
Skin Contact:
Not expected to be a health hazard from skin exposure.
Eye Contact:
Direct eye contact may cause temporary discomfort with mild redness and dryness similar to windburn.
Chronic Exposure:
No information found.
Aggravation of Pre-existing Conditions:
No information found.

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4. First Aid Measures

Inhalation:
Not expected to require first aid measures. Remove to fresh air. Get medical attention for any breathing difficulty.
Ingestion:
Not expected to require first aid measures. If large amounts were swallowed, give water to drink and get medical advice.
Skin Contact:
Not expected to require first aid measures. Wash thoroughly with running water. Get medical advice if irritation develops.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

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5. Fire Fighting Measures

Fire:
Flash point: > 101.1C (> 214F) CC

Not considered to be a fire hazard.
Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
Dry chemical, foam, water or carbon dioxide.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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6. Accidental Release Measures

Caution! Floor and other surfaces may be slippery. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

---

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

---

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
None established.
Ventilation System:
In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.
Personal Respirators (NIOSH Approved):
Not expected to require personal respirator usage.
Skin Protection:
Wear protective gloves and clean body-covering clothing.
Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

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9. Physical and Chemical Properties

Appearance:
White liquid.
Odor:
Light odor.
Solubility:
Negligible.
Specific Gravity:
1.00 @ 25C
pH:
No information found.
% Volatiles by volume @ 21C (70F):
100
Boiling Point:
100C (212F)
Melting Point:
No information found.
Vapor Density (Air=1):
Not applicable.
Vapor Pressure (mm Hg):
30 @ 20C (68F)
Evaporation Rate (BuAc=1):
No information found.

---

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Silicon dioxide, carbon oxides, and formaldehyde.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Strong oxidizers.
Conditions to Avoid:
Incompatibles.

---

11. Toxicological Information

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Water (7732-18-5)	No	No	None
Dimethyl Siloxanes (63148-62-9)	No	No	None

Methyl cellulose (9004-67-5)	No	No	None
Hydrogenated tallow glycerides (68308-54-3)	No	No	None

12. Ecological Information

Environmental Fate:
For dimethyl siloxanes: When released into the soil, this material is not expected to biodegrade. When released into the soil, this material is not expected to leach into groundwater. When released into the soil, this material is not expected to evaporate significantly. When released into water, this material is not expected to biodegrade. When released into water, this material is not expected to evaporate significantly. When released into the air, this material may be removed from the atmosphere to a moderate extent by dry deposition.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\--------

Ingredient	TSCA	EC	Japan	Australia
Water (7732-18-5)	Yes	Yes	Yes	Yes
Dimethyl Siloxanes (63148-62-9)	Yes	No	Yes	Yes
Methyl cellulose (9004-67-5)	Yes	No	Yes	Yes
Hydrogenated tallow glycerides (68308-54-3)	Yes	Yes	No	Yes

--------\Chemical Inventory Status - Part 2\--------

		--Canada--		
Ingredient	Korea	DSL	NDSL	Phil.
Water (7732-18-5)	Yes	Yes	No	Yes

Dimethyl Siloxanes (63148-62-9)	Yes	Yes	No	Yes
Methyl cellulose (9004-67-5)	Yes	Yes	No	Yes
Hydrogenated tallow glycerides (68308-54-3)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Water (7732-18-5)	No	No	No	No
Dimethyl Siloxanes (63148-62-9)	No	No	No	No
Methyl cellulose (9004-67-5)	No	No	No	No
Hydrogenated tallow glycerides (68308-54-3)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\----------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Water (7732-18-5)	No	No	No
Dimethyl Siloxanes (63148-62-9)	No	No	Yes
Methyl cellulose (9004-67-5)	No	No	No
Hydrogenated tallow glycerides (68308-54-3)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
Reactivity: No (Mixture / Liquid)

Australian Hazchem Code: No information found.
Poison Schedule: No information found.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

16. Other Information

NFPA Ratings: Health: **1** Flammability: **0** Reactivity: **0**
Label Hazard Warning:
CAUTION! MAY CAUSE EYE IRRITATION.
Label Precautions:
Avoid contact with eyes.
Wash thoroughly after handling.
Label First Aid:
In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.
Product Use:
Laboratory Reagent.
Revision Information:
MSDS Section(s) changed since last revision of document include: 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16.
Disclaimer:
****

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Prepared by: Strategic Services Division
Phone Number: (314) 539-1600 (U.S.A.)

MATERIAL SAFETY DATA SHEET

NALCO/EXXON
ENERGY CHEMICALS, L.P.

PRODUCT

EC9034A ANTIFOAM

Emergency Telephone Number
Medical (800) 462-5378 (24 hours) (800) I-M-ALERT

SECTION 01 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: EC9034A ANTIFOAM
DESCRIPTION: A blend of acetylenic diol and an alkyl alcohol in polysiloxane and kerosene

NFPA 704M/HMIS RATING: 1/1 HEALTH 2/2 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 02 COMPOSITION AND INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 15 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
Deodorized kerosene	8008-20-6	40-70
2-Ethylhexanol	104-76-7	1-5
Acetylenic diol	126-86-3	1-5

SECTION 03 HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:
CAUTION: Vapor harmful. Combustible. May cause irritation to skin and eyes. Avoid breathing vapor. Use with adequate ventilation. Avoid contact with skin, eyes, and clothing. Do not take internally. Keep away from heat and open flame. Keep container closed when not in use.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

PRIMARY ROUTES OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT: Can cause moderate irritation.
SKIN CONTACT: May cause irritation with prolonged contact.
INGESTION: May be harmful.
INHALATION: Prolonged inhalation of vapor or mist may be harmful.

SYMPTOMS OF EXPOSURE:
ACUTE: Inhalation of high concentrations of product can cause nausea, dizziness, vomiting, stupor or unconsciousness.

CHRONIC: Prolonged skin contact with product can cause dry skin and defatting resulting in irritation and dermatitis.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 04 FIRST AID INFORMATION

NALCO/EXXON ENERGY CHEMICALS, L.P.
P.O. BOX 87 • Sugar Land, Texas 77487-0087 • (281) 263-7000

EYES:	Flush with water for 15 minutes. Call a physician.
SKIN:	Wash thoroughly with soap and rinse with water. Call a physician.
INGESTION:	Do not induce vomiting. Give water. Call a physician.
INHALATION:	Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 05 FIRE FIGHTING MEASURES

FLASH POINT: 140 Degrees F (PMCC) ASTM D-93

EXTINGUISHING MEDIA: Based on the NFPA guide, use dry chemical, foam, carbon dioxide or other extinguishing agent suitable for Class B fires. Use water to cool containers exposed to fire. For large fires, use water spray or fog, thoroughly drenching the burning material.

SECTION 06 ACCIDENTAL RELEASE MEASURES

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT or (800) 462-5378.

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 15.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 15.

Keep the spill away from heat, sparks, flames and welding operations. Ventilate area and evacuate employees from exposure if the airborne concentration exceeds the TLV. Refer to Section 15.

SECTION 07 HANDLING AND STORAGE

Handling: Avoid contact with skin, eyes, and clothing.

Storage : Keep container closed when not in use.

SECTION 08 EXPOSURE CONTROLS AND PERSONAL PROTECTION

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant vapors, mists or aerosols

are generated, wear a NIOSH approved or equivalent respirator.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a positive pressure, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles when attaching feeding equipment, doing maintenance or handling product. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton, and butyl (compatibility studies have not been performed.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

HUMAN EXPOSURE CHARACTERIZATION: Based on Nalco's recommended product application and our recommended personal protective equipment, the potential human exposure is: HIGH.

SECTION 09 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear to hazy light yellow FORM: Liquid ODOR: Hydrocarbon

DENSITY:	7.0-7.3 lbs/gal.	
SOLUBILITY IN WATER:	Insoluble	
SPECIFIC GRAVITY:	0.84-0.88 @ 60 Degrees F	
VISCOSITY:	368 cst @ 60 Degrees F	ASTM D-445
POUR POINT:	Less than -20 Degrees F	ASTM D-97
FLASH POINT:	140 Degrees F (PMCC)	ASTM D-93
VAPOR PRESSURE:	10.2 mm Hg @ 100 Degrees F	ASTM D-323

NOTE: These physical properties are typical values for this product.

SECTION 10 STABLILITY AND REACTIVITY

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO2 may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 11 TOXICOLOGICAL INFORMATION

TOXICITY STUDIES: No toxicity studies have been conducted on this product.

SECTION 12 ECOLOGICAL INFORMATION

If released into the environment, see CERCLA in Section 15.

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, state and federal regulations.

SECTION 14 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES	:	FLAMMABLE LIQUID, N.O.S.
UN/ID NO	:	UN 1993
HAZARD CLASS - PRIMARY	:	3 - FLAMMABLE LIQUID
PACKING GROUP	:	III
IMDG PAGE NO	:	3345
IATA PACKING INSTRUCTION	:	CARGO: 310
IATA CARGO AIRCRAFT LIMIT	:	220 L (MAX NET QUANTITY PER PACKAGE)
FLASH POINT	:	140 F 60.0 C
TECHNICAL NAME(S)	:	KEROSENE
RQ LBS (PER PACKAGE)	:	NONE
RQ COMPONENT(S)	:	NONE

SECTION 15 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, the following ingredients in this product is hazardous and the reasons is shown below.

Acetylenic diol - Eye irritant
Kerosene - Irritant, combustible
2-Ethylhexanol - Eye irritant, combustible

Kerosene = 100 ppm TLV
Manufacturer's recommendation

CERCLA/SUPERFUND, 40 CFR 117, 302:

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

XX Immediate (acute) health hazard
-- Delayed (chronic) health hazard
XX Fire hazard
-- Sudden release of pressure hazard
-- Reactive hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product does not contain ingredients on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 13 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/ formerly Sec. 307, 40 CFR 116/formerly Sec. 311:
None of the ingredients are specifically listed.

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments), Sec. 611 (40 CFR 82, CLASS I and II Ozone depleting substances):
This product contains the following ingredients covered by the Clean Air Act:

2-Ethylhexyl alcohol - Section 111

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
Substances known to the State of California to cause cancer are present as an impurity or residue.

MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:
The following states identify the ingredient(s) shown below as hazardous:

Massachusetts, New Jersey - Kerosene

INTERNATIONAL REGULATIONS:

This is a WHMIS controlled product under The House of Commons of Canada Bill C-70 (Class B2 and Class D2A). The product contains the following substance(s), from the Ingredient Disclosure List or has been evaluated based on its toxicological properties, to contain the following hazardous ingredient(s):

Chemical Name	CAS #	% Concentration Range
Deodorized kerosene	8008-20-6	40-70
2-Ethylhexanol	104-76-7	1-5
Acetylenic diol	126-86-3	1-5

SECTION 16 OTHER INFORMATION

Nalco internal number F302144

SECTION 17 RISK CHARACTERIZATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: MODERATE.

* The environmental risk is: LOW.

Any use inconsistent with Nalco's recommendations may affect our risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

NALCO/EXXON ENERGY CHEMICALS, L.P.
P.O. BOX 87 • Sugar Land, Texas 77487-0087 • (281) 263-7000

SECTION 18 REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (CD-ROM version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (CD-ROM version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, Ohio (CD-ROM version), Micromedex, Inc., Englewood, CO.

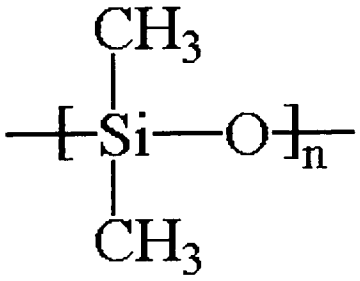
Shepard's Catalog of Teratogenic Agents (CD-ROM version), Micromedex, Inc., Englewood, CO.

Suspect Chemicals Sourcebook (a guide to industrial chemicals covered under major regulatory and advisory programs), Roytech Publications (a Division of Ariel Corporation), Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, Washington (CD-ROM version), Micromedex, Inc., Englewood, CO.

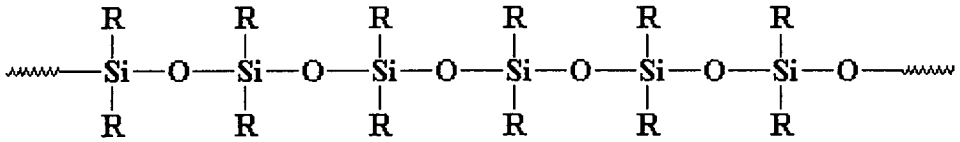
PREPARED BY: William S. Utley, PhD., DABT, Manager, Product Safety
DATE CHANGED: 03/12/1992 DATE PRINTED: 03/28/1999

Silicones

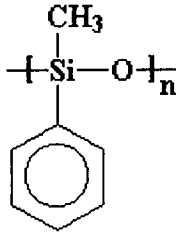


for Poly(dimethyl siloxane) at a glance, click here!

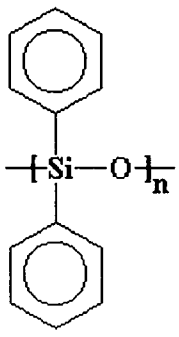
Silicones are used for a lot of things. They can be elastomers and lubricating oils. The caulking in your bathroom is probably made of a silicone. Silicones are also used to make the heat resistant tiles on the bottom of the space shuttle. Take a look at the picture on the right and you'll see how good silicones can be at deflecting heat. Back on earth, silicones are used to make hair conditioners that don't cause buildup.



Silicones are inorganic polymers, that is, there are no carbon atoms in the backbone chain. The backbone is a chain of alternating silicon and oxygen atoms. Each silicone has two groups attached to it, and these can be any organic groups. The picture at the top of this page shows methyl groups attached to the silicon atoms. This polymer is called polydimethylsiloxane. It is the most common silicone. Want to see some others? Polymethylphenylsiloxane and polydiphenylsiloxane are also popular with the kids these days.

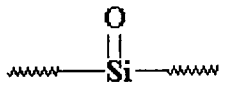


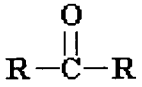
polymethylphenylsiloxane



polydiphenylsiloxane

"Polysiloxane" is the proper name for silicones. But when they were discovered it was thought that they had "silicone" groups in the backbone chain. When the real structure was discovered, it was too late, and the name stuck.

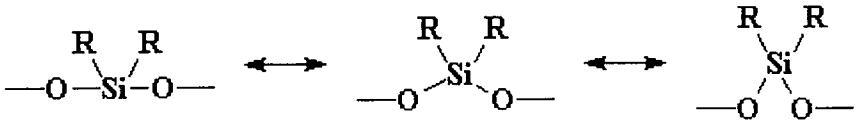




a ketone

Scientists once thought this was the structure of polysiloxanes, so they named them "silicones", by comparison carbon-containing ketones, shown on the right. Of course, this is not the structure.

Silicones make good elastomers because the backbone chain is very flexible. The bonds between a silicon atom and the two oxygen atoms attached to it are very flexible. The angle formed by these bonds can open and close like a scissors without much trouble. This makes the whole backbone chain flexible.



If you want to know how to make silicones, click here.

Polydimethylsiloxane does something really strange when you mix it with boric acid, or $B(OH)_3$. The mixture is soft and pliable, you can mold it into any shape easily with your fingers. But it is also very bouncy. What's more, push it gently and it gives way, but hit it hard with a hammer and it cracks! Strangely, if you spread it over newspaper, and pull it away, it gets printed with a mirror image of the newspaper text. No industrial use was ever found for his wonder material, but tons of it have been sold as toy called Silly Putty.

Return to Level Two Directory

Return to Macrogalleria Directory

GLUTERALDEHYDE

PROFILE #4

MATERIAL SAFETY DATA SHEET

NALCO/EXXON
ENERGY CHEMICALS, L.P.

PRODUCT

EC6111A BIOCIDE

Emergency Telephone Number
Medical (800) 462-5378 (24 hours) (800) I-M-ALERT

SECTION 01 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: EC6111A BIOCIDE
DESCRIPTION: An aqueous solution of glutaraldehyde

NFPA 704M/HMIS RATING: 3/3 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 02 COMPOSITION AND INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 15 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
Glutaraldehyde	111-30-8	25

SECTION 03 HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:
DANGER! Corrosive. Causes irreversible eye damage. Causes skin irritation. Harmful if inhaled. Harmful if swallowed. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Causes asthmatic signs and symptoms in hyper-reactive individuals. Do not get in eyes, on skin or on clothing. Avoid breathing vapor. Do not swallow. Wear goggles, protective clothing and rubber gloves. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT: Corrosive to the eyes with possible permanent damage depending on the length of exposure and on the first aid action given.

SKIN CONTACT: Can cause moderate to severe skin irritation. Depending on the length of exposure and on the first aid action given, prolonged contact may be corrosive to skin. Can cause allergic contact dermatitis in susceptible individuals. Can be harmful if absorbed.

INGESTION: Can be harmful or fatal.

INHALATION: Can cause severe respiratory tract irritation.

SYMPTOMS OF EXPOSURE:
ACUTE: A review of available data does not identify any symptoms from exposure not previously mentioned.

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AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 04 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.

SKIN: Immediately flush with water for at least 15 minutes. For a large splash, flood body under a shower. Call a physician at once.

INGESTION: Do not induce vomiting. Do not give anything to drink. Seek medical advice with urgency.

INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NOTE TO PHYSICIAN: Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

SECTION 05 FIRE FIGHTING MEASURES

FLASH POINT: None (TCC) ASTM D-56

EXTINGUISHING MEDIA: This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use water to cool containers exposed to fire.

SECTION 06 ACCIDENTAL RELEASE MEASURES

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT or (800) 462-5378.

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 15.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 15.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 8.

This product is toxic to fish. It should not be directly discharged into lakes, ponds, streams, waterways, or public water supplies.

SECTION 07 HANDLING AND STORAGE

Storage : Keep container closed when not in use.

SECTION 08 EXPOSURE CONTROLS AND PERSONAL PROTECTION

RESPIRATORY PROTECTION: Respiratory protection is not normally needed since the volatility and toxicity are low. If significant mists are generated, use either a chemical cartridge respirator with a dust/mist prefilter or supplied air.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a positive pressure, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors, or mists may be released.

PROTECTIVE EQUIPMENT: Wear impermeable gloves, boots, apron, and a face shield with chemical splash goggles. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton, and butyl (compatibility studies have not been performed. A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 09 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Clear	FORM: Liquid ODOR: Characteristic aldehyde	
DENSITY:	8.8 lbs/gal.	
SOLUBILITY IN WATER:	Completely	
SPECIFIC GRAVITY:	1.06 @ 60 Degrees F	ASTM D-1298
pH (NEAT) =	3.1-4.5	ASTM E-70
VISCOSITY:	3.4 cps @ 69 Degrees F	ASTM D-2983
FREEZE POINT:	-14 Degrees F/-10 Degrees C	ASTM D-1177
MELTING POINT:	-7 Degrees F	ASTM D-2117
BOILING POINT:	213 Degrees C @ 760 mm Hg	ASTM D-86
FLASH POINT:	None (TCC)	ASTM D-56
VAPOR PRESSURE:	16 mm Hg @ 20 Degrees C	ASTM D-323

NOTE: These physical properties are typical values for this product.

SECTION 10 STABLILITY AND REACTIVITY

INCOMPATIBILITY: Avoid contamination with strong acids and bases. Contact with these may cause a heat-generating reaction which is not expected to be violent.

STORAGE: Avoid storage at temperatures above 100 Degrees F. Storage stability is dependent on pH and temperature. Optimum stability when stored at pH of 3.7 - 4.5 and 22 - 37 Degrees C.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO2 may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have been conducted on various concentrations of glutaraldehyde. The results are shown below. (A.I. refers to active ingredient basis.)

ACUTE ORAL TOXICITY (ALBINO RATS):
LD50 for 50% solution = 1.3 ml/kg (733 mg/kg A.I.)
LD50 for 45% solution = 1.2 ml/kg (605 mg/kg A.I.)
LD50 for 25% solution = 1.54-1.87 ml/kg (409-497 mg/kg A.I.)
LD50 for 10% solution = 1.07-1.62 ml/kg (111-168 mg/kg A.I.)

ACUTE DERMAL TOXICITY (ALBINO RABBITS):
LD50 for 50% solution = 1.59-2.54 ml/kg (897-1432 mg/kg A.I.)
LD50 for 45% solution = 2.00-2.71 ml/kg (1004-1360 mg/kg A.I.)
LD50 for 25% solution = 8.0-12.80 ml/kg (2128-3045 mg/kg A.I.)

COMMENTS: A major determinant of the acute percutaneous toxicity of glutaraldehyde solution is concentration. Cumulative toxicity is also possible by repeated dermal contact with 25-50% solution of glutaraldehyde.

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS): At 10% or greater, glutaraldehyde solutions may cause moderate to severe irritation, with possible necrosis after prolonged contact.

DOT CORROSIVITY TEST: Aqueous solutions of 45%-50% produce some corrosive lesions when tested under DOT conditions.

SKIN SENSITIZATION: At levels of 0.2% and lower no sensitization occurred in human studies. Higher levels produced allergic contact dermatitis. Cross reaction with formaldehyde or from lower concentrations of glutaraldehyde does not occur.

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS): Severely irritating
COMMENTS: At levels of 0.2% and below of glutaraldehyde no eye irritation was noted. Levels above 0.2% of glutaraldehyde produced moderate to severe irritation and corneal injury.

ACUTE INHALATION TOXICITY (ALBINO RATS): LC(LO) = Greater than 2.5 L/minute (saturated vapor for 6-8 hours produced irritant effects, but resulted

in no deaths.)

COMMENTS: Examination of all sacrificed animals at the end of the study showed no abnormalities.

OTHER TOXICITY RESULTS: Laboratory studies have shown that glutaraldehyde is not teratogenic, and several studies have shown the material not to be a mutagen.

Doses of 25 and 50 mg/kg given by gavage to pregnant rats produced decreases in maternal body weight. There were no other indications of maternal toxicity nor were there evidence of fetotoxicity or external, visceral or skeletal abnormalities. Mice (CD-1 strain) given 100 mg/kg by gavage showed fetotoxicity as evidenced by decreased body weight. At lower doses, there was no evidence of fetotoxicity or skeletal abnormalities. No evidence of teratogenic effects were noted in either species.

Mutagenicity in vitro tests of Chinese hamster ovary, sister chromatid exchange and unscheduled DNA synthesis did not produce dose-related responses. Oral doses of 30 and 60 mg/kg to mice showed no effect in the dominant lethal assay. In all five strains of Salmonella, with and without metabolic activation by S 9 liver homogenate, no mutagenic response was noted.

Glutaraldehyde incorporated into the diet of rats up to 1.6 g/kg for seven days resulted in no deaths. An eleven week drinking water study of glutaraldehyde at up to 0.5% showed no effect.

Preliminary histopathological findings in the 24-month sacrifice of a combined oncogenicity/chronic study in Fischer 344 rats given glutaraldehyde in drinking water showed an increase in the incidence of the spontaneously occurring large granular cell lymphocytic leukemia (LGL) at all dosages (50, 250, 1000 ppm) compared with the controls only for the female rats. Male rats had the same incidence as controls at all levels of exposures. The significance of this observation to humans remains to be determined.

SECTION 12 ECOLOGICAL INFORMATION

AQUATIC DATA: Aquatic toxicity studies have been performed on various concentrations of glutaraldehyde solutions with results as follows.

Bluegill sunfish:
96-hour static acute LC50 for 25% solution = 37.6 ppm
96-hour NOEL for 25% solution = 10 ppm

Rainbow trout:
96-hour static acute LC50 for 25% solution = 42.1 ppm
96-hour NOEL for 25% solution = 32 ppm

Daphnia magna:
48-hour static acute LC50 for 25% solution = 16.9 ppm
48-hour NOEL for 25 and 50% solutions = 5 ppm

Data for 25% solutions using other species:
48-hour static acute LC50 in Oyster larvae = 2.1 ppm
96-hour static acute LC50 in Green crabs = 465 ppm
96-hour static acute LC50 in Grass shrimp = 41 ppm

AVIAN DATA: Wildlife toxicity studies have been performed on 25 and 50% solutions of glutaraldehyde with results as follows.

8-day dietary LC50 to Bobwhite Quail = 10,000 ppm
8-day dietary LC50 to Mallard Duck = 10,000 ppm
Acute oral LD50 to Mallard Duck = 933 mg/kg for 50% solution
Acute oral LD50 to Mallard Duck = 1631 mg/kg for 25% solution

DEGRADATION: In the standard BOD test, glutaraldehyde was degraded at greater than 50% in less than 5 days.

AQUATIC DATA: Results below are based on the active ingredient.

96 hour static acute LC50 to sewage microorganisms = 34 ppm

96 hour no observed effect concentration is 10 ppm based on no mortality or abnormal effects.

In tests against sewage microorganisms, the LC50 for glutaraldehyde is 17 ppm with a NOEL of 5 ppm.

If released into the environment, see CERCLA in Section 15.

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, state and federal regulations.

SECTION 14 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES (UNLESS SPECIFIED BELOW)	:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

AIR TRANSPORTATION	:	OTHER REGULATED SUBSTANCES
MARINE TRANSPORTATION (IMDG/IMO)	:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION
UN/ID NO	:	NONE
HAZARD CLASS - PRIMARY	:	0 - NOT REQUIRED
PACKING GROUP	:	N/A
IMDG PAGE NO	:	NONE
IATA PACKING INSTRUCTION	:	CARGO: 906
IATA CARGO AIRCRAFT LIMIT	:	NO LIMIT (MAX NET QUANTITY PER PACKAGE)
FLASH POINT	:	NONE
TECHNICAL NAME(S)	:	GLUTARALDEHYDE
RQ LBS (PER PACKAGE)	:	NONE
RQ COMPONENT(S)	:	NONE

SECTION 15 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, the following ingredient in this product is hazardous and the reason is shown below.

Glutaraldehyde - Corrosive

Glutaraldehyde = Ceiling 0.05 ppm, 0.2 mg/m3 ACGIH/TLV

Glutaraldehyde = Ceiling 0.2 ppm, 0.8 mg/m3 OSHA/PEL

CERCLA/SUPERFUND, 40 CFR 117, 302:
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

XX Immediate (acute) health hazard
XX Delayed (chronic) health hazard
-- Fire hazard
-- Sudden release of pressure hazard
-- Reactive hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product does not contain ingredients on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The active ingredient is regulated under FIFRA and exempted under TSCA. All the inerts are on the Inventory List.

FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT (FIFRA), 7 USC 135:
EPA Reg. No. 10352-14-10349. This product is registered for use as a microorganism control chemical. In all cases follow instructions on the product label.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 13 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):
None of the ingredients are specifically listed.

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments), Sec. 611 (40 CFR 82, CLASS I and II Ozone depleting substances):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
This product does not contain any chemicals which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:
Regulated in those states using the TLV for glutaraldehyde as a criteria for listing.

INTERNATIONAL REGULATIONS:

This product is a registered biocide and is exempt from WHMIS under The House of Commons of Canada Bill C-70.

SECTION 16 OTHER INFORMATION

None

SECTION 17 USER'S RESPONSIBILITY

Our Risk Characterization is being determined.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 18 REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (CD-ROM version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (CD-ROM version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, Ohio (CD-ROM version), Micromedex, Inc., Englewood, CO.

Shepard's Catalog of Teratogenic Agents (CD-ROM version), Micromedex, Inc., Englewood, CO.

Suspect Chemicals Sourcebook (a guide to industrial chemicals covered under major regulatory and advisory programs), Roytech Publications (a Division of Ariel Corporation), Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, Washington (CD-ROM version), Micromedex, Inc., Englewood, CO.

PREPARED BY: William S. Utley, PhD., DABT, Manager, Product Safety
DATE CHANGED: 01/27/1998 DATE PRINTED: 03/28/1999

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : X-CIDE 0102

SUPPLIER:
Baker Petrolite
12645 W. Airport
P.O. BOX 5050
Sugar Land, TX 77478-5050

CUSTOMER CARE: 1-800-231-3606
For information call 281-276-5400

MANUFACTURER:
Baker Petrolite
12645 W. Airport
P.O. BOX 5050
Sugar Land, TX 77478-5050

CUSTOMER CARE: 1-800-231-3606
For information call 281-276-5400

Chemtrec: 800-424-9300
PREPARER: Regulatory Info Grp, DATE OF LAST REVISION: 05/04/97
PREPARER TITLE:
Supercedes MSDS Dated: 01/02/97

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	HAZARDOUS INGREDIENTS	CAS NUMBER	WT/WT%
01	Glutaraldehyde	111-30-8	10-30

EXPOSURE LIMITS

ITEM	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING	COMPANY TLV-TWA	SKIN
01	(c) 0.2ppm	(c) 0.2ppm*	N.E.	N.E.	(c) 0.1 ppm	NO

LEGEND: N.A.: Not Applicable (C): Ceiling Limit
N.E.: Not Established Y : Skin absorption is significant to overall
N.D.: Not Determined N : Skin absorption is not significant

(Continued on Page 2)
PRODUCT WARRANTY, DISCLAIMER AND LIMITATION OF LIABILITY ARE FOUND ON THE LAST PAGE

SECTION 3 - HAZARDS IDENTIFICATION

****
********** EMERGENCY OVERVIEW **********
****

Appearance: Amber liquid Odor: Characteristic

SIGNIFICANT HAZARDS:

COMBUSTIBLE liquid and vapor. Severely irritating to the eyes and skin. Irritating to the respiratory tract. Contains a material which may cause skin and/or respiratory sensitization.

POTENTIAL HEALTH EFFECTS

EYE CONTACT: Direct eye contact may cause severe irritation or burns. If not immediately removed, may cause permanent eye damage.

SKIN CONTACT: Direct skin contact may cause severe irritation. Prolonged and repeated skin contact may cause moderate to severe skin irritation and possibly burns. Repeated skin contact may produce an allergic sensitization. In such cases, incidental (minor) contact may cause allergic rashes.

INHALATION: Vapors are intensely irritating to the mucous membranes, and may be harmful or even fatal if inhaled at high concentrations. Severe cases may result in severe and delayed lung irritation and pulmonary edema.

INGESTION: Harmful if swallowed. May cause severe gastrointestinal disturbance with headache, nausea, vomiting and diarrhea. May result in irritation or burns to the mouth and digestive system.

CHRONIC EFFECTS: Glutaraldehyde mists and vapors produce intense eye, nose and respiratory irritation. Coughing, difficult breathing and headache accompany exposure to glutaraldehyde. Prolonged exposure may cause chemical pneumonitis and aggravate asthma conditions. Glutaraldehyde is a sensitizer. Animal studies have shown signs of toxic hepatitis at high doses. Animal studies have shown that a component(s) of this product is associated with adverse effects or embryo/fetotoxicity at maternally toxic dosage levels.

CARCINOGENICITY: No Information.

SECTION 4 - FIRST AID MEASURES

FIRST AID PROCEDURES

EYES: If material gets into eyes, flush with water immediately for 15 minutes. Consult a physician.

SKIN: In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. If rash, irritation or

(Continued on Page 3)

SECTION 4 - FIRST AID MEASURES

burns develop, consult a physician. Launder clothing before reuse.

INHALATION: If inhaled, remove to fresh air. Administer oxygen if necessary. Consult a physician if symptoms persist or exposure was severe.

INGESTION: If ingested, DO NOT induce vomiting. If conscious, drink 8-10 oz. of water promptly. Call a physician immediately.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock and convulsion may be necessary.

SECTION 5 - FIRE-FIGHTING MEASURES

Flashpoint and Method: >93 C (>200 F) SFCC ASTM D-3828

Autoignition Temperature: N.D.

Flammable Limits: LEL: N.A. UEL: N.A.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide. Carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Combustible liquid. At elevated temperatures, vapors can form an ignitable mixture with air. Vapors can flow along surfaces to distant ignition sources and flash back.

EXTINGUISHING MEDIA: CO2, Foam, Water Fog

FIRE-FIGHTING INTRUCTIONS: Use a self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive pressure mode. Combustible. Cool fire-exposed containers using water spray.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

LEAKS OR SPILLS: Use personal protective equipment as necessary. Absorb with suitable chemical absorbent. Dispose of material in accordance with all federal, state and local regulations. Dike to prevent entering any sewer or waterway. Transfer liquid to a holding container.

OTHER: No Information.

Refer to Section 15 for regulatory reporting requirements in the event of an accidental release.

(Continued on Page 4)

SECTION 7 - HANDLING AND STORAGE

HANDLING AND STORAGE: Combustible liquid. Avoid heat, sparks and open flames. Avoid breathing vapor and contact with eyes, skin and clothing. Keep container closed when not in use. Chemical residue may remain in emptied container. Do not reuse empty containers without commercial cleaning or reconditioning. Use in well ventilated area.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: General ventilation should be provided to maintain ambient concentrations below nuisance levels. Local ventilation of emission sources may be necessary to maintain ambient concentrations below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT (PPE): Chemical resistant gloves and chemical goggles should be used to prevent skin and eye contact. Wear neoprene or butyl rubber gloves.

RESPIRATORY PROTECTION: When concentrations exceed the exposure limits specified, use of a NIOSH approved full facepiece organic vapor cartridge respirator is recommended. Where the protection factor may be exceeded, use of a full facepiece supplied air respirator or Self Contained Breathing Apparatus (SCBA) may be necessary.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Solubility in Water:	Soluble
pH @ 5.0% in N.D.:	N.D.
Density @ 60 F (16 C):	8.90 lb/USgal
Evaporation Rate:	Is slower than Ether
Boiling Point ASTM D-86:	N.D.
Vapor Density:	Is heavier than air
Vapor Pressure:	0.8955 PSIA@ 68 F (22 C)
Physical State:	Liquid

OTHER: No Information.

SECTION 10 - STABILITY AND REACTIVITY

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID: Keep away from strong oxidizing agents, heat and open flames.

HAZARDOUS DECOMPOSITION PRODUCTS: No Information.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

(Continued on Page 5)

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: This product is stable under normal storage conditions.

SECTION 11 - TOXICOLOGICAL INFORMATION

PRODUCT TOXICOLOGICAL INFORMATION

LC50 Inhalation	LD50 Dermal	LD50 Oral	Eye Irritation Score	Skin Irritation Score
	8560 mg/kg-RB	1650 mg/kg-R	4	4

OTHER: No Information.

COMPONENT TOXICOLOGICAL INFORMATION:

COMPONENT	LD50 Dermal	LD50 Oral	LC50 Inhal
Glutaraldehyde	2560 mg/kg-RB	252 mg/kg-R	24 ppm/4H-R

LEGEND: R = Rat
RB = Rabbit
M = Mouse
GP = Guinea Pig

SKIN AND EYE SCORE: 1 = No Effect / Slight Irritant
2 = Moderate Irritant
3 = Strong Irritant
4 = Skin: Extreme Irritant;
Eye: Extreme Irritant/Corrosive

SECTION 12 - ECOLOGICAL INFORMATION

An ECOTOX (R) Report is available for this product. Please contact Baker Petrolite Corporation for a copy of this report.

OTHER: No Information.

SECTION 13 - DISPOSAL INFORMATION

DISPOSAL INFORMATION: Responsibility for proper waste disposal rests with the generator of the waste. Dispose of any waste material in accordance

(Continued on Page 6)

SECTION 13 - DISPOSAL INFORMATION

with applicable regulations. Note that these regulations may also apply to empty containers, liners, and rinsate. Processing, use, dilution, or contamination or this product may cause its physical and chemical properties to change.

SECTION 14 - TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (D.O.T.) INFORMATION:

Proper Shipping Name: NOT REGULATED

D.O.T. Emergency Response Guide: N.A. Marine Pollutant: N.A.

INTERNATIONAL MARITIME ORGANIZATION (I.M.O.) INFORMATION:

Proper Shipping Name: NOT REGULATED by I.M.O.

IMDG Code Page: N.A.EMS Number: N.A.

MFAG Table Number 1: N.A. MFAG Table Number 2: N.A.

Marine Pollutant: N.A.

OTHER: No Information.

SECTION 15 - REGULATORY INFORMATION

CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES:
The Baker Petrolite product contains the following components that are subject to the release reporting requirements of the Comprehensive Environmental Response, Compensation, and Liability Act. Also listed is the Reportable Quantity (RQ) in pounds for each such component, and the amount of product, in gallons, that must be released or spilled in order to exceed the RQ.

---------- CHEMICAL NAME ----------	CAS NUMBER	RQ lbs.	RQ, gal

SARA TITLE III:
This Baker Petrolite product contains the following components that are

(Continued on Page 7)

SECTION 15 - REGULATORY INFORMATION

identified as extremely hazardous substances by the Superfund Amendments and Reauthorization Act. Also listed is the Reportable Quantity (RQ) in pounds for each such component, and the amount of product, in gallons, that must be released or spilled in order to exceed the RQ; and the Threshold Planning Quantity (TPQ) in pounds for each such component, and the amount of product in gallons that contains the TPQ.

--------- CHEMICAL NAME ---------- CAS NUMBER RQ lbs RQ,gal TPQ# TPQ
No SARA Extremely Hazardous materials present in this product.

SARA 311/312:
Baker Petrolite has determined that under Sections 311/312 of SARA Title III, the following hazard categories apply to this product:

HAZARD: IMMEDIATE HEALTH

SARA SECTION 313:
This Baker Petrolite product contains the following components that are subject to the annual toxic release inventory reporting requirements of Section 313 of SARA Title III. Also listed is the concentration of the component, in weight percent, in the product, A component is not listed if its concentration is less than the de minimis level.

---------- Chemical Name ---------- CAS Number WT/WT%
No SARA Section 313 components exist in this product.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
This product or its components, if a mixture, are listed on the TSCA inventory.

This Baker Petrolite product contains the following components that are subject to the reporting requirements of TSCA Section 12(b) if exported from the United States:

---------- Chemical Name ---------- CAS Number
No TSCA 12(b) chemicals are present in the product.

SIGNIFICANT NEW USE RULES (SNUR): This product does not contain any components that are subject to a Significant New Use Rule (SNUR).

PENNSYLVANIA RIGHT-TO-KNOW:
The following non-hazardous ingredients are present in the product at greater than 3%:

---------- CHEMICAL NAME ---------- CAS NUMBER
Water 7732-18-5

(Continued on Page 8)

SECTION 16 - OTHER INFORMATION

NFPA: Health: 3 Flammability: 1 Reactivity: 0 Special: COR

Revision History: 08/28/96 Updated Product Toxicology Data, Sect. 11
10/21/96 new format
12/96 updated RQ's, sect. 15
File 932
05/97 Canadian Review
08/25/98 - Updated EcoTox Report on file.

The information and recommendations contained hereon are believed to be accurate and reliable as of the date issued. However, we do not warrant their accuracy or reliability.

We only warrant to you, but no other persons, that the product referenced herein shall conform to our quality assurance specifications for the product on the date of shipment to you. WE EXPRESSLY DISCLAIM ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Any technical advice, information or recommendation given to you is given gratis without any warranty whatsoever as to the advice, information or recommendation given or results obtained.

You shall assume all risks and shall be solely responsible for the results obtained from the storage, handling or use of the product and any information or recommendation regarding the product, whether alone or in combination with other substances.

UNDER NO CIRCUMSTANCES SHALL WE BE LIABLE FOR ANY ECONOMIC, CONSEQUENTIAL (INCLUDING LOST PROFITS OR SAVINGS) OR INCIDENTAL DAMAGES, EVEN IF WE ARE INFORMED OF THEIR POSSIBLITY, EXEMPLARY OR PUNITIVE DAMAGES, REGARDLESS OF THE FORM OR ACTION, WHETHER IN CONTRACT OR TORT, INCLUDING OUR SOLE OR JOINT NEGLIGENCE AND STRICT LIABILITY.

<END OF MSDS>

QUATERNARY AMMONIUM COMPOUNDS

PROFILE #5

MATERIAL SAFETY DATA SHEET

Product A

AUTION CODE 2-3-0

1 - SECTION I - IDENTITY

CHEMICAL NAME: Chemical Identity Is A Trade Secret

CHEMICAL FAMILY: Proprietary

2 - SECTION II - REGULATORY CLASSIFICATION

ENVIRONMENTAL	OCCUPATIONAL	TRANSPORTATION
RQ= 1506 Gallons (Methanol)	OSHA Non-Hazardous: No	Not Regulated: No
TPQ= None	OSHA Hazardous: Yes	Regulated: Yes
	X Acute	Flammable Liquid,
SARA 8313: Yes	X Chronic	N.O.S., (Contains
Methanol <43%	X Fire	Methanol, Isopropanol)
	NA Pressure	3, UN 1993, II
	NA Reactive	

The components of this product are listed on the TSCA inventory.

- SECTION III - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT	CAS #	PEL(OSHA)* TWA	PEL(OSHA)* STEL	PEL(OSHA)* A/L	TLV(ACGIH)* TWA	TLV(ACGIH)* STEL	MFG* REC, TWA
Methanol (Skin) (<43%)	67-56-1	200	250		200	250	
Isopropanol (% - Proprietary)	67-63-0	400	500		400	500	

*ppm unless otherwise indicated; (C) denotes ceiling limit; (S) or (Skin) indicates that skin absorption may make a significant contribution to overall exposure.

4 - SECTION IV - PHYSICAL & CHEMICAL PROPERTIES

Specific Gravity: 0.926 (H2O=1) @77F (25C)	pH: 6.0 - 7.0 (Neat)
Density (lbs/gallon): 7.72	Viscosity (Method): 8.5 cps
Vapor Density (Air=1): > 1	Appearance and Odor: Dark brown liquid with strong amine odor.
Solubility: Soluble in water	Stability: Stable
Freezing Point: Not Determined	Pour Point: <-40F (<-40C)
Flash Point (Method): 63F (17C)	Percent Organic Compounds: Proprietary

PRODUCT A

AUTION CODE 2-3-0

4 - SECTION IV - PHYSICAL & CHEMICAL PROPERTIES (continued)

Boiling Point: Not Determined

Conditions to Avoid: Oxidizers; heat sparks, or open flame

Vapor Pressure: 2.39 psia

Haz. Decomp. Prod: Carbon monoxide; carbon dioxide; oxides of nitrogen; and/or fumes of hydrogen chloride

Hazardous Polymerization: Will not occur

FIRE CONTROL PROCEDURES: Use foam, dry chemical, CO2, water fog or spray. Do not enter a fire area without proper protective equipment, including NIOSH/MSHA approved, self-contained breathing apparatus. Cool exposed containers with water spray. Avoid vapors.

FIRE HAZARDS:
Flammable Liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point.
Vapors can travel to source of ignition and flash back.
Never use welding or cutting torch on or near drums, even when empty.
Explosion may result.
During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Vapors may form explosive mixture with air.

5 - SECTION V - HEALTH HAZARDS

EFFECTS OF OVEREXPOSURE:
INHALATION: Prolonged or excessive inhalation may cause respiratory tract irritation.
EYE CONTACT: Heavy exposure may cause irritation of the eyes.
SKIN CONTACT: Prolonged or repeated exposure may cause skin irritation.
INGESTION: Substance may be harmful if swallowed.
SKIN ABSORPTION: May be absorbed through the skin in harmful amounts.

OTHER INFORMATION:

Methanol is a component of this product. It can be highly toxic, even lethal, in inhalation exposures (Frens & Schauben, 1993), but most of the literature on methanol poisoning deals with accidental or intentional ingestions. There are three stages of toxicity from acute exposures (either by inhalation or ingestion) to methanol: (1) a rapid narcotic effect involving drowsiness or fatigue with mild irritation of the eyes and mucous membranes, (2) a latent period of 10-15 hours, followed by (3) more severe CNS (Central Nervous System) effects including nausea, vomiting, dizziness, headache, failing eyesight, visual disturbances, metabolic acidosis, and deep respiration (Clayton & Clayton, 1982). The last stage is thought to be due to the formation of toxic metabolite(s) of methanol. Permanent toxic effects can be produce from a single exposure. The effects include damage to both central and motor nerves and blindness due to damage to the optic nerve. Other symptoms of exposure to methanol include roaring in the ears, insomnia, rapid eye movements, tremor, dizziness, loss of coordination, dilated pupils, itching of the skin, skin irritation, and dermatitis caused by the removal of skin oils. As little as 15 mL can cause blindness and 30-250 mL can be fatal (Sax, 1984). Methanol can be absorbed through the skin in toxic amounts. Since it is eliminated slowly from the body, it can have cumulative toxic effects from daily exposures (ACGIH, 1986). Subacute ingestion of methanol has caused liver damage in laboratory animals (Clayton & Clayton, 3rd Edition). No studies were found on the carcinogenicity of methanol at the time of this review (Reprotext). It has shown to be a teratogen and a fetotoxin in tests on laboratory animals (Mortelmans, K. et al, Environmental Mutagenesis, 1986, 7, Pg 1). It has shown some genetic effects in laboratory

Product

AUTION CODE 2-3-0

5 - SECTION V - HEALTH HAZARDS (continued)

tests (Reprotext).

Animal Toxicity Data for Methanol
- Human Oral LDLo - 143 & 428 mg/kg (RTECS)
- Rat Oral LD50 - 5,628 mg/kg (RTECS)
- Rat Inhalation LC50 - 64,000 ppm/4 Hr (RTECS)
- Rabbit Dermal LD50 - 15,800 mg/kg (RTECS)

Irritation Test Data for Methanol
Standard Draize Testing
- Rabbit Skin - 20 mg/24 hours - Reaction: moderate (RTSCS)
- Rabbit eye - 40 mg - Reaction: moderate (RTECS)
- Rabbit eye - 100 mg/24 hours - Reaction: moderate (RTECS)

Isopropanol, a component of this product may irritate the skin and can produce an itching or burning sensation and prolonged exposure can cause dryness and cracking of the skin. It is also an irritant to the eyes, nose and throat. Excessive inhalation of the vapors may cause headaches, drowsiness, a loss of coordination, collapse, and death. The probable lethal oral dose for an adult is 8 fluid ounces (240 mL) but as little as 20 mL in water can produce symptoms (HSDB). The symptoms from ingestion include: 1. dizziness, incoordination, headache, confusion, stupor, and coma. 2. gastroenteritis with vomiting, hematemesis, and diarrhea. 3. hypotension, with or without bradycardia, and sometimes circulatory collapse. 4. persistent coma with hypothermia. 5. death by respiratory arrest. 6. Late manifestations: aspiration pneumonia, kidney and liver dysfunctions, which are usually mild and transient, but the renal impairment may be serious (HSDB). In addition, isopropanol has shown to be a fetotoxin in tests on laboratory animals [Nelson, BK et al (1988), Food and Chemical Toxicology, 26(1), pps 247-254]. Inhalation of high levels of isopropanol (4,000 and 8,000 ppm for 8 hours) has produced congestion in the liver, lungs, and spleen of laborstory animals (Laham S, et al, 1980, "Drug and Chemical Toxicology). Ingestion has produced hyperglycemia (high blood sugar) in humans (Lacouture, P, et al, 1983, "American Journal of Medicine" and Chan K-M, et al, 1993, "Clinical Chemistry"). In a four month study, inhalation of isopropanol vapors for 20 hours per week by laboratory animals produced bronchitis, pneumonia, and blood effects (International Program of Chemical Safety, 1990, Environmental Health Criteria 103: 2-propanol, World Health Organization).

Animal Toxicity Data for Isopropanol
- Rat Oral LD50 - 5,045 mg/Kg (RTSCS)
- Rat Inhalation LC50 - 19,000 ppm/8 Hr, female (Sax's Dangerous Properties of Industrial Materials, 8th Edition)
- Rabbit Dermal LD50 - 12,800 mg/Kg (RTECS)
- Human Oral LDLo - 3,570 mg/Kg (RTECS)
- Man Oral LDLo - 5,272 mg/Kg (RTECS)

Irritation Test Data
Standard Draize
- Rabbit Skin - 500 mg REACTION: Mild (RTSCS)
- Rabbit Eye - 100 mg REACTION: Severe (RTECS)

TARGET ORGANS (29 CFR 1910.1200-APPENDIX A):

Eye Hazard
Cutaneous Hazard (Skin)
Neurotoxin (Nervous System)
Pulmonary Agent (Lungs)
Gastrointestinal Tract

6 - SECTION VI - EMERGENCY & FIRST AID PROCEDURES

EYE CONTACT: Hold eyelids apart and flush eyes with plenty of water for at

PRODUCT A

AUTION CODE 2-3-0

6 - SECTION VI - EMERGENCY & FIRST AID PROCEDURES (continued)

least 15 minutes. If irritation or adverse symptoms develop, seek medical attention.
INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.
SKIN CONTACT: Remove all contaminated clothing, flush skin with water for 10 minutes. Afterwards, wash the affected area with soap and water and then rinse.
INGESTION: Do not induce vomiting. Seek medical attention immediately.

7 - SECTION VII - PROTECTIVE EQUIPMENT RECOMMENDATIONS

VENTILATION: The use of mechanical ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperatures, or is agitated. Where engineering controls are not feasible, assure use is in an area where there is natural air movement.

Under normal operating conditions, no excursions above the regulated (recommended) exposure levels should occur. However, if used at elevated temperatures, lower atmospheric pressure (high altitudes) or any other physical conditions that may increase the inhalation exposure, respiratory protective equipment as described below, should be worn. Also, due to individual susceptibility and sensitivity, before respirators are used, a full medical evaluation should be performed per 29 CFR 1910.134(b)(10).

RESPIRATORY	CHEMICAL RESISTANT APPAREL	EYE/FACE
X As Needed X Air Supplied (SCBA) Air Purifying X Full Face Piece Half Face Piece Cartridge or Cannister Acid Gas Organic Vapor Ammonia	X Butyl Gloves Tyvek Polyethylene Suit Neoprene Boots	X Chemical Splash Goggles Full Face Shield

A thorough review of the job task (job safety analysis) by a competent safety professional should be conducted to determine the appropriate level of protection. See 29 CFR 1910, Subpart I and 29 CFR 1910.133 for further information.

8 - SECTION VIII - SPILL & LEAK PROCEDURES

Don appropriate protective clothing and respiratory protection prior to entering a spill/leak area. Eliminate ignition sources. Approach area upwind if possible. Shut off leak if it can be done safely. Dike and pump large spills into salvage containers. Soak up residue and small spills with absorbent clay, sand, or dirt and place in salvage containers. If RQ (reportable quantity) is exceeded, report to National Spill Response Office 1-800-424-8802. Also, in some jurisdictions, spills or leaks of any hazardous materials are reportable--consult local load agencies for further information. Continue to observe precautions.

WASTE DISPOSAL METHOD(S): Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures and processes may change the classification to non-hazardous, or

RODUCT A

AUTION CODE 2-3-0

8 - SECTION VIII - SPILL & LEAK PROCEDURES (continued)

hazardous for reasons other than, or in addition to product characteristics. Dispose of all waste and/or containers in accordance with federal, state and local regulations.

REQUIREMENTS FOR TRANSPORTATION, HANDLING AND STORAGE: Transport, handle and store in accordance with OSHA Regulation 1910.106 and applicable DOT regulations.

Avoid inhalation of vapors or mists. Do not get in eyes,on skin or on clothing Keep container closed when not in use. Wear suitable protection for eyes and skin when handling. Use with adequate ventilation. Avoid contact with oxidizers. Store in well-ventilated area. Store in cool, dry area.

Control ignition source; keep away from heat, sparks and open flame. Use properly grounded electrical equipment when working with this product.

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Petrolite, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

By: C.J. Miller Date: 04/17/98 Supercedes: 12/13/94
Regulatory Information Specialist

04/17/98 - Revised Section IV

TETRAKISHYDROXYMETHYL PHOSPHONIUM SULFATE (THPS)

PROFILE #6

MAGNACIDE(R) 535

Caution Code 2-0-0

MAGNACIDE® is a registered trademark of Baker Petrolite Corporation

ID: 0826535

1 - SECTION I - IDENTITY

BAKER PETROLITE
A Baker Hughes company
3900 ESSEX LANE, P.O. BOX 27714
HOUSTON, TX 77227-7714

EMERGENCY TELEPHONE NUMBERS:
CHEMTREC: 1-800-424-9200
BPC: 1-800-231-3606
TELEPHONE NUMBER FOR INFORMATION:
713-599-7400

CHEMICAL NAME: Chemical Identity Is A Trade Secret

CHEMICAL FAMILY: Proprietary

2 - SECTION II - REGULATORY CLASSIFICATION

ENVIRONMENTAL	OCCUPATIONAL	TRANSPORTATION
RQ= None	OSHA Non-Hazardous: No	Not Regulated: No
TPQ= None	OSHA Hazardous: Yes	Regulated: Yes
	X Acute	Toxic liquid, organic.
SARA 313: No	X Chronic	n.o.s., (contains
	NA Fire	phosphonium, tetrakis
	NA Pressure	(hydroxymethyl)-
	NA Reactive	sulfate), 6.1, UN2810,
		III

EPA REGISTRATION NO. 33677-6-10707

This product is subject to regulation under the US Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and is therefore exempt from US Toxic Substance Control Act (TSCA) Inventory listing requirements.

3 - SECTION III - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT	CAS #	PEL (OSHA)* TWA	PEL (OSHA)* STEL	PEL (OSHA)* A/L	TLV (ACGIH)* TWA	TLV (ACGIH)* STEL	MFG* REC. TWA
Phosphanium, tetrakis (hydroxymethyl)-. sulfate (3:1)	55566-30-8	None Established					

*ppm unless otherwise indicated: (C) denotes ceiling limit: (S) or (Skin) indicates that skin absorption may make a significant contribution to overall exposure.

4 - SECTION IV - PHYSICAL & CHEMICAL PROPERTIES

Specific Gravity @60F: 1.164 (H2O=1)

pH:
1% of Product: 3.24

Density (lbs/gallon): 9.69

Viscosity (Method): 21.2 cps @ 77F

Vapor Density (Air=1): > 1

Appearance and Odor: Clear colorless liquid with pungent odor

Solubility: Dispersible in water

Stability: Stable

Freezing Point: Not Determined

Pour Point: Not Determined

MAGNACIDE(R) 535

olution Code 2-0-0

ID: 0826535

4 - SECTION IV - PHYSICAL & CHEMICAL PROPERTIES (continued)

Flash Point (Method): >200F

Percent Organic Compounds: Not Determined

Boiling Point: Not Determined

Vapor Pressure: Not Determined

Conditions to Avoid: Oxidizers; heat, sparks or open flame, strong bases

Haz. Decomp. Prod.: Phosphine, oxides of phosphorus, sulfur

Hazardous Polymerization: Will not occur

FIRE CONTROL PROCEDURES: Use foam, dry chemical, CO2, water fog or spray. Do not enter a fire area without proper protective equipment, including NIOSH/MSHA approved, self-contained breathing apparatus. Cool exposed containers with water spray. Avoid vapors.

FIRE HAZARDS:
No unusual fire hazards; material is not flammable and/or combustible.

5 - SECTION V - HEALTH HAZARDS

EFFECTS OF EXPOSURE:
INHALATION: Prolonged or excessive inhalation may cause respiratory tract irritation.
INHALATION: May be harmful if inhaled. High concentrations may be toxic.
EYE CONTACT: Heavy exposure may cause irritation of the eyes.
SKIN CONTACT: Prolonged or repeated exposure may cause skin irritation.
SKIN ABSORPTION: Not expected to be absorbed through the skin under normal conditions.
INHALATION: Not expected to be harmful under normal conditions of use, however, inhalation of high concentrations of vapors or mists or inhalation for prolonged periods of time may cause respiratory tract irritation and/or central nervous system (CNS) effects such as lightheadedness, dizziness, headaches or unconsciousness.

Animal Toxicity Data for Magnacide 535
Skin: Dermal LD50(Rabbit) >2000 mg/kg
Ingestion: Oral LD50(Rat) - 8110 mg/kg
Inhalation: Inhalation LC50(Rat) 2.48 mg/l for 1 hr.

Ecotoxicological Information on Magnacide 535
96hr LC50 (Trout) = 119mg/l; Bluegill= 93mg/l
48hr LC50 (Daphnia Magna) = 19.4 mg/l

OTHER INFORMATION:

Phosphonium, tetrakis(hydroxymethyl)-, sulfate is a component of this product whose chemical family has been tested and produced no significant adverse health effects in laboratory animals. There is a possibility that thermal decomposition may produce bicyclic phosphates and/or phosphites. Bicyclic phosphates and phosphites have acute neurotoxinic properties and may cause convulsive seizures in laboratory test animals. Follow all precautionary measures outlined in this Material Safety Data Sheet.

Animal Toxicity Data for Phosphonium, tetrakis(hydroxymethyl)-, sulfate:
Rat Oral LD50 - 245 mg/kg (RTECS)
Rat Inhalation LC50 - 5.5 mg/L (4 Hr)

TARGET ORGANS (29 CFR 1910.1200-APPENDIX A):

MAGNACIDE(R) 535

Caution Code 2-0-0

MSDS: 0826535

5 - SECTION V - HEALTH HAZARDS (continued)

Eye Hazard
Cutaneous Hazard (Skin)
Pulmonary Agent (Lungs)
Gastrointestinal Tract
Hepatotoxin (Liver)

6 - SECTION VI - EMERGENCY & FIRST AID PROCEDURES

EYE CONTACT: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. If irritation or adverse symptoms develop, seek medical attention.
INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.
SKIN CONTACT: Remove all contaminated clothing, flush skin with water for 10 minutes. Afterwards, wash the affected area with soap and water and then rinse.
INGESTION: Do not induce vomiting. Seek medical attention immediately.

7 - SECTION VII - PROTECTIVE EQUIPMENT RECOMMENDATIONS

VENTILATION: The use of mechanical ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperatures, or is agitated. Where engineering controls are not feasible, assure use is in an area where there is natural air movement.

Under normal operating conditions, no excursions above the regulated (recommended) exposure levels should occur. However, if exposed to high temperatures (fire), used at lower atmospheric pressure (high altitudes) or any other physical conditions that may increase the inhalation exposure, respiratory protective equipment, as described below, should be worn. Also, due to individual susceptibility and sensitivity, before respirators are used, a full medical evaluation should be performed per 29 CFR 1910.134(b)(10).

RESPIRATORY	CHEMICAL RESISTANT APPAREL	EYE/FACE
X AS NEEDED:	X AS NEEDED:	X AS NEEDED:
Air Supplied (SCBA)	X Gloves-Neoprene or Butyl Rubber	X Chemical Splash Goggles
X Air Purifying	X Neoprene or Butyl Rubber Body Suit	Full Face Shield
X Full Facepiece	X Neoprene Boots	
Half Facepiece		
X Cartridge or Cannister		
Acid Gas		
X Organic Vapor		
Ammonia		

A thorough review of the job task (job safety analysis) by a competent safety professional should be conducted to determine the appropriate level of protection. See 29 CFR 1910, Subpart I and 29 CFR 1910.133 for further information.

MAGNACIDE(R) 535

Caution Code 2-0-0

ID: 0826535

8 - SECTION VIII - SPILL & LEAK PROCEDURES

Don appropriate protective clothing and respiratory protection prior to entering a spill/leak area. Eliminate ignition sources. Approach area upwind if possible. Shut off leak if it can be done safely. Dike and pump large spills into salvage containers. Soak up residue and small spills with absorbent clay, sand, or dirt and place in salvage containers. If RQ (reportable quantity) is exceeded, report to National Spill Response Office 1-800-424-8802. Also, in some jurisdictions, spills or leaks of any hazardous materials are reportable--consult local lead agencies for further information. Continue to observe precautions.

WASTE DISPOSAL METHOD(S): Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures and processes may change the classification to non-hazardous, or hazardous for reasons other than, or in addition to product characteristics. Dispose of all waste and/or containers in accordance with federal, state and local regulations.

REQUIREMENTS FOR TRANSPORTATION, HANDLING AND STORAGE: Transport, handle and store in accordance with OSHA Regulation 1910.106 and applicable DOT regulations.
Avoid inhalation of vapors or mists. Do not get in eyes, on skin or clothing. Keep container closed when not in use. Wear suitable protection for eyes and skin when handling. Use with adequate ventilation. Avoid contact with oxidizers or strong bases. Store in well-ventilated area. Store in cool, dry area.

Control ignition source; keep away from heat, sparks and open flame. Use properly grounded electrical equipment when working with this product.

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Petrolite, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

By: C.J. Miller Date: 6/18/98 Supercedes: 8/30/96
Regulatory Information Specialist

6/18/98 - Revised Sections II, V

BAKER HUGHES

Baker Petrolite

DEGRADATION OF MAGNACIDE 535 IN SEA WATER

Magnacide 535, T.H.P.S., (Tetrakis hydroxymethyl phosphonium sulfate), degrades rapidly in aerated sea water, (where no oxygen scavenger is used in conjunction with the Magnacide 535). If oxygen scavenger is used in the initial injection, the life is extended. The half life of this product can best explained in the following table. The last figure shown at the end of each column is an approximation of the active ppm of Magnacide 535, 35% T.H.P.S., that is in solution in the hydrostatic test water at the end of the indicated days shown, for both aerated and anaerobic systems. The second column in each system represents a 100% active T.H.P.S.

Application: 500 ppm initially

Aerated seawater degradation			Anaerobic system (oxygen free) degradation		
days	ppm (100%)	ppm (35%)	days	ppm (100%)	ppm (35%)
6	250	87.5	40	250	87.5
12	125	43.7	80	125	43.7
18	62.5	21.8	120	62.5	21.8

NEUTRALIZATION OF MAGNACIDE 535 WITH HYDROGEN PEROXIDE

At discharge, Magnacide 535 can be instantaneously neutralized with 3% hydrogen peroxide applied at a ratio of 17 ppm (concentrated), peroxide to every 100 ppm of active Magnacide 535. To insure safety of handling, only a 3% solution should be used. For a 3% solution, it would take the following concentration.

(Calculation)

100/3 = 33.3% dilution rate or 33.3 x 17 ppm = 567 ppm of 3% peroxide for every 100 ppm of active Magnacide in solution.

Lamotte test kits are available to monitor the amount of dissolved Magnacide 535 in the discharge water. This kit is relatively simple to use.

Product Data

Baker Petrolite

MAGNACIDE® 535

Biocide

DESCRIPTION

MAGNACIDE® 535 biocide is a broad spectrum biocide, particularly effective against sulfate reducing bacteria (SRB), which can be used in both acid and alkaline conditions. MAGNACIDE 535 contains a new generation active ingredient which has many advantages over traditional industrial biocides, and has been patented worldwide for use in water treatment applications. This product will control bacteria in water floods, oil and gas pipelines, drilling muds, packer fluids, and completion and workover fluids. MAGNACIDE 535 has an unusually good toxicity profile for an industrial biocide and has been shown to be readily biodegradable. It can also be easily deactivated under controlled conditions. These properties result in safer handling and reduced environmental impact, two important factors to consider in selecting a biocide.

APPLICATION

MAGNACIDE 535 biocide is recommended for use in controlling sulfate-reducing bacteria and general aerobic bacteria, including microorganisms that contribute to biofilm formation in oilfield recovery, processing and distribution applications and supporting systems. This includes injection water, water holding tanks, disposal well water, recirculating water handling systems and pipelines. MAGNACIDE 535 is also effective for use in controlling microbial growth in fluids used for drilling and stimulation of oil wells. A Baker Petrolite sales representative will make specific recommendations for your system.

Water Floods: MAGNACIDE 535 should be added to a water flood system at a point where uniform mixing will occur.
Initial Treatment: For a noticeably fouled system, add 200-750 ppm MAGNACIDE 535. When added to a flowing system, slug dose for 2-6 hours based on flow rates. Repeat as necessary until control is achieved.
Subsequent Treatment: Once control has been achieved, add 30-120 ppm MAGNACIDE 535 weekly or as needed to maintain control. When added to a flowing system, slug dose for 2-6 hours based on flow rates.
Continuous Treatment: MAGNACIDE 535 can be dosed continuously at a level of 30-143 ppm.

Oil and Gas Pipelines: MAGNACIDE 535 should be added at a point in the pipeline where uniform mixing will occur.
Slug Dosing: Follow instructions for water flood treatment.
Continuous Dosing: MAGNACIDE 535 can be dosed continuously at a level of 30-215 ppm.

Drilling Muds, Packer Fluids, Completion and Workover Fluids: MAGNACIDE 535 should be added to these fluids at a point where uniform mixing will occur. Add 70-3000 ppm MAGNACIDE 535 to a freshly prepared fluid depending on severity of contamination.

TYPICAL PROPERTIES

Form	Clear colorless liquid
Specific Weight @ 25°C	9.71 lbs/US gal
Flash Point	Non-flammable
Freeze Point	28°F
pH	3.24
Solubility	
Sea water	miscible
Fresh water:	miscible
Produced water:	miscible

(continued)

Product Data

Baker Petrolite

(Magnacide 535 Biocide, continued)

FEATURES AND BENEFITS

Feature:
- Not effected by total dissolved solids and high brine composition

Benefit:
- Can be used in a wide range of brines

Feature:
Rapidly biodegradable

Benefit:
- Discharge permits usually granted

Feature:
Will not react with H_2S

Benefit:
- Can be used in sour water

Feature:
Effective against sulfate reducing bacteria at low concentrations

Benefit:
- Reduces microbially influenced corrosion and biogenic H_2S production

Feature:
- Corrosion inhibiting film forming amine

Benefit:
- Provides enhanced corrosion protection

Feature:
- Reservoir compatible

Benefit:
- Can be applied by squeeze application

Feature:
- Compatible with polymers

Benefit:
- Can be used to preserve EOR polymers, well stimulation and drilling fluids

Feature:
- Effective against acid producing bacteria (APB)

Benefit:
- Reduces microbially influenced corrosion

MATERIAL COMPATIBILITY

Suitable:

Metals:	stainless steel, aluminum
Plastics:	PVC, nylon, PTFE polyethylene, polypropylene, polyurethane
Elastomers:	silicon rubber, VITON, nitrile rubber , natural rubber.

Not Suitable:

Metals:	copper, brass, mild steel, cast iron, zinc
Plastics:	
Elastomers:	

SAFETY AND HANDLING

Before handling, storage or use, see the Material Safety Data Sheet (MSDS) for details.

Baker Petrolite 24 Hour Emergency Hotline:
1-800-424-9300 (CHEMTREC) U.S.A.
1-613-996-6666 (CANUTEC) Canada
Baker Petrolite Customer Care Hotline:
1-800-872-1916 (8 a.m. to 5 p.m. CST)

MATERIAL SAFETY DATA SHEET

Date-Issued: 11/14/1995

MSDS Ref. No: PSMSD-30E

Date-Revised: 08/22/1997

Revision No: 1

Tolcide PS75

ALBRIGHT & WILSON

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Tolcide PS75
GENERAL USE: Water Treatment
PRODUCT CODE: 30E
PRODUCT FORMULATION NAME: Phosphonium, tetrakis(hydroxymethyl)-, sulfate
CHEMICAL FAMILY: Phosphonium sulfates
GENERIC NAME: Tetrakishydroxymethyl phosphonium Sulfate, THPS

MANUFACTURER

Albright & Wilson Americas Inc.
Phosphorus Derivatives & Acrylics
P.O. Box 4439
Glen Allen, VA 23058-4439

Contact: Product Stewardship Department

Product Stewardship: (804) 968-6384

Transportation: (804) 968-6388

Customer Service: (804) 968-6300

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (800) 424-9300

Canutec (613) 996-6666

Emergency Phone (843) 554-1229

COMMENTS: To the best of our knowledge, this Material Safety Data Sheet conforms to the requirements of US OSHA 29 CFR 1910.1200, 91/155/EEC and Canadian Hazardous Products Act.

EPA REG. NO.: 33677-3

2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS#	EINECS #
Phosphonium, tetrakis(hydroxymethyl)-, sulfate	~75	55566-30-8	259-709-0

EEC LABEL SYMBOL AND CLASSIFICATION

R 22: Harmful if swallowed.
R 41: Risk of serious danger to eyes.
R 43: May cause sensitization by skin contact.
EEC Harmful - "Xn"

COMMENTS:

Product composition ranges shown are typical values for health, safety and environmental use and are not intended as specifications.

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3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Clear and colorless organic liquid with characteristic odor.

IMMEDIATE CONCERNS: DANGER! Causes eye damage. May be harmful if swallowed.

POTENTIAL HEALTH EFFECTS

EYES: Expected to cause significant irritation to the eyes.

SKIN: Not expected to cause significant irritation to the skin.

INGESTION: Expected to cause significant irritation to the digestive tract.

INHALATION: Expected to cause significant irritation to the lungs, upper respiratory tract, and nose.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Redness and possible burning and tearing of the eyes.

SKIN: Redness and/or itching of the skin

INGESTION: Possible nausea and/or vomiting.

INHALATION: Coughing, burning, tightness of chest and/or shortness of breath.

ACUTE TOXICITY:

Not expected to cause significant adverse effects if absorbed through the skin.
May cause significant adverse effects if ingested.
Not expected to cause significant adverse effects if mist or vapor is inhaled.

CARCINOGENICITY:

Not Listed by NTP
Not listed by IARC
Not listed by OSHA

MUTAGENICITY:

This product was tested to be negative in two laboratory test tube studies and positive in another.

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS: Not classified

TERATOGENIC EFFECTS: Not classified

MEDICAL CONDITIONS AGGRAVATED: Respiratory and liver diseases may be aggravated by exposure.

TARGET ORGAN STATEMENT: May cause gastrointestinal tract,liver and respiratory tract effects based on animal data.

SENSITIZATION: This material is expected to cause sensitization of the skin.

COMMENTS: For detailed toxicological information see Section 11.

---

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for two to three minutes. Remove any contact lenses and continue flushing for 15 minutes. Get immediate medical attention.

SKIN: Remove contaminated clothing including shoes and wash skin with plenty of soap and water. If irritation occurs, seek medical advice. Wash contaminated clothing and shoes before reuse.

INGESTION: Wash out mouth with water and keep at rest. Seek immediate medical

attention.

INHALATION: Remove from further exposure. Keep warm and at rest. If cough or other symptoms develop, seek medical attention.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: Not Available

FLAMMABLE LIMITS: Not Available

AUTOIGNITION TEMPERATURE: Not Available

FLAMMABLE CLASS: Nonflammable

FLAME PROPAGATION OR BURNING RATE OF SOLIDS: Not Applicable

GENERAL HAZARD: Evacuate personnel downwind of fire to avoid inhalation of irritating and/or harmful fumes and smoke.

EXTINGUISHING MEDIA: Chemical type foam, CO2 (Carbon Dioxide), Dry Chemical, Water Fog

HAZARDOUS COMBUSTION PRODUCTS: Oxides of carbon, phosphorus and sulfur

FIRE FIGHTING PROCEDURES: This product is a nonflammable substance. However, hazardous decomposition and combustion products may be formed in a fire situation. Cool exposed containers with water spray to prevent overheating.

FIRE FIGHTING EQUIPMENT: Respiratory and eye protection are required for fire fighting personnel. Full protective equipment (Bunker Gear) and self contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of a SCBA may not be required.

SENSITIVE TO STATIC DISCHARGE: Not Available

SENSITIVITY TO IMPACT: Not Available

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL:

Construct temporary dikes of dirt, sand, or any appropriate readily available material to prevent spreading of the material.

Wearing the appropriate personal protective equipment designated in Section 8, move the leaking container to a containment area or rotate the container so that the opening is above the liquid level.

Absorb on diatomaceous earth or equivalent inert material. Shovel up and dispose of at an appropriate waste disposal facility according to current applicable laws and regulations, and product characteristics at time of disposal.

LARGE SPILL:

Construct temporary dikes of dirt, sand, or any appropriate readily available material to prevent spreading of the material.

Wearing the appropriate personal protective equipment designated in Section 8, close or cap valves and/or block or plug hole in leaking container and transfer to another container.

Contain material as described above and call the local fire or police department for immediate emergency assistance.

ENVIRONMENTAL PRECAUTIONS

WATER SPILL: Use appropriate containment to avoid runoff or release to sewer or waterways.

LAND SPILL: Use appropriate containment to avoid runoff or release to ground.

GENERAL PROCEDURES: Remove containers of strong oxidizers and strong bases from release area.

RELEASE NOTES: If spill could potentially enter any waterway, including intermittent dry creeks, contact the local authorities. If in the U.S., contact the US COAST GUARD NATIONAL RESPONSE CENTER toll free number 800-424-8802.

In case of accident or road spill notify:
CHEMTREC in USA at 800-424-9300
CANUTEC in Canada at 613-996-6666
CHEMTREC, other countries, at (International code)+1 703 527 3887

COMMENTS:

See Section 13 for disposal information and Section 15 for regulatory requirements.
Large and small spills may have a broad definition depending on the user's handling system. Therefore, the spill category must be defined at the point of release by technically qualified personnel.

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7. HANDLING AND STORAGE

HANDLING:

Use appropriate personal protective equipment as specified in Section 8. Handle in a well ventilated area.

Handle and use in a manner consistent with good industrial/manufacturing techniques and practices.

STORAGE:

Store in unopened containers under cool and dry conditions.

Do not store with, or close to oxidizers and bases.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		Supplier OEL	
		ppm	mg/m³	ppm	mg/m³	ppm	mg/m³
Phosphonium, tetrakis(hydroxymethyl)-, sulfate	TWA	NL[1]	NL	NL	NL	NL	3
	STEL	NL	NL	NL	NL	NL	NL

OSHA TABLE COMMENTS:

1. NL=Not Listed

ENGINEERING CONTROLS: Adequate ventilation is normally required when handling or using this material.

If vapors, or mists are generated, provide local exhaust ventilation to prevent airborne exposure.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear safety glasses with side shields or goggles when handling this material.

SKIN: To prevent any contact, wear impervious protective clothing such as neoprene or butyl rubber gloves, apron, boots or whole bodysuit, as appropriate.

RESPIRATORY: Always wear NIOSH approved respiratory protective equipment when there may be potential for airborne exposure.

WORK HYGIENIC PRACTICES: Facilities storing or using this material should be equipped with an eyewash facility and a safety shower.
Good personal hygiene practices should always be followed.

COMMENTS: No PEL's, TLV's or OEL's for this product or it's ingredients are listed in the current issue of ACGIH's Guide to Occupational Exposure Values nor have they been determined by the manufacturer.

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9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Characteristic

APPEARANCE: Clear

COLOR: Colorless

pH: 3.2

VAPOR PRESSURE: Not Available

VAPOR DENSITY: Not Available

BOILING POINT: Not Available

FREEZING POINT: - 43°C (- 45°F)

MELTING POINT: Not Available

SOLUBILITY IN WATER: Miscible

EVAPORATION RATE: Not Available

DENSITY: 1.37 g/cc at 20°C (68°F)

SPECIFIC GRAVITY: 1.37 @ 15°C/4°C

VISCOSITY: 31Centistokes at 25°C (77°F)

MOLECULAR FORMULA: $2(C_4H_{12}O_4P).O_4S$

MOLECULAR WEIGHT: 406.3 g/gmol

COEFF. OIL/WATER: Not Available

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10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

CONDITIONS TO AVOID: Heat, temperatures above 160°C.

STABILITY: The product is stable under normal ambient conditions of temperature and pressure.

POLYMERIZATION: Will not occur

HAZARDOUS DECOMPOSITION PRODUCTS: Phosphine, oxides of phosphorus, sulfur and carbon.

INCOMPATIBLE MATERIALS: Strong Oxidizers
Strong bases

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11. TOXICOLOGICAL INFORMATION

ACUTE

DERMAL LD_{50}: 2000 mg/kg (rat)

ORAL LD_{50}: 575 mg/kg (rat)

INHALATION LC_{50}: 22 mg/l (1 hour)

EYE EFFECTS: This material is expected to cause significant irritation to the eyes.

SKIN EFFECTS: This material is not expected to cause significant irritation to the skin.

SENSITIZATION: This material is a Grade IV - Strong Skin Sensitizer
Guinea pig maximization study (Tolcide PS75): 14/20 positive.

TARGET ORGANS: Eyes
Skin
Gastrointestinal tract
Respiratory system
Liver

CARCINOGENICITY:

Listed by IARC - No

Listed by NTP - No
In a two year study(NTP 1987) rats and mice dosed with THPS showed no signs of cancer attributable to the treatment.

Listed by OSHA - No

MUTAGENICITY: Negative in the Ames Test.
Clastogenic in an invitro assay for chromosomal abberations in Chinese Hamster Ovary cells.
Negative in cultured rat hepatocytes unscheduled DNA synthesis.

REPRODUCTIVE EFFECTS: This material is not a reproductive toxin, at low dose levels of 6 or 18 mg/kg/day for rabbits and 15 or 30 mg/kg/day for rats. At a high dose level of 60 mg/kg/day, both species showed maternal toxicity.

TERATOGENIC EFFECTS: This material is not a teratogen, at low dose levels of 6 or 18 mg/kg/day for rabbits and 15 or 30 mg/kg/day for rats. At a high dose level of 60 mg/kg/day, both species showed fetal toxicity.

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12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: Not expected to cause significant adverse environmental impact if material reaches waterways.

ECOTOXICOLOGICAL INFORMATION: 96 hr LC50 (Trout) = 119 mg/L; (Bluegill) = 93 mg/L
48 hr LC50 (Daphnia magna) = 19.4 mg/L

DISTRIBUTION: Not Available

CHEMICAL FATE INFORMATION: The material is readily biodegradable.

GENERAL COMMENTS: THPS has been shown to degrade rapidly once diluted to sub ppm concentrations forming trishydroxymethyl phosphine oxide which is classified as non-toxic.

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13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of waste at an appropriate waste disposal facility according to current applicable laws and regulations.

FOR LARGE SPILLS: Contain material and call local authorities for emergency assistance. In consultation with the appropriate authorities, determine the disposal method or contact Albright & Wilson Americas.

PRODUCT DISPOSAL: Dispose of at a supervised incineration facility or an appropriate waste disposal facility according to current applicable laws and regulations

and product characteristics at time of disposal.

EMPTY CONTAINER: Triple rinse (or equivalent) all containers and offer for recycling or reconditiong, or puncture and dispose of in a sanitary landfill or other procedures approved by
state and local authorities.

GENERAL COMMENTS: Refer to Section 6, Accidental Release Measures for additional information.

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14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Not restricted by DOT

TECHNICAL NAME: Phosphonium, tetrakis (hydroxymethyl)-, sulfate

LABEL: Use Product Identifier, "Trade Name", with technical name below.

CANADA TRANSPORT OF DANGEROUS GOODS

PROPER SHIPPING NAME: Not restricted

LABEL: Use Product Identifier, "Trade Name", with technical name below.

AIR (ICAO/IATA)

PROPER SHIPPING NAME: Not restricted

LABEL: Use Product Identifier, "Trade Name", with technical name below.

VESSEL (IMO/IMDG)

PROPER SHIPPING NAME: Not restricted

LABEL: Use Product Identifier, "Trade Name", with technical name below.

EUROPEAN TRANSPORTATION:

ADR/RID HAZARD CLASSIFICATION: Not Regulated

U.S. CUSTOMS HARMONIZATION NUMBER: 2931.00.90.30

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15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES:

FIRE: NO **PRESSURE GENERATING:** NO **REACTIVITY:** NO **ACUTE:** YES **CHRONIC:** NO

313 REPORTABLE INGREDIENTS: Not Applicable

TITLE III NOTES: Not Applicable

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA RQ: Not Applicable

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: All intentional ingredients are listed on the TSCA Inventory.

NATIONAL RESPONSE CENTER: U.S. Coast Guard National Center telephone # 1-800-424-8802

CANADA

WHMIS HAZARD SYMBOL AND CLASSIFICATION

Class D, Division 2, Subdivision B: Toxic Material
May cause eye irritation.
WHMIS Toxic

Class D, Division 2, Subdivision B: Toxic Material
Skin Sensitizer
WHMIS Toxic

WHMIS (WORKER HAZARDOUS MATERIALS INFORMATION SYSTEM): This product is WHMIS controlled.

CANADA INGREDIENT DISCLOSURE LIST: This product does contain ingredient(s) on the "Ingredient Disclosure List".

CANADIAN ENVIRONMENTAL PROTECTION ACT: All intentional ingredients are listed on the DSL (Domestic Substance List).

EUROPEAN COMMUNITY

EEC LABEL SYMBOL AND CLASSIFICATION

R 22: Harmful if swallowed.
R 41: Risk of serious danger to eyes.
R 43: May cause sensitization by skin contact.
S 23: Do not breathe vapor.
S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36, S 37, S 39: Wear suitable protective clothing, gloves and eye/face protection.
EEC Harmful - "Xn"

EUROPEAN COMMUNITY REGULATORY: All intentional ingredients are listed on the European's EINECS Inventory.

MEXICO

This product is considered to be an irritant according to Mexican Standard, Instruction No. 9, ANNEX 1.

STATES WITH SPECIAL REQUIREMENTS

Formaldehyde Pennsylvania:Contains material on Pennsylvania Special Hazardous Substance List present at >= 0.01%
Rhode Island:Contains material present on Rhode Island Hazardous Substance List at >=1% and 0.01% for carcinogens, mutagens and teratogens.
California Proposition 65:Warning: This product contains a chemical known to the state of California to cause cancer.
Massachusetts:Contains material that is present on Massachusetts Extraordinarily Hazardous Substance List at >= 1 ppm.

REGULATIONS

LOCAL REGULATIONS: Not Available

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16. OTHER INFORMATION

REASON FOR ISSUE: New format with additional information.

APPROVED BY: William T. Stewart **TITLE:** Product Stewardship Manager

INFORMATION CONTACT: Product Stewardship Analyst

REVISION SUMMARY

This MSDS revision number was reset to #1 and replaces the June 04, 1997 issue.

NFPA CODES

FIRE: 0 **HEALTH:** 2 **REACTIVITY:** 1

HMIS CODES

FIRE: 0 **HEALTH:** 2 **REACTIVITY:** 1 **PROTECTION:** D

MANUFACTURER SUPPLEMENTAL NOTES:

HAZARD WARNING!This product belongs to a chemical family that HAS BEEN TESTED in combination with Trimethylolpropane , Trimethylolpropane derived products or their corresponding Trimethylolpropane homologs for toxicity of the thermal decomposition products in the absence of flame. Products in this chemical family PRODUCED NO SIGNIFICANT ADVERSE HEALTH EFFECTS in laboratory animals. However, there is a possibility that this thermal decomposition may produce bicyclic phosphates and/or phosphites in combination with certain other phosphorus compounds. Bicyclic phosphates and phosphites have acute neurotoxic properties and may cause convulsive seizures in laboratory test animals. Follow all precautionary measures outlined in this Material Safety Data Sheet and/or contact Albright & Wilson Americas.

DATA SOURCES:

Inhalation LC50(rat) calculation based on LC50 = 5.5 mg/L 4hr. data from Albright & Wilson UK Limited MSDS. (Study conducted on Tolcide PS75)
Toxicological and ecological data based on Albright & Wilson UK Limited internal study reports.
Product Health Hazard Review by Consultant Toxicologist, Dr. R. V. Blanke

MANUFACTURER DISCLAIMER: Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

ZINC BROMIDE

PROFILE #7

MATERIAL SAFETY DATA SHEET
19.2 lb/gal ZINC BROMIDE/CALCIUM BROMIDE BRINE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME:	19.2 lb/gal ZINC BROMIDE/CALCIUM BROMIDE BRINE
UN/NA (PIN) No.:	1760
APPLICATIONS:	Oil well completion fluid.
EMERGENCY TELEPHONE:	281-561-1600
SUPPLIER:	Supplied by a Business Unit of M-I L.L.C. P.O. Box 42842, Houston, Texas 77242-2842 See cover sheet for local supplier.
TELEPHONE:	281-561-1509
FAX:	281-561-7240
CONTACT PERSON:	Sam Hoskin

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME:	CAS No.:	CONTENTS :	EPA RQ:	TPQ:
Zinc bromide	7699-45-8	54.5 %	1 000 lbs	
Water	7732-18-5	26 %		
Calcium bromide	7789-41-5	19.5 %		

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

DANGER! CAUSES EYE, SKIN AND RESPIRATORY TRACT BURNS. Do not get in eyes or on skin or clothing. Avoid breathing airborne product.. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

This product is a/an Clear, colorless to amber liquid Dike and contain spills. Keep out of sewers and waterways.

ACUTE EFFECTS:

INHALATION: Irritating to the respiratory tract if inhaled.

INGESTION: May cause burns in mucous membranes, throat, oesophagus and stomach. May cause gastric distress, nausea and vomiting if ingested.

SKIN: Corrosive to skin.

EYES: Corrosive to eyes.

CHRONIC EFFECTS:

CARCINOGENICITY:

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

ROUTE OF ENTRY:
Inhalation. Skin and/or eye contact.

TARGET ORGANS:
Respiratory system, lungs. Skin. Eyes.

4. FIRST AID MEASURES

GENERAL: Persons seeking medical attention should carry a copy of this MSDS with them.

INHALATION: Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.

INGESTION: Drink a couple of glasses water or milk. Do NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. Get medical attention.

SKIN: Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

EYES: Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5. FIRE FIGHTING MEASURES

AUTO IGNITION TEMP. (°F):	N/D
FLAMMABILITY LIMIT - LOWER(%):	N/D
FLAMMABILITY LIMIT - UPPER(%):	N/D

EXTINGUISHING MEDIA:
Use extinguishing media appropriate for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES:
Normal fire fighting techniques may be used.

UNUSUAL FIRE & EXPLOSION HAZARDS:
No unusual fire or explosion hazards noted.

HAZARDOUS COMBUSTION PRODUCTS:
Fire or high temperatures create: Bromine. and Bromides.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:
Wear proper personal protective equipment (see MSDS Section 8).

SPILL CLEAN-UP PROCEDURES:
Absorb in vermiculite, dry sand or earth and place into containers. Rinse area with water. Dike far ahead of larger spills for later disposal. Do not contaminate drainage or waterways.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS:

Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place.

STORAGE PRECAUTIONS:

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

		OSHA PEL:		ACGIH TLV:		OTHER:		
INGREDIENT NAME:	**CAS No.:**	**TWA:**	**STEL:**	**TWA:**	**STEL:**	**TWA:**	**STEL:**	**UNITS:**
Zinc bromide	7699-45-8	5		3				mg/m3 resp.dust
Calcium bromide	7789-41-5	5		3				mg/m3 resp.dust

INGREDIENT COMMENTS:

Exposure limits are for Particulates Not Otherwise Classified (PNOC).

PROTECTIVE EQUIPMENT:

ENGINEERING CONTROLS:

Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

VENTILATION: Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.

RESPIRATORS: If exposed to particulates/aerosols:
Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.
If exposed to organic vapors:
Use a NIOSH/MSHA-approved organic vapor respirator. CCROV: CCR with organic vapor cartridge.

PROTECTIVE GLOVES:

Chemical resistant gloves required for prolonged or repeated contact. Use protective gloves made of: Impermeable material. Such as, Neoprene, nitrile, polyethylene or PVC.

EYE PROTECTION:

Wear chemical safety goggles where eye exposure is reasonably probable.

PROTECTIVE CLOTHING:

Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES:

Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE:	Liquid.
COLOR:	Colorless. to Amber.
ODOR:	Odorless or no characteristic odor.
SOLUBILITY DESCRIPTION:	Soluble in water.
BOILING POINT (°F, interval):	275 PRESSURE: 760mmHg

DENSITY/SPECIFIC GRAVITY (g/ml):	2.3	TEMPERATURE (°F): 68
BULK DENSITY:	19.2 lb/gal	
VAPOR DENSITY (air=1):	N/D	
VAPOR PRESSURE:	17.5 mmHg	TEMPERATURE (°F): 68
EVAPORATION RATE:	N/D	REFERENCE:
pH-VALUE, CONC. SOLUTION:	1-2	

10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID:
Not relevant.

HAZARDOUS POLYMERIZATION:
Will not polymerize.

POLYMERIZATION DESCRIPTION:
Not relevant.

MATERIALS TO AVOID:
Strong oxidizing agents. Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS:
No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:
No toxicological data is available for this product. Toxicological data for major component(s):

Component:	**Calcium bromide**
TOXIC DOSE - LD 50:	4100 mg/kg (oral rat)

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:
No ecological information is available for this product.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT:
This product, should it become a waste, is hazardous by U.S. RCRA criteria.

Empty containers retain residues. All labeled precautions must be observed.

DISPOSAL METHODS:
Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

LABEL FOR CONVEYANCE:

PROPER SHIPPING DESCRIPTION II:	Corrosive liquids, n.o.s., 8, UN 1760, PG III, (contains zinc bromide and calcium bromide)
PRODUCT RQ:	96 gallons (1835 pounds)
EMERGENCY RESPONSE GUIDE No.:	154
U.S. DOT:	
UN/NA No.:	1760
U.S. DOT HAZARD LABEL:	CORROSIVE (Black/white diam.) DOT17
U.S. DOT CLASS:	Class 8 - Corrosive Material
U.S. DOT PACKING GROUP:	III
U.S. DOT PACKAGING INSTRUCTIONS:	49 CFR 173.154, 173.203, 173.241
CANADIAN TRANSPORT:	
TDGR CLASS:	Class 8 - Corrosives
TDGR LABEL:	Corrosive
SEA TRANSPORT:	
UN No. SEA:	1760
IMDG CLASS:	Class 8 - Corrosives
IMDG PAGE No.:	8147
IMDG PACK GR.:	III
EmS No.:	8-15
MFAG TABLE No.:	760, subsection 4.3 applies
AIR TRANSPORT:	
UN No., AIR:	1760
ICAO CLASS:	Class - 8 Corrosives
AIR PACK GR.:	III

15. REGULATORY INFORMATION

REGULATORY STATUS OF INGREDIENTS:

NAME:	CAS No:	TSCA:	CERCLA:	SARA 302:	SARA 313:	DSL(CAN):
Zinc bromide	7699-45-8	Yes	Yes	No	No	Yes
Water	7732-18-5	Yes	No	No	No	Yes
Calcium bromide	7789-41-5	Yes	No	No	No	Yes

US FEDERAL REGULATIONS:

WASTE CLASSIFICATION: A hazardous waste by U.S. RCRA criteria.

REGULATORY STATUS:

This Product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.
SARA 311 Categories:
1: Immediate (Acute) Health Effects.

The components of this product are listed on or are exempt from the following international chemical registries:
TSCA (U.S.)
DSL (Canada)

STATE REGULATIONS:
STATE REGULATORY STATUS:

This product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):.

Pennsylvania Right-to-Know.
New Jersey Right-to-Know.

PROPOSITION 65: This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

CANADIAN REGULATIONS:
LABELS FOR SUPPLY:

REGULATORY STATUS:

This Material Safety Data Sheet has been prepared in compilance with the Controled Product Regulations.

Canadian WHMIS Classification:
E - Corrosive Material

16. OTHER INFORMATION

NPCA HMIS HAZARD INDEX: 3 Serious Hazard
FLAMMABILITY: 0 Minimal Hazard
REACTIVITY: 0 Minimal Hazard
NPCA HMIS PERS. PROTECT. INDEX: J - Splash Goggles, Gloves, Synthetic Apron, Dust and Vapor Respirator.

USER NOTES: N/A = Not applicable N/D = Not determined

INFORMATION SOURCES:

OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants.
ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition).
Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997).

Product information provided by the commercial vendor(s).

PREPARED BY: Sam Hoskin

REVISION No./Repl. MSDS of: 1 / October 8, 1996

MSDS STATUS: Approved.

DATE: July 30, 1998

DISCLAIMER:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditiions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

Zinc Bromide

MSDS Number: Z1710 --- *Effective Date: 12/08/96*

1. Product Identification

Synonyms: Zinc Dibromide
CAS No.: 7699-45-8
Molecular Weight: 225.18
Chemical Formula: ZnBr2
Product Codes: 4308

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Zinc Bromide	7699-45-8	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! HARMFUL IF SWALLOWED. CAUSES BURNS.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight
Flammability Rating: 0 - None
Reactivity Rating: 0 - None
Contact Rating: 2 - Moderate
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: White (Corrosive)

Potential Health Effects

Inhalation:
Irritation of nose and throat.

Ingestion:
Irritation and burns to mouth and stomach.

Skin Contact:
Irritation.

Eye Contact:
Irritation.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
No information found.

---

4. First Aid Measures

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Prompt action is essential.

Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes.

Eye Contact:
In case of eye contact, immediately flush with plenty of water for at least 15 minutes.

---

5. Fire Fighting Measures

Fire:
Not expected to be a fire hazard.

Explosion:
No information found.

Fire Extinguishing Media:
Use extinguishing media appropriate for surrounding fire.

Special Information:

Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode.

6. Accidental Release Measures

Wear self-contained breathing apparatus and full protective clothing. With clean shovel, carefully place material into clean, dry container and cover; remove from area. Flush spill area with water.

7. Handling and Storage

Keep container tightly closed. Suitable for any general chemical storage area. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
None established.

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):
For conditions of use where exposure to the substance is apparent, consult an industrial hygienist. For emergencies, or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Granular powder.

Odor:

Odorless.

Solubility:
Complete (100%)

Specific Gravity:
4.22

pH:
No information found.

% Volatiles by volume @ 21C (70F):
0

Boiling Point:
697C (1287F)

Melting Point:
394C (741F)

Vapor Density (Air=1):
7.8

Vapor Pressure (mm Hg):
Not applicable.

Evaporation Rate (BuAc=1):
No information found.

---

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
Hydrogen bromide.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
No information found.

Conditions to Avoid:
No information found.

---

11. Toxicological Information

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category

Zinc Bromide (7699-45-8)	No	No	None

12. Ecological Information

Environmental Fate:
No information found.

Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (ZINC BROMIDE)
Hazard Class: 9
UN/NA: UN3077
Packing Group: III
Information reported for product/size: 500G

International (Water, I.M.O.)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (ZINC BROMIDE)
Hazard Class: 9
UN/NA: UN3077
Packing Group: III
Information reported for product/size: 500G

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\--------------------------------

Ingredient	TSCA	EC	Japan	Australia
Zinc Bromide (7699-45-8)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\--------------------------------

	--Canada--

Ingredient	Korea	DSL	NDSL	Phil.
Zinc Bromide (7699-45-8)	Yes	Yes	No	Yes

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Zinc Bromide (7699-45-8)	No	No	No	Zinc compoun

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Zinc Bromide (7699-45-8)	1000	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: No (Pure / Solid)

Australian Hazchem Code: No information found.
Poison Schedule: No information found.

WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

16. Other Information

Label Hazard Warning:
DANGER! HARMFUL IF SWALLOWED. CAUSES BURNS.

Label Precautions:
Do not get in eyes, on skin, on clothing. Avoid breathing dust. Keep in tightly closed container. Use with adequate ventilation. Wash thoroughly after handling.

Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Product Use:
Laboratory Reagent.

Revision Information:
Pure. New 16 section MSDS format, all sections have been revised.

Disclaimer:
****
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REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

****

Prepared by: Strategic Services Division
Phone Number: (314) 539-1600 (U.S.A.)

CALCIUM BROMIDE

PROFILE #8

Please reduce your browser font size for better viewing and printing.

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

Calcium Bromide, Dihydrate

MSDS Number: C0310 --- *Effective Date: 12/08/96*

1. Product Identification

Synonyms: None
CAS No.: 7789-41-5
Molecular Weight: 235.92
Chemical Formula: CaBr2.2H2O
Product Codes: E283

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Calcium Bromide	7789-41-5	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

CAUTION! MAY CAUSE IRRITATION.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight
Flammability Rating: 0 - None
Reactivity Rating: 1 - Slight
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT

Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
None identified.

Ingestion:
None identified.

Skin Contact:
Irritation.

Eye Contact:
None identified.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
No information found.

4. First Aid Measures

Inhalation:
If a person breathes in large amounts, move the exposed person to fresh air.

Ingestion:
If large amounts were swallowed, give water to drink and get medical advice.

Skin Contact:
In case of contact, immediately wash skin with plenty of soap and water for at least 15 minutes.

Eye Contact:
In case of eye contact, immediately flush with plenty of water for at least 15 minutes.

5. Fire Fighting Measures

Fire:
Not expected to be a fire hazard.

Explosion:
No information found.

Fire Extinguishing Media:
Use extinguishing media appropriate for surrounding fire.

Special Information:
Firefighters should wear proper protective equipment and self-contained breathing apparatus

with full facepiece operated in positive pressure mode.

6. Accidental Release Measures

Wear suitable protective clothing. Carefully sweep up and remove.

7. Handling and Storage

Keep container tightly closed. Suitable for any general chemical storage area. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
None established.

Ventilation System:
In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.

Personal Respirators (NIOSH Approved):
For conditions of use where exposure to the substance is apparent, consult an industrial hygienist. For emergencies, or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear protective gloves and clean body-covering clothing.

Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Crystals or granules.

Odor:
Odorless.

Solubility:
Complete (100%)

Specific Gravity:

No information found.

pH:
No information found.

% Volatiles by volume @ 21C (70F):
0

Boiling Point:
No information found.

Melting Point:
No information found.

Vapor Density (Air=1):
Not applicable.

Vapor Pressure (mm Hg):
Not applicable.

Evaporation Rate (BuAc=1):
No information found.

---

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
Hydrogen bromide.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
No information found.

Conditions to Avoid:
Air.

---

11. Toxicological Information

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Calcium Bromide (7789-41-5)	No	No	None

---

12. Ecological Information

Environmental Fate:
No information found.

Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\---------------------------------

Ingredient	TSCA	EC	Japan	Australia
Calcium Bromide (7789-41-5)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\---------------------------------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Calcium Bromide (7789-41-5)	Yes	Yes	No	No

--------\Federal, State & International Regulations - Part 1\----------------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Calcium Bromide (7789-41-5)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\----------------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Calcium Bromide (7789-41-5)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: No Chronic: No Fire: No Pressure: No
Reactivity: No (Pure / Solid)

Australian Hazchem Code: No information found.
Poison Schedule: No information found.

WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

16. Other Information

Label Hazard Warning:
CAUTION! MAY CAUSE IRRITATION.

Label Precautions:
During use avoid contact with eyes, skin, clothing. Wash thoroughly after handling. When not in use keep in tightly closed container.

Label First Aid:
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes.

Product Use:
Laboratory Reagent.

Revision Information:
Pure. New 16 section MSDS format, all sections have been revised.

Disclaimer:
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Prepared by: Strategic Services Division
Phone Number: (314) 539-1600 (U.S.A.)

MATERIAL SAFETY DATA SHEET
19.2 lb/gal ZINC BROMIDE/CALCIUM BROMIDE BRINE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME:	19.2 lb/gal ZINC BROMIDE/CALCIUM BROMIDE BRINE
UN/NA (PIN) No.:	1760
APPLICATIONS:	Oil well completion fluid.
EMERGENCY TELEPHONE:	281-561-1600
SUPPLIER:	Supplied by a Business Unit of M-I L.L.C. P.O. Box 42842, Houston, Texas 77242-2842 See cover sheet for local supplier.
TELEPHONE:	281-561-1509
FAX:	281-561-7240
CONTACT PERSON:	Sam Hoskin

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME:	CAS No.:	CONTENTS :	EPA RQ:	TPQ:
Zinc bromide	7699-45-8	54.5 %	1 000 lbs	
Water	7732-18-5	26 %		
Calcium bromide	7789-41-5	19.5 %		

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

DANGER! CAUSES EYE, SKIN AND RESPIRATORY TRACT BURNS. Do not get in eyes or on skin or clothing. Avoid breathing airborne product.. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

This product is a/an Clear, colorless to amber liquid Dike and contain spills. Keep out of sewers and waterways.

ACUTE EFFECTS:

INHALATION: Irritating to the respiratory tract if inhaled.

INGESTION: May cause burns in mucous membranes, throat, oesophagus and stomach. May cause gastric distress, nausea and vomiting if ingested.

SKIN: Corrosive to skin.

EYES: Corrosive to eyes.

CHRONIC EFFECTS:

CARCINOGENICITY:

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

ROUTE OF ENTRY:
Inhalation. Skin and/or eye contact.

TARGET ORGANS:
Respiratory system, lungs. Skin. Eyes.

4. FIRST AID MEASURES

GENERAL: Persons seeking medical attention should carry a copy of this MSDS with them.

INHALATION: Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.

INGESTION: Drink a couple of glasses water or milk. Do NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. Get medical attention.

SKIN: Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

EYES: Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5. FIRE FIGHTING MEASURES

AUTO IGNITION TEMP. (°F):	N/D
FLAMMABILITY LIMIT - LOWER(%):	N/D
FLAMMABILITY LIMIT - UPPER(%):	N/D

EXTINGUISHING MEDIA:
Use extinguishing media appropriate for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES:
Normal fire fighting techniques may be used.

UNUSUAL FIRE & EXPLOSION HAZARDS:
No unusual fire or explosion hazards noted.

HAZARDOUS COMBUSTION PRODUCTS:
Fire or high temperatures create: Bromine. and Bromides.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:
Wear proper personal protective equipment (see MSDS Section 8).

SPILL CLEAN-UP PROCEDURES:
Absorb in vermiculite, dry sand or earth and place into containers. Rinse area with water. Dike far ahead of larger spills for later disposal. Do not contaminate drainage or waterways.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS:

Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place.

STORAGE PRECAUTIONS:

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

		OSHA PEL:		ACGIH TLV:		OTHER:		
INGREDIENT NAME:	**CAS No.:**	**TWA:**	**STEL:**	**TWA:**	**STEL:**	**TWA:**	**STEL:**	**UNITS:**
Zinc bromide	7699-45-8	5		3				mg/m3 resp.dus
Calcium bromide	7789-41-5	5		3				mg/m3 resp.dus

INGREDIENT COMMENTS:

Exposure limits are for Particulates Not Otherwise Classified (PNOC).

PROTECTIVE EQUIPMENT:

ENGINEERING CONTROLS:

Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

VENTILATION: Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.

RESPIRATORS: If exposed to particulates/aerosols:
Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.
If exposed to organic vapors:
Use a NIOSH/MSHA-approved organic vapor respirator. CCROV: CCR with organic vapor cartridge.

PROTECTIVE GLOVES:

Chemical resistant gloves required for prolonged or repeated contact. Use protective gloves made of: Impermeable material. Such as, Neoprene, nitrile, polyethylene or PVC.

EYE PROTECTION:

Wear chemical safety goggles where eye exposure is reasonably probable.

PROTECTIVE CLOTHING:

Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES:

Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE:	Liquid.
COLOR:	Colorless. to Amber.
ODOR:	Odorless or no characteristic odor.
SOLUBILITY DESCRIPTION:	Soluble in water.
BOILING POINT (°F, interval):	275 PRESSURE: 760mmHg

DENSITY/SPECIFIC GRAVITY (g/ml):	2.3	TEMPERATURE (°F): 68
BULK DENSITY:	19.2 lb/gal	
VAPOR DENSITY (air=1):	N/D	
VAPOR PRESSURE:	17.5 mmHg	TEMPERATURE (°F): 68
EVAPORATION RATE:	N/D	REFERENCE:
pH-VALUE, CONC. SOLUTION:	1-2	

10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID:
Not relevant.

HAZARDOUS POLYMERIZATION:
Will not polymerize.

POLYMERIZATION DESCRIPTION:
Not relevant.

MATERIALS TO AVOID:
Strong oxidizing agents. Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS:
No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:
No toxicological data is available for this product. Toxicological data for major component(s):

Component:	**Calcium bromide**
TOXIC DOSE - LD 50:	4100 mg/kg (oral rat)

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:
No ecological information is available for this product.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT:
This product, should it become a waste, is hazardous by U.S. RCRA criteria.

Empty containers retain residues. All labeled precautions must be observed.

DISPOSAL METHODS:
Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

LABEL FOR CONVEYANCE:

PROPER SHIPPING DESCRIPTION II:	Corrosive liquids, n.o.s., 8, UN 1760, PG III, (contains zinc bromide and calcium bromide)
PRODUCT RQ:	96 gallons (1835 pounds)
EMERGENCY RESPONSE GUIDE No.:	154
U.S. DOT:	
UN/NA No.:	1760
U.S. DOT HAZARD LABEL:	CORROSIVE (Black/white diam.) DOT17
U.S. DOT CLASS:	Class 8 - Corrosive Material
U.S. DOT PACKING GROUP:	III
U.S. DOT PACKAGING INSTRUCTIONS:	49 CFR 173.154, 173.203, 173.241
CANADIAN TRANSPORT:	
TDGR CLASS:	Class 8 - Corrosives
TDGR LABEL:	Corrosive
SEA TRANSPORT:	
UN No. SEA:	1760
IMDG CLASS:	Class 8 - Corrosives
IMDG PAGE No.:	8147
IMDG PACK GR.:	III
EmS No.:	8-15
MFAG TABLE No.:	760, subsection 4.3 applies
AIR TRANSPORT:	
UN No., AIR:	1760
ICAO CLASS:	Class - 8 Corrosives
AIR PACK GR.:	III

15. REGULATORY INFORMATION

REGULATORY STATUS OF INGREDIENTS:

NAME:	CAS No:	TSCA:	CERCLA:	SARA 302:	SARA 313:	DSL(CAN):
Zinc bromide	7699-45-8	Yes	Yes	No	No	Yes
Water	7732-18-5	Yes	No	No	No	Yes
Calcium bromide	7789-41-5	Yes	No	No	No	Yes

US FEDERAL REGULATIONS:

WASTE CLASSIFICATION: A hazardous waste by U.S. RCRA criteria.

REGULATORY STATUS:

This Product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.
SARA 311 Categories:
1: Immediate (Acute) Health Effects.

The components of this product are listed on or are exempt from the following international chemical registries:
TSCA (U.S.)
DSL (Canada)

STATE REGULATIONS:
STATE REGULATORY STATUS:

This product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):.

Pennsylvania Right-to-Know.
New Jersey Right-to-Know.

PROPOSITION 65: This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

CANADIAN REGULATIONS:
LABELS FOR SUPPLY:

REGULATORY STATUS:

This Material Safety Data Sheet has been prepared in compilance with the Controled Product Regulations.

Canadian WHMIS Classification:
E - Corrosive Material

16. OTHER INFORMATION

NPCA HMIS HAZARD INDEX:	3 Serious Hazard
FLAMMABILITY:	0 Minimal Hazard
REACTIVITY:	0 Minimal Hazard
NPCA HMIS PERS. PROTECT. INDEX:	J - Splash Goggles, Gloves, Synthetic Apron, Dust and Vapor Respirator.
USER NOTES:	N/A = Not applicable N/D = Not determined
INFORMATION SOURCES:	OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants. ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition). Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997). Product information provided by the commercial vendor(s).
PREPARED BY:	Sam Hoskin

REVISION No./Repl. MSDS of: 1 / October 8, 1996

MSDS STATUS: Approved.

DATE: July 30, 1998

DISCLAIMER:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditiions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

AMMONIUM CHLORIDE

PROFILE #9

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

MALLINCKRODT J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

AMMONIUM CHLORIDE

MSDS Number: A5724 --- ***Effective Date: 11/17/99***

1. Product Identification

Synonyms: Sal ammoniac; Ammonium muriate
CAS No.: 12125-02-9
Molecular Weight: 53.49
Chemical Formula: NH4Cl
Product Codes:
J.T. Baker: 0660, 0666, 0667
Mallinckrodt: 1614, 3355, 3363, 3364, 3384, V481, V550

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Ammonium Chloride	12125-02-9	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. HARMFUL IF SWALLOWED OR INHALED.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight
Flammability Rating: 0 - None
Reactivity Rating: 0 - None

Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.
Ingestion:
Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.
Skin Contact:
Causes irritation to skin. Symptoms include redness, itching, and pain.
Eye Contact:
Causes irritation, redness, and pain.
Chronic Exposure:
No information found.
Aggravation of Pre-existing Conditions:
No information found.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard.
At fire temperatures ammonium chloride begins to corrode metals and may dissociate into ammonia and hydrogen chloride. Mixtures of about 16% to 25% (by volume) ammonia gas in air are flammable.
Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.
Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
Ammonium chloride:
-ACGIH Threshold Limit Value (TLV):
10 mg/m3 (TWA); 20 mg/m3 (STEL) Fume
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
White powder.
Odor:
Odorless.
Solubility:
29.7g/100g water @ 0C (32F)
Specific Gravity:
1.53
pH:
5.5 (1% aq.sol.); 5.1 (3% aq.sol.); 5.0 (10% aq.sol.)
% Volatiles by volume @ 21C (70F):
0
Boiling Point:
520C (968F)
Melting Point:
338C (640F) Sublimes.
Vapor Density (Air=1):
1.9
Vapor Pressure (mm Hg):
1.0 @ 160C (320F)
Evaporation Rate (BuAc=1):
No information found.

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10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Involvement in a fire causes decomposition to form hydrogen chloride and ammonia.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Concentrated acids, strong bases, silver salts, potassium chlorate, ammonium nitrate, bromine trifluoride and iodine heptafluoride. Ammonium chloride reacts explosively with potassium chlorate or bromine trifluoride, and violently with bromide pentafluoride, ammonium compounds, nitrates, and iodine heptafluoride. Explosive nitrogen trichloride may result from reaction of ammonium chloride and hydrogen cyanide.
Conditions to Avoid:
Heat, moisture, incompatibles.

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11. Toxicological Information

Oral rat LD50 : 1650 mg/kg Investigated as a mutagen.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Ammonium Chloride (12125-02-9)	No	No	None

12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\---------------------------------

Ingredient	TSCA	EC	Japan	Australia
Ammonium Chloride (12125-02-9)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\---------------------------------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Ammonium Chloride (12125-02-9)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Ammonium Chloride (12125-02-9)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\----------------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Ammonium Chloride (12125-02-9)	5000	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
Reactivity: No (Pure / Solid)

Australian Hazchem Code: No information found.
Poison Schedule: No information found.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

16. Other Information

NFPA Ratings: Health: **2** Flammability: **0** Reactivity: **0**
Label Hazard Warning:
WARNING! CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. HARMFUL IF SWALLOWED OR INHALED.
Label Precautions:
Avoid contact with eyes, skin and clothing.
Avoid breathing dust.
Wash thoroughly after handling.
Keep container closed.
Use only with adequate ventilation.
Label First Aid:
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In all cases, get medical attention.
Product Use:
Laboratory Reagent.
Revision Information:
No changes.
Disclaimer:
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Prepared by: Strategic Services Division
Phone Number: (314) 539-1600 (U.S.A.)

SODIUM HYDROXIDE

PROFILE #10

BAKER HUGHES INTEQ

2001 Rankin Road
Houston, Texas 77073

MATERIAL SAFETY DATA SHEET

EMERGENCY TELEPHONE: (713) 439-8900
CHEMTREC: 1-800-424-9300

I. MANUFACTURER'S INFORMATION:

Manufacturer: BAKER HUGHES INTEQ
Product Name: **CAUSTIC SODA**
Chemical Name: SODIUM HYDROXIDE
Chemical Description: ALKALINE COMPOUND

HMIS Hazard Rating and Key

Health	3	Minimal	0
Flammability	0	Slight	1
Reactivity	1	Moderate	2
Personal Protection	D	Serious	3
		Severe	4

Proper Shipping Description: SODIUM HYDROXIDE, SOLID
Hazard Class: 8, PG II UN Number: 1823 Hazard Label: Liquid: Corrosive DOT Response Guide: 60
Transportation Note: NA

II. HAZARD IDENTIFICATION:

Hazardous Components:	ACGIH TLV:	OSHA PEL:	%	CAS Number:	Product RQ:
SODIUM HYDROXIDE	2 MG/M3 C	2 MG/M3 C	85-90	1310-73-2	1000 LBS

Hazards Associated with Product Use

	Yes		Yes		Yes		Yes
Combustible Liquid		Flammable Material		Pyrophoric Material		Explosive Material	
Unstable Material		Water Reactive Material	X	Oxidizer		Organic Peroxide	
Corrosive Material	X	Compressed Gas		Irritant	X	Nuisance Particulate	
Skin Hazard	X	Eye Hazard	X	Toxic Agent	X	Highly Toxic Agent	
Sensitizer		Carcinogen		Reproductive Toxin		Blood Toxin	
Nervous System Toxin	X	Lung Toxin		Liver Toxin		Kidney Toxin	

Community Right-to-Know (SARA Title III Section 311-312)

Fire: Sudden Release Of Pressure: Reactivity: X Immediate (Acute): X Delayed (Chronic): X

III. PHYSICAL DATA:

Boiling Point (F):	2530	Vapor Pressure (mmHg):	42 mmHg @ 1000 C	pH:	12.0 (0.1 M)
Melting Point(F):	ND	Vapor Density (Air=1):	NA	Specific Gravity:	2.13
Freezing Point(F):	604	Solubility In Water:	APPRECIABLE	Percent Volatile By Volume (%):	ND
Odor Threshold:	NONE	Appearance And Odor:	WHITE , ODORLESS	Evaporation Rate (_____=1):	ND
Material Is:	PURE SOLID	Coefficient of Water/Oil Distribution:	INSOLUBLE IN OIL		

IV. FIRE & EXPLOSION HAZARD DATA:

Flashpoint (F): NA Auto Ignition Temperature (F): NA Explosive Limit - Lower: NA Upper: NA
Extinguishing Media: Water: X CO2: X Dry Chemical: X Foam: X Fog:

Hazardous Combustion Products:
NONCOMBUSTIBLE. REACTS WITH METALS, FORMS HYDROGEN GAS. REACTS EXOTHERMICALLY WITH WATER.
Fire Fighting Procedures:
WEAR SPECIAL PROTECTIVE CLOTHING AND SELF-CONTAINED BREATHING APPARATUS. EYES NOR SKIN SURFACE SHOULD BE EXPOSED. EXTINGUISH FIRE USING SUITABLE AGENTS FOR SURROUNDING FIRE. USE FLOODING WATER SPRAY TO KEEP FIRE EXPOSED CONTAINERS COOL. APPLY FROM AFAR.
Unusual Fire and Explosion Hazards:
DISSOLVES IN WATER. RELEASING HEAT SUFFICIENT TO IGNITE COMBUSTIBLES. IF MOIST REACTS WITH SOME METALS SUCH AS ALUMINUM, TIN, AND ZINC TO FORM HYDROGEN GAS. REACTS WITH ACIDS, GIVING OFF HEAT.

V. REACTIVITY DATA:

Chemically Stable: Yes: X No: If no, Under Which Conditions? AVOID EXTREME HEAT.

Incompatibility (Materials to Avoid) KEEP AWAY FROM WATER, ACIDS AND METALS.

Hazardous Decomposition or Byproducts: HYDROGEN GAS MAY FORM WITH SOME METALS. ACID REACTIONS GENERATE HEAT MOISTURE CAN GENERATE SUFFICIENT HEAT TO IGNITE COMBUSTIBLES

Hazardous Polymerization May Occur: Will Not Occur: X Conditions to Avoid: NA

ND - Not Determined NA - Not Applicable T - Total Dust R - Respirable Fraction C - Ceiling Limit

VI. HEALTH HAZARD INFORMATION:

Primary Exposure Route:	Skin Contact: X	Skin Absorption:	Eye Contact: X	Inhalation: X		Ingestion:
Product Carcinogenicity -	NTP: NAP	IARC: NAP				

Acute Effects of Overexposure:
EXPOSURES CAUSE SEVERE PAIN, EDEMA, BURNS AND POSSIBLE PERFORATION. INHALATION MAY CAUSE BREATHING DIFFICULTY AND DIZZINESS. EYE CONTACT MAY CAUSE VASCULAR TISSUE DESTRUCTION AND CORNEAL SCARRING. INGESTION MAY CAUSE VOMITING, DIARRHEA AND COLLAPSE.

Chronic Effects of Overexposure:
REPEATED OR PROLONGED EXPOSURE MAY CAUSE INFLAMMATORY, ULCERATIVE RESPIRATORY CHANGES, SEVERE DERMATITIS AND WARTY SKIN GROWTH, PERMANENT VISION IMPAIRMENT OR OPACITY, AND POSSIBLE LONG TERM, RECURRENT ESOPHAGEAL STRICTURE.

VII. EMERGENCY AND FIRST AID INSTRUCTIONS:

Eyes:	FLUSH IMMEDIATELY WITH RUNNING WATER UNDER EYELIDS. INSURE NO CHEMICAL REMAINS. IRRIGATE WITH NORMAL SALINE UNTIL NORMAL pH RETURNS. GET MEDICAL ATTENTION.
Skin:	FLUSH SKIN PROFUSELY WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. FLUSH SKIN UNTIL NO CHEMICAL REMAINS. WASH WITH SOAP AND WATER. FOR BURNS, USE STERILE DRY DRESSING. GET MEDICAL ATTENTION IMMEDIATELY.
Ingestion:	GIVE WATER OR MILK TO DRINK IMMEDIATELY AND ALLOW VOMITING TO OCCUR. IF VOMITING OCCURS, KEEP HEAD BELOW THE HIPS TO HELP PREVENT ASPIRATION. GET MEDICAL ATTENTION.
Inhalation:	REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

VIII. ENVIRONMENTAL PROTECTION PROCEDURES:

Spill Response:
ISOLATE SPILL AREA. KEEP WATER AWAY. ABSORB SMALL LIQUID SPILLS WITH INERT MATERIALS FOR DISPOSAL. SHOVEL DRY SPILLS INTO A DRY CONTAINER AND COVER. DIKE LARGE SPILLS TO PREVENT DISCHARGE. REPORT SPILLS > 100 LBS.
Waste Disposal Method:
WASTE PRODUCT IS HAZARDOUS ACCORDING TO RCRA CRITERIA FOR CORROSIVITY. CONSULT APPROVED HAZARDOUS WASTE HANDLERS FOR LARGE WASTE AMOUNTS. SMALL QUANTITIES MAY BE NEUTRALIZED FOR NONHAZARDOUS DISPOSAL. COMPLY WITH LOCAL, STATE AND FEDERAL REGULATION.
Handling:
DANGER! TOXIC. CORROSIVE. SODIUM HYDROXIDE IS TOXIC AND SEVERE EYE, SKIN AND MUCOUS MEMBRANE IRRITANT. AVOID BREATHING DUST. WASH AFTER HANDLING.
Storage:
STORE IN WELL SEALED CONTAINERS. PROTECT AGAINST PHYSICAL DAMAGE, MOISTURE AND WATER. SEPARATE FROM ACIDS, METALS, EXPLOSIVES, ORGANIC PEROXIDES, IGNITABLE AND OTHER INCOMPATIBLES. DO NOT REUSE EMPTY CONTAINERS BEFORE RECONDITIONING.

IX. OCCUPATIONAL CONTROL MEASURES:

Respiratory Protection:	USE AN APPROVED SUPPLIED AIR, SELF-CONTAINED OR PARTICULATE RESPIRATOR.
Ventilation:	PROVIDE LOCAL EXHAUST VENTILATION TO MEET EXPOSURE LIMITS.
Clothing:	WEAR LONG PROTECTIVE CLOTHING WITH IMPERVIOUS APRON OR COVERALLS
Eyewear:	WEAR SPLASH SPLASH-PROOF OR DUST RESISTANT SAFETY GOGGLES AND A FACE SHIELD.
Gloves:	WEAR BUTYL-RUBBER OR NEOPRENE GAUNTLETS.
Footwear:	WEAR RUBBER OR NEOPRENE.

X. ADDITIONAL INFORMATION:

Prepared By: Jim Rushing Date Prepared: 03/18/94 Supercedes Issue Date: 01/31/90

ND - Not Determined NA - Not Applicable > - Greater Than < - Less Than C- Ceiling Limit

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Rod School Lane
Phillipsburg, NJ 08865

MALLINCKRODT J.T.Baker

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

SODIUM HYDROXIDE

MSDS Number: S4034 --- *Effective Date: 08/20/98*

1. Product Identification

Synonyms: Caustic soda; lye; sodium hydroxide solid; sodium hydrate
CAS No.: 1310-73-2
Molecular Weight: 40.00
Chemical Formula: NaOH
Product Codes:
J.T. Baker: 3718, 3721, 3722, 3723, 3728, 3734, 3736, 5045, 5565
Mallinckrodt: 7001, 7680, 7708, 7712, 7772, 7798

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Sodium Hydroxide	1310-73-2	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

POISON! DANGER! CORROSIVE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. CAUSES BURNS TO ANY AREA OF CONTACT. REACTS WITH WATER, ACIDS AND OTHER MATERIALS.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Poison)
Flammability Rating: 0 - None
Reactivity Rating: 2 - Moderate
Contact Rating: 4 - Extreme (Corrosive)
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES
Storage Color Code: White Stripe (Store Separately)

Potential Health Effects

Inhalation:
Severe irritant. Effects from inhalation of dust or mist vary from mild irritation to serious damage of the upper respiratory tract, depending on severity of exposure. Symptoms may include sneezing, sore throat or runny nose. Severe pneumonitis may occur.
Ingestion:
Corrosive! Swallowing may cause severe burns of mouth, throat, and stomach. Severe scarring of tissue and death may result. Symptoms may include bleeding, vomiting, diarrhea, fall in blood pressure. Damage may appears days after exposure.
Skin Contact:
Corrosive! Contact with skin can cause irritation or severe burns and scarring with greater exposures.
Eye Contact:
Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness.
Chronic Exposure:
Prolonged contact with dilute solutions or dust has a destructive effect upon tissue.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

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4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion:
DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician, immediately. Wash clothing before reuse.
Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician:
Perform endoscopy in all cases of suspected sodium hydroxide ingestion. In cases of severe esophageal corrosion, the use of therapeutic doses of steroids should be considered. General supportive measures with continual monitoring of gas exchange, acid-base balance, electrolytes, and fluid intake are also required.

---

5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard. Hot or molten material can react violently with water. Can react with certain metals, such as aluminum, to generate flammable hydrogen gas.
Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire. Adding water to caustic solution generates large amounts of heat.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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6. Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. Do not flush caustic residues to the sewer. Residues from spills can be diluted with water, neutralized with dilute acid such as acetic, hydrochloric or sulfuric. Absorb neutralized caustic residue on clay, vermiculite or other inert substance and package in a suitable container for disposal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

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7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Always add the caustic to water while stirring; never the reverse. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product. Do not store with aluminum or magnesium. Do not mix with acids or organic materials.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
- OSHA Permissible Exposure Limit (PEL):
2 mg/m3 Ceiling
- ACGIH Threshold Limit Value (TLV):
2 mg/m3 Ceiling

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator.
WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
White, deliquescent pellets or flakes.

Odor:
Odorless.

Solubility:
111 g/100 g of water.

Specific Gravity:
2.13

pH:
13 - 14 (0.5% soln.)

% Volatiles by volume @ 21C (70F):
0

Boiling Point:
1390C (2534F)
Melting Point:
318C (604F)
Vapor Density (Air=1):
> 1.0
Vapor Pressure (mm Hg):
Negligible.
Evaporation Rate (BuAc=1):
No information found.

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10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Very hygroscopic. Can slowly pick up moisture from air and react with carbon dioxide from air to form sodium carbonate.
Hazardous Decomposition Products:
Sodium oxide. Decomposition by reaction with certain metals releases flammable and explosive hydrogen gas.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Sodium hydroxide in contact with acids and organic halogen compounds, especially trichloroethylene, may causes violent reactions. Contact with nitromethane and other similar nitro compounds causes formation of shock-sensitive salts. Contact with metals such as aluminum, magnesium, tin, and zinc cause formation of flammable hydrogen gas. Sodium hydroxide, even in fairly dilute solution, reacts readily with various sugars to produce carbon monoxide. Precautions should be taken including monitoring the tank atmosphere for carbon monoxide to ensure safety of personnel before vessel entry.
Conditions to Avoid:
Moisture, dusting and incompatibles.

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11. Toxicological Information

Irritation data: skin, rabbit: 500 mg/24H severe; eye rabbit: 50 ug/24H severe; investigated as a mutagen.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Sodium Hydroxide (1310-73-2)	No	No	None

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12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

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13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: SODIUM HYDROXIDE, SOLID
Hazard Class: 8
UN/NA: UN1823
Packing Group: II
Information reported for product/size: 300LB

International (Water, I.M.O.)

Proper Shipping Name: SODIUM HYDROXIDE, SOLID
Hazard Class: 8
UN/NA: UN1823
Packing Group: II
Information reported for product/size: 300LB

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15. Regulatory Information

--------\Chemical Inventory Status - Part 1\---------------------------------

Ingredient	TSCA	EC	Japan	Australia
Sodium Hydroxide (1310-73-2)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\---------------------------------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Sodium Hydroxide (1310-73-2)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------------

	-SARA 302-	------SARA 313------

Ingredient	RQ	TPQ	List	Chemical Catg.
Sodium Hydroxide (1310-73-2)	No	No	Yes	No

\Federal, State & International Regulations - Part 2\

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Sodium Hydroxide (1310-73-2)	1000	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
Reactivity: Yes (Pure / Solid)

Australian Hazchem Code: 2R
Poison Schedule: S6
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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16. Other Information

NFPA Ratings: Health: **3** Flammability: **0** Reactivity: **1**
Label Hazard Warning:
POISON! DANGER! CORROSIVE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. CAUSES BURNS TO ANY AREA OF CONTACT. REACTS WITH WATER, ACIDS AND OTHER MATERIALS.
Label Precautions:
Do not get in eyes, on skin, or on clothing.
Do not breathe dust.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Label First Aid:
If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.
Revision Information:
MSDS Section(s) changed since last revision of document include: 10.
Disclaimer:
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but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

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Prepared by: Strategic Services Division
Phone Number: (314) 539-1600 (U.S.A.)

MATERIAL SAFETY DATA SHEET
CAUSTIC SODA (NaOH)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME:	CAUSTIC SODA (NaOH)
UN/NA (PIN) No.:	1823
CHEMICAL CLASS:	Bases,alkalies (inorganic).
APPLICATIONS:	Oil well drilling fluid additive, pH modifier.
EMERGENCY TELEPHONE:	281-561-1600
SUPPLIER:	Supplied by a Business Unit of M-I L.L.C. P.O. Box 42842, Houston, Texas 77242-2842 See cover sheet for local supplier.
TELEPHONE:	281-561-1509
FAX:	281-561-7240
CONTACT PERSON:	Sam Hoskin

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME:	CAS No.:	CONTENTS :	EPA RQ:	TPQ:
Sodium hydroxide	1310-73-2	100 %	1 000 lbs	

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

DANGER! CAUSES EYE AND SKIN BURNS. Do not get in eyes or on skin or clothing. Avoid breathing airborne product. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
Water reactive. Contact with water or moisture may generate sufficient heat to ignite combustible materials.

This product is a/an white pellet or flake material. Slippery when wet.

ACUTE EFFECTS:

HEALTH HAZARDS, GENERAL:

Contact with this product is severely irritating to the eyes, skin and respiratory tract and may cause severe eye injury.

INHALATION: Severely irritating to the respiratory tract if inhaled.

INGESTION: May cause burns in mucous membranes, throat, oesophagus and stomach.

SKIN: Corrosive to skin.

EYES: Corrosive to eyes.

CHRONIC EFFECTS:

CARCINOGENICITY:

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

ROUTE OF ENTRY:
Inhalation. Skin and/or eye contact.

TARGET ORGANS:
Respiratory system, lungs. Skin. Eyes.

4. FIRST AID MEASURES

GENERAL: Persons seeking medical attention should carry a copy of this MSDS with them.

INHALATION: Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.

INGESTION: Drink a couple of glasses water or milk. Do NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. Get medical attention.

SKIN: Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

EYES: Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5. FIRE FIGHTING MEASURES

AUTO IGNITION TEMP. (°F): N/D
FLAMMABILITY LIMIT - LOWER(%): N/D
FLAMMABILITY LIMIT - UPPER(%): N/D

EXTINGUISHING MEDIA:
Carbon dioxide (CO2). Dry chemicals. Foam.

SPECIAL FIRE FIGHTING PROCEDURES:
No specific fire fighting procedure given.

UNUSUAL FIRE & EXPLOSION HAZARDS:
Upon contact with certain metals and water or moist air, hydrogen gas is generated, forming explosive mixtures with air.

HAZARDOUS COMBUSTION PRODUCTS:
Irritating gases/vapors/fumes.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:
Wear proper personal protective equipment (see MSDS Section 8).

SPILL CLEAN-UP PROCEDURES:
Avoid generating and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. Do not contaminate drainage or waterways. Repackage or recycle if possible.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS:
Avoid handling causing generation of dust. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed. Provide good ventilation. Mechanical ventilation or local exhaust ventilation is required.

STORAGE PRECAUTIONS:
Store at moderate temperatures in dry, well ventilated area. Keep in original container.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

		OSHA PEL:		ACGIH TLV:		OTHER:		
INGREDIENT NAME:	**CAS No.:**	**TWA:**	**STEL:**	**TWA:**	**STEL:**	**TWA:**	**STEL:**	**UNITS:**
Sodium hydroxide	1310-73-2	2		2 C				mg/m3

INGREDIENT COMMENTS:
C = Ceiling Limit

PROTECTIVE EQUIPMENT:

ENGINEERING CONTROLS:
Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

VENTILATION: Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.

RESPIRATORS: Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

PROTECTIVE GLOVES:
Use gauntlet type rubber gloves.

EYE PROTECTION:
Use tight fitting goggles if dust is generated. Wear splash-proof eye goggles to prevent any possibility of eye contact.

PROTECTIVE CLOTHING:
Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station and safety shower.

HYGIENIC WORK PRACTICES:
Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE:	Pellets. or Flakes.	
COLOR:	White.	
ODOR:	Odorless or no characteristic odor.	
SOLUBILITY DESCRIPTION:	Soluble in water.	
BOILING POINT (°F, Interval):	2530	PRESSURE: 760mmHg
MELT./FREEZ. POINT (°F, Interval):	604	
DENSITY/SPECIFIC GRAVITY (g/ml):	2.13	TEMPERATURE (°F): 68
BULK DENSITY:	133 lb/cu. ft.; 2131 kg/m3	
VAPOR DENSITY (air=1):	N/A	
VAPOR PRESSURE:	42 mmHg	TEMPERATURE (°F): 1832
pH-VALUE, DILUTED SOLUTION:	13	CONCENTRATION (%,M): 1%

10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID:
Reacts strongly with water. Avoid contact with acids.

HAZARDOUS POLYMERIZATION:
Will not polymerize.

POLYMERIZATION DESCRIPTION:
Not relevant.

MATERIALS TO AVOID:
Organochlorine solvents, nitro and nitroso compounds, organic peroxides; aluminum, zinc, tin and their alloys

HAZARDOUS DECOMPOSITION PRODUCTS:
No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

Component: **Sodium hydroxide**

TOXICOLOGICAL DATA:

Corrosive effects.		24 hours.	Eye.	Rabbit.	1 mg Severe Irritation
Corrosive effects.		24 hours.	Skin.	Rabbit.	500 mg Severe Irritation
Acute toxicity.	LDLo.		Oral.	Rabbit.	500 mg/kg

TOXIC DOSE - LD 50: 1350 mg/kg (skn-rbt)

12. ECOLOGICAL INFORMATION

LC 50, 96 HRS, FISH, mg/l: 125 (Mosquitofish)
EC 50, 48 HRS, DAPHNIA, mg/l: 100
ACUTE AQUATIC TOXICITY:
This product passes the mysid shrimp toxicity test required by the U.S. Environmental Protection Agency (EPA) Region VI (Gulf of Mexico) NPDES Permit, which regulates offshore discharge of drilling fluids, when tested in a standard drilling fluid. Contact M-I's Environmental Affairs Department for more information.
This product is approved for use under the U.S. Environmental Protection Agency (EPA) Region IX (California) General NPDES Permit which regulates offshore discharges of drilling fluids. Contact M-I's Environmental Affairs Department for more information.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT:
This product, should it become a waste, is hazardous by U.S. RCRA criteria.
THIS CONTAINER MAY BE HAZARDOUS WHEN EMPTY. Empty containers retain residues. All labeled precautions must be observed.

DISPOSAL METHODS:
Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

LABEL FOR CONVEYANCE:

PROPER SHIPPING DESCRIPTION II:	Sodium hydroxide, solid, 8, UN1823, PG II
GENERAL:	RQ = 1000
EMERGENCY RESPONSE GUIDE No.:	154
U.S. DOT:	
UN/NA No.:	1823
U.S. DOT HAZARD LABEL:	CORROSIVE (Black/white diam.) DOT17
U.S. DOT CLASS:	Class 8 - Corrosive Material
U.S. DOT PACKING GROUP:	II
U.S. DOT PACKAGING INSTRUCTIONS:	49 CFR 173.154; 173.212; 240
CANADIAN TRANSPORT:	
TDGR CLASS:	Class 8 - Corrosives
TDGR LABEL:	Corrosive
SEA TRANSPORT:	
UN No. SEA:	1823
IMDG CLASS:	Class 8 - Corrosives
IMDG PAGE No.:	8225-1
IMDG PACK GR.:	II
EmS No.:	8-06
MFAG TABLE No.:	705
AIR TRANSPORT:	
UN No., AIR:	1823
ICAO CLASS:	Class 8 - Corrosives
AIR PACK GR.:	II

15. REGULATORY INFORMATION

REGULATORY STATUS OF INGREDIENTS:

NAME:	CAS No:	TSCA:	CERCLA:	SARA 302:	SARA 313:	DSL(CAN):
Sodium hydroxide	1310-73-2	Yes	Yes	No	No	Yes

US FEDERAL REGULATIONS:

WASTE CLASSIFICATION: A hazardous waste by U.S. RCRA criteria.

REGULATORY STATUS:

This Product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

SARA 311 Categories:
1: Immediate (Acute) Health Effects.
5. Reactivity Hazard.

The components of this product are listed on or are exempt from the following international chemical registries:
TSCA (U.S.)
DSL (Canada)

STATE REGULATIONS:
STATE REGULATORY STATUS:

This product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):.
Illinois Right-to-Know.
New Jersey Right-to-Know.
Pennsylvania Right-to-Know.

PROPOSITION 65: This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

CANADIAN REGULATIONS:
LABELS FOR SUPPLY:

REGULATORY STATUS:

This Material Safety Data Sheet has been prepared in compliance with the Controled Product Regulations.

Canadian WHMIS Classification: E - Corrosive Material D2B - Other Toxic Effects: Toxic Material

16. OTHER INFORMATION

NPCA HMIS HAZARD INDEX: 3 Serious Hazard
FLAMMABILITY: 0 Minimal Hazard
REACTIVITY: 1 Slight Hazard
NPCA HMIS PERS. PROTECT. INDEX: X Ask your supervisor for guidance

USER NOTES: N/A = Not applicable N/D = Not determined

INFORMATION SOURCES:

OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants.
ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition).
Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997).
Product information provided by the commercial vendor(s).

PREPARED BY: Sam Hoskin

REVISION No./Repl. MSDS of: 1 / June 3, 1996

MSDS STATUS: Approved.

DATE: June 9, 1998

DISCLAIMER:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

POTASSIUM CHLORIDE

PROFILE #11

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

MALLINCKRODT J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

POTASSIUM CHLORIDE

MSDS Number: P5631 --- *Effective Date: 11/17/99*

1. Product Identification

Synonyms: Potassium monochloride
CAS No.: 7447-40-7
Molecular Weight: 74.55
Chemical Formula: KCl
Product Codes:
J.T. Baker: 3040, 3045, 3046, 3052, 4001, 4920, 5596
Mallinckrodt: 0865, 0890, 3279, 3610, 3619, 3925, 4251, 4687, 4858, 4910, 5480, 6156, 6205, 6230, 6275, 6307, 6335, 6363, 6788, 6801, 6838, 6841, 6842, 6845, 6849, 6858, 7207, 7535, 7590, 7618, 7769, V483

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Potassium Chloride	7447-40-7	100%	Yes

3. Hazards Identification

Emergency Overview

CAUTION! MAY BE HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 0 - None
Flammability Rating: 0 - None
Reactivity Rating: 0 - None
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
Inhalation of high concentrations of dust may cause nasal or lung irritation.
Ingestion:
Large quantities can produce gastrointestinal irritation and vomiting. May produce weakness and circulatory problems. May affect heart. In severe cases, ingestion may be fatal.
Skin Contact:
Contact may cause irritation or rash, particularly with moist skin.
Eye Contact:
Potassium chloride is moderate eye irritant. Redness, tearing, possible abrasion can occur.
Chronic Exposure:
No information found.
Aggravation of Pre-existing Conditions:
Persons with impaired kidney function may be more susceptible to the effects of the substance.

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4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician.
Skin Contact:
Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Call a physician if irritation persists.

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5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard.
Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

---

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

---

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
- OSHA Permissible Exposure Limit (PEL):
15 mg/m3 total dust, 5 mg/m3 respirable fraction for nuisance dusts.
- ACGIH Threshold Limit Value (TLV):
10 mg/m3 total dust containing no asbestos and < 1% crystalline silica for Particulates Not Otherwise Classified (PNOC).

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist

respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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9. Physical and Chemical Properties

Appearance:

White crystals or powder.

Odor:

Odorless.

Solubility:

28.1 g/100g of water @ 0C.

Density:

1.987

pH:

ca. 7 Saturated aq. sl. @ 15C

% Volatiles by volume @ 21C (70F):

0

Boiling Point:

1500C (2732F) Sublimes.

Melting Point:

772C (1422F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

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10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Oxides of the contained metal and halogen, possibly also free, or ionic halogen.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Bromine trifluoride; potassium permanganate plus sulfuric acid.
Conditions to Avoid:
No information found.

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11. Toxicological Information

Oral rat LD50: 2600 mg/kg; irritation eye rabbit (standard Draize): 500 mg/24 hr mild; investigated as a mutagen.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Potassium Chloride (7447-40-7)	No	No	None

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12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

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13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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14. Transport Information

Not regulated.

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15. Regulatory Information

--------\Chemical Inventory Status - Part 1\----------

Ingredient	TSCA	EC	Japan	Australia

Potassium Chloride (7447-40-7)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\----------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Potassium Chloride (7447-40-7)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Potassium Chloride (7447-40-7)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\----------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Potassium Chloride (7447-40-7)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
Reactivity: No (Pure / Solid)

Australian Hazchem Code: No information found.
Poison Schedule: No information found.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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16. Other Information

NFPA Ratings: Health: **1** Flammability: **0** Reactivity: **0**
Label Hazard Warning:
CAUTION! MAY BE HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.
Label Precautions:
Avoid breathing dust.
Keep container closed.
Use with adequate ventilation.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.
Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. If irritation develops call a physician. If inhaled, remove to fresh air. Get medical attention for any breathing difficulty.
Product Use:
Laboratory Reagent.
Revision Information:
No changes.

Disclaimer:

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Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

****

Prepared by: Strategic Services Division
Phone Number: (314) 539-1600 (U.S.A.)

*** CHEMICAL IDENTIFICATION ***

RTECS NUMBER : TS8050000
CHEMICAL NAME : Potassium chloride
CAS REGISTRY NUMBER : 7447-40-7
OTHER CAS REGISTRY NOS. : 12599-00-7
59217-68-4
LAST UPDATED : 199901
DATA ITEMS CITED : 33
MOLECULAR FORMULA : Cl-K
MOLECULAR WEIGHT : 74.55
WISWESSER LINE NOTATION : KA G
COMPOUND DESCRIPTOR : Mutagen
Human
Primary Irritant
SYNONYMS/TRADE NAMES :

* Chlorid draselny
* Chloropotassuril
* Dipotassium dichloride
* Emplets potassium chloride
* Enseal
* Kalitabs
* Kaochlor
* Kaon-Cl
* Kaon-Cl 10
* Kaon-Cl TABS
* Kay ciel
* K-Dur
* K-Lor
* Klotrix
* K-Lyte/Cl
* K-Predne-dome
* Muriate of potash
* Monopotassium chloride
* Pfiklor
* Potassium monochloride
* Potavescent
* Rekawan
* Slow K
* Super K
* Super K (salt)
* Tripotassium trichloride

*** HEALTH HAZARD DATA ***

** SKIN/EYE IRRITATION DATA **

TYPE OF TEST : Standard Draize test
ROUTE OF EXPOSURE : Administration into the eye
SPECIES OBSERVED : Rodent - rabbit
DOSE/DURATION : 500 mg/24H
REACTION SEVERITY : Mild
REFERENCE :
28ZPAK "Sbornik Vysledku Toxixologickeho Vysetreni Latek A Pripravku," Marhold, J.V., Institut Pro Vychovu Vedoucicn Pracovniku Chemickeho Prumyclu Praha, Czechoslovakia, 1972 Volume(issue)/page/year: -,8,1972

** ACUTE TOXICITY DATA **

TYPE OF TEST : LDLo - Lowest published lethal dose
ROUTE OF EXPOSURE : Oral
SPECIES OBSERVED : Human - infant
DOSE/DURATION : 938 mg/kg/2D
TOXIC EFFECTS :

AMIDES / IMIDAZOLINES

PROFILE #12

oduct B

TION CODE 2-3-0

1 - SECTION I - IDENTITY

2 - SECTION II - REGULATORY CLASSIFICATION

ENVIRONMENTAL	OCCUPATIONAL	TRANSPORTATION
RQ= 145 Gallons (Naphthalene)	OSHA Non-Hazardous: NA	Not Regulated: NA
TPQ= None	OSHA Hazardous: Yes	Regulated: Yes
	X Acute	Flammable Liquid,
SARA 313: Yes	X Chronic	N.O.S., (Contains
Naphthalene	X Fire	Isopropanol,
	NA Pressure	Naphthalene), 3,
	NA Reactive	UN 1993, III

The components of this product are listed on the TSCA inventory.

3 - SECTION III - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT	CAS #	PEL(OSHA)* TWA	PEL(OSHA)* STEL	PEL(OSHA)* A/L	TLV(ACGIH)* TWA	TLV(ACGIH)* STEL	MFG* REC, TWA
Aromatic Hydrocarbon Mixture (% Proprietary)	64741-67-9	None Established					
Naphthalene (<9%)	91-20-3	10	15		10	15	
Isopropanol (% Proprietary)	67-63-0	100	500		100	500	
Mixed Ethylene Amines (<2%)	27308-78-7	None Established					

*ppm unless otherwise indicated; (C) denotes ceiling limit; (S) or (Skin) indicates that skin absorption may make a significant contribution to overall exposure.

4 - SECTION IV - PHYSICAL & CHEMICAL PROPERTIES

Specific Gravity @60F(16C): 0.918 (H2O=1) pH: 5% of Product: 8.2

Density (lbs/gallon): 7.65 Viscosity (Method): Not Determined

PRODUCT B

JTION CODE 2-3-0

SECTION IV - PHYSICAL & CHEMICAL PROPERTIES (continued)

Vapor Density (Air=1): > 1

Appearance and Odor: Opaque, dark brown liquid with aromatic odor

Solubility: Not Determined

Stability: Stable

Freezing Point: Not Determined

Pour Point: -54F (-48C)

Flash Point (Method): 90F (32C)

Percent Organic Compounds: Not Determined

Boiling Point: Not Determined

Conditions to Avoid: Oxidizers; heat sparks, or open flame

Vapor Pressure: 1.144 psia (Reid)

Haz. Decomp. Prod: Carbon monoxide, oxides of nitrogen, and/or unidentified hydrocarbons on combustion

Hazardous Polymerization: Will not occur

FIRE CONTROL PROCEDURES: Use foam, dry chemical, CO2, water fog or spray. Do not enter a fire area without proper protective equipment, including NIOSH/MSHA approved, self-contained breathing apparatus. Cool exposed containers with water spray. Avoid exposure to vapors.

FIRE HAZARDS:
Flammable Liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point.
Vapors can travel to source of ignition and flash back.
Never use welding or cutting torch on or near drums, even when empty.
Explosion may result.
During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Vapors may form explosive mixture with air.

SECTION V - HEALTH HAZARDS

EFFECTS OF OVEREXPOSURE:
EYE CONTACT: Eye contact may cause irritation and redness.
SKIN CONTACT: May cause skin irritation. Prolonged or repeated contact may result in defatting and drying of the skin causing irritation and dermatitis.
SKIN ABSORPTION: Not expected to be absorbed through the skin under normal conditions.
INHALATION: Inhalation of high concentrations of vapors or mists or inhalation for prolonged periods of time may cause respiratory tract irritation and/or central nervous system (CNS) effects such as lightheadedness, dizziness, headaches or unconsciousness.
INGESTION: Not considered to be a likely route of exposure, however, may be harmful if swallowed. May be aspirated into the lungs during swallowing or vomiting of swallowed material. Aspiration into the lungs may produce chemical pneumonitis, pulmonary edema and hemorrhaging.

OTHER INFORMATION:
Prolonged or repeated exposure to this aromatic hydrocarbon mixture can cause central nervous system effects and irritation to the eyes, skin, and respiratory tract. Frequent skin contact can remove skin oils, resulting in dermatitis.

Naphthalene is found in this product as a contaminant of the solvent system. Humans may be more sensitive to naphthalene than laboratory animals by an order of magnitude. Vapors at 15 ppm cause eye irritation in laboratory animals. Direct contact with the eye may produce conjunctivitis, injury to the cornea, diminished visual acuity, and cataracts. Ingestion can produce nausea, abdominal cramps, vomiting, diarrhea, convulsions, coma,

PRODUCT B

JTION CODE 2-3-0

5 - SECTION V - HEALTH HAZARDS (continued)

brown or black urine (due to hemolyzed blood), anemia, fever, and liver or kidney damage. Inhalation can produce central nervous system depression with the following symptoms: headache, excitement, nausea, vomiting, sweating, visual changes and tingling of the skin. Bloody urine may also be produced. Ingestion has produced reproductive effects both in humans and laboratory animals.

Animal Toxicity Data
Rat Oral LD50 - 490 mg/kg (RTECS)
Rat Skin LD50 - >2,500 mg/kg (RTECS)
Rabbit Skin LD50 - >20 gm/kg (RTECS)
Human LDLo - 29 mg/kg (RTECS)
Irritation Testing
Open Draize Test
Rabbit Skin: 495 mg open (time not given) - Reaction: Mild (RTECS)
Standard Draize Test
Rabbit Eye: 100 mg (time not given) - Reaction: Mild (RTECS)

Isopropanol, a component of this product may irritate the skin and can produce an itching or burning sensation and prolonged exposure can cause dryness and cracking of the skin. It is also an irritant to the eyes, nose and throat. Excessive inhalation of the vapors may cause headaches, drowsiness, a loss of coordination, collapse, and death. The probable lethal oral dose for an adult is 8 fluid ounces (240 mL) but as little as 20 mL in water can produce symptoms (HSDB). The symptoms from ingestion include: 1. dizziness, incoordination, headache, confusion, stupor, and coma. 2. gastroenteritis with vomiting, hematemesis, and diarrhea. 3. hypotension, with or without bradycardia, and sometimes circulatory collapse. 4. persistent coma with hypothermia. 5. death by respiratory arrest. 6. Late manifestations: aspiration pneumonia, kidney and liver dysfunctions, which are usually mild and transient, but the renal impairment may be serious (HSDB). In addition, isopropanol has shown to be a fetotoxin in tests on laboratory animals [Nelson, BK et al (1988). Food and Chemical Toxicology, 26(3), pps 247-254]. Inhalation of high levels of isopropanol (4,000 and 8,000 ppm for 8 hours) has produced congestion in the liver, lungs, and spleen of laboratory animals (Laham S, et al, 1980, "Drug and Chemical Toxicology). Ingestion has produced hyperglycemia (high blood sugar) in humans (Lacouture, P, et al, 1983, "American Journal of Medicine" and Chan K-M, et al, 1993, "Clinical Chemistry"). In a four month study, inhalation of isopropanol vapors for 20 hours per week by laboratory animals produced bronchitis, pneumonia, and blood effects (International Program of Chemical Safety, 1990, Environmental Health Criteria 103: 2-propanol, World Health Organization).

Animal Toxicity Data for Isopropanol
Rat Oral LD50 - 5,045 mg/Kg (RTECS)
Rat Inhalation LC50 - 19,000 ppm/8 Hr, female (Sax's Dangerous Properties of Industrial Materials, 8th Edition)
Rabbit Dermal LD50 - 12,800 mg/Kg (RTECS)
Human Oral LDLo - 3,570 mg/Kg (RTECS)
Man Oral LDLo - 5,272 mg/Kg (RTECS)
Irritation Test Data
Standard Draize
Rabbit Skin - 500 mg REACTION: Mild (RTECS)
Rabbit Eye - 100 mg REACTION: Severe (RTECS)

Mixed ethylene amines may burn the skin upon contact as well as cause eye tissue injury. Absorption through the skin is possible. Overexposure to vapors will be irritating to the eyes, nose and throat. Mixed ethylene amines are sensitizing chemicals which can cause skin rash or an allergenic response. Ingestion may cause vomiting.

TARGET ORGANS (29 CFR 1910.1200-APPENDIX A):

Eye Hazard
Cutaneous Hazard (Skin)

PRODUCT B

JTION CODE 2-3-0

5 - SECTION V - HEALTH HAZARDS (continued)

Pulmonary Agent (Lungs)

6 - SECTION VI - EMERGENCY & FIRST AID PROCEDURES

EYE CONTACT: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. If irritation persists, seek medical attention.
SKIN CONTACT: Remove contaminated clothing and shoes. Wash skin thoroughly with mild soap and water. If irritation persists, seek medical attention. Launder clothes before reuse.
INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.
INGESTION: If swallowed, seek medical attention immediately. ONLY induce vomiting at the instructions of medical personnel. Never give anything by mouth to an unconscious person.

7 - SECTION VII - PROTECTIVE EQUIPMENT RECOMMENDATIONS

VENTILATION: The use of mechanical ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperatures, or is agitated. Where engineering controls are not feasible, assure use is in an area where there is natural air movement.

Under normal operating conditions, no excursions above the regulated (recommended) exposure levels, if established, should occur. However, if used at elevated temperatures (fire), lower atmospheric pressure (high altitudes) or any other physical conditions that may increase the inhalation exposure, respiratory protective equipment, as described below, should be worn. Also due to individual susceptibility and sensitivity, before respirators are used, a full medical evaluation should be performed per 29 CFR 1910.134(b)(10).

RESPIRATORY	CHEMICAL RESISTANT APPAREL	EYE/FACE
X As Needed	X Gloves-Viton	X Goggles
Air Supplied (SCBA)	Clothing	Full Face Shield
X Air Purifying	Boots	
X Full Face Piece		
Half Face Piece		
X Cartridge or Cannister		
Acid Gas		
X Organic Vapor		
Ammonia		

A thorough review of the job task (job safety analysis) by a competent safety professional should be conducted to determine the appropriate level of protection. See 29 CFR 1910, Subpart I and 29 CFR 1910.133 for further information.

8 - SECTION VIII - SPILL & LEAK PROCEDURES

Don appropriate personal protective equipment prior to entering spill\leak area. Evacuate area and\or limit access, as necessary. Approach area from upwind if possible. Shut off leak if it can be done safely. Contain spill. Keep out of water sources and sewers. Dike and pump large spills into

PRODUCT B

TION CODE 2-3-0

8 - SECTION VIII - SPILL & LEAK PROCEDURES (continued)

salvage containers. Soak up residue and small spills with absorbent clay, sand or dirt and place in salvage containers. Continue to observe handling precautions.

If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802. Also, in some jurisdictions, spills or leaks of any hazardous materials are reportable - consult local lead agencies for further information.

WASTE DISPOSAL METHOD(S): Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures and processes may change the classification to non-hazardous, or hazardous for reasons other than, or in addition to product characteristics. Dispose of all waste and/or containers in accordance with federal, state and local regulations.

REQUIREMENTS FOR TRANSPORTATION, HANDLING AND STORAGE: Transport, handle and store in accordance with OSHA Regulation 1910.106 and applicable DOT regulations.

Avoid inhalation of vapors or mists. Do not get in eyes, on skin or on clothing Keep container closed when not in use. Wear suitable protection for eyes and skin when handling. Use with adequate ventilation. Avoid contact with oxidizers. Store in well-ventilated area. Store in cool, dry area.

Control ignition source; keep away from heat, sparks and open flame. Use properly grounded electrical equipment when working with this product.

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Petrolite, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

By: C. J. Miller Date: 5/28/97 Supercedes: 3/25/93
Regulatory Information Specialist

5/28/97 Revised Sections II, III, IV, V, VI, VII, VIII

AMINES AND AMINE SALT

PROFILE #13

oduct B

TION CODE 2-3-0

1 - SECTION I - IDENTITY

2 - SECTION II - REGULATORY CLASSIFICATION

ENVIRONMENTAL	OCCUPATIONAL	TRANSPORTATION
RQ= 145 Gallons (Naphthalene)	OSHA Non-Hazardous: NA	Not Regulated: NA
TPQ= None	OSHA Hazardous: Yes	Regulated: Yes
	X Acute	Flammable Liquid,
SARA 313: Yes	X Chronic	N.O.S., (Contains
Naphthalene	X Fire	Isopropanol,
	NA Pressure	Naphthalene), 3,
	NA Reactive	UN 1993, III

The components of this product are listed on the TSCA inventory.

3 - SECTION III - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT	CAS #	PEL(OSHA)* TWA	PEL(OSHA)* STEL	PEL(OSHA)* A/L	TLV(ACGIH)* TWA	TLV(ACGIH)* STEL	MFG* REC, TWA
Aromatic Hydrocarbon Mixture (% Proprietary)	64741-67-9	None Established					
Naphthalene (<9%)	91-20-3	10	15		10	15	
Isopropanol (% Proprietary)	67-63-0	100	500		100	500	
Mixed Ethylene Amines (<2%)	27308-78-7	None Established					

*ppm unless otherwise indicated; (C) denotes ceiling limit; (S) or (Skin) indicates that skin absorption may make a significant contribution to overall exposure.

4 - SECTION IV - PHYSICAL & CHEMICAL PROPERTIES

Specific Gravity @60F(16C): 0.918 (H2O=1) pH: 5% of Product: 8.2

Density (lbs/gallon): 7.65 Viscosity (Method): Not Determined

200UCT B

JTION CODE 2-3-0

4 - SECTION IV - PHYSICAL & CHEMICAL PROPERTIES (continued)

Vapor Density (Air=1): > 1

Appearance and Odor: Opaque, dark brown liquid with aromatic odor

Solubility: Not Determined

Stability: Stable

Freezing Point: Not Determined

Pour Point: -54F (-48C)

Flash Point (Method): 90F (32C)

Percent Organic Compounds: Not Determined

Boiling Point: Not Determined

Conditions to Avoid: Oxidizers; heat sparks, or open flame

Vapor Pressure: 1.144 psia (Reid)

Haz. Decomp. Prod: Carbon monoxide, oxides of nitrogen, and/or unidentified hydrocarbons on combustion

Hazardous Polymerization: Will not occur

FIRE CONTROL PROCEDURES: Use foam, dry chemical, CO2, water fog or spray. Do not enter a fire area without proper protective equipment, including NIOSH/MSHA approved, self-contained breathing apparatus. Cool exposed containers with water spray. Avoid exposure to vapors.

FIRE HAZARDS:
Flammable Liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point.
Vapors can travel to source of ignition and flash back.
Never use welding or cutting torch on or near drums, even when empty.
Explosion may result.
During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Vapors may form explosive mixture with air.

5 - SECTION V - HEALTH HAZARDS

EFFECTS OF OVEREXPOSURE:
EYE CONTACT: Eye contact may cause irritation and redness.
SKIN CONTACT: May cause skin irritation. Prolonged or repeated contact may result in defatting and drying of the skin causing irritation and dermatitis.
SKIN ABSORPTION: Not expected to be absorbed through the skin under normal conditions.
INHALATION: Inhalation of high concentrations of vapors or mists or inhalation for prolonged periods of time may cause respiratory tract irritation and/or central nervous system (CNS) effects such as lightheadedness, dizziness, headaches or unconsciousness.
INGESTION: Not considered to be a likely route of exposure, however, may be harmful if swallowed. May be aspirated into the lungs during swallowing or vomiting of swallowed material. Aspiration into the lungs may produce chemical pneumonitis, pulmonary edema and hemorrhaging.

OTHER INFORMATION:
Prolonged or repeated exposure to this aromatic hydrocarbon mixture can cause central nervous system effects and irritation to the eyes, skin, and respiratory tract. Frequent skin contact can remove skin oils, resulting in dermatitis.

Naphthalene is found in this product as a contaminant of the solvent system. Humans may be more sensitive to naphthalene than laboratory animals by an order of magnitude. Vapors at 15 ppm cause eye irritation in laboratory animals. Direct contact with the eye may produce conjunctivitis, injury to the cornea, diminished visual acuity, and cataracts. Ingestion can produce nausea, abdominal cramps, vomiting, diarrhea, convulsions, coma,

PRODUCT B

TION CODE 2-3-0

SECTION V - HEALTH HAZARDS (continued)

brown or black urine (due to hemolyzed blood), anemia, fever, and liver or kidney damage. Inhalation can produce central nervous system depression with the following symptoms: headache, excitement, nausea, vomiting, sweating, visual changes and tingling of the skin. Bloody urine may also be produced. Ingestion has produced reproductive effects both in humans and laboratory animals.

Animal Toxicity Data
- Rat Oral LD50 - 490 mg/kg (RTECS)
- Rat Skin LD50 - >2,500 mg/kg (RTECS)
- Rabbit Skin LD50 - >20 gm/kg (RTECS)
- Human LDLo - 29 mg/kg (RTECS)

Irritation Testing
- Open Draize Test
  - Rabbit Skin: 495 mg open (time not given) - Reaction: Mild (RTECS)
- Standard Draize Test
  - Rabbit Eye: 100 mg (time not given) - Reaction: Mild (RTECS)

Isopropanol, a component of this product may irritate the skin and can produce an itching or burning sensation and prolonged exposure can cause dryness and cracking of the skin. It is also an irritant to the eyes, nose and throat. Excessive inhalation of the vapors may cause headaches, drowsiness, a loss of coordination, collapse, and death. The probable lethal oral dose for an adult is 8 fluid ounces (240 mL) but as little as 20 mL in water can produce symptoms (HSDB). The symptoms from ingestion include: 1. dizziness, incoordination, headache, confusion, stupor, and coma. 2. gastroenteritis with vomiting, hematemesis, and diarrhea. 3. hypotension, with or without bradycardia, and sometimes circulatory collapse. 4. persistent coma with hypothermia. 5. death by respiratory arrest. 6. Late manifestations: aspiration pneumonia, kidney and liver dysfunctions, which are usually mild and transient, but the renal impairment may be serious (HSDB). In addition, isopropanol has shown to be a fetotoxin in tests on laboratory animals [Nelson, BK et al (1988). Food and Chemical Toxicology, 26(3), pps 247-254]. Inhalation of high levels of isopropanol (4,000 and 8,000 ppm for 8 hours) has produced congestion in the liver, lungs, and spleen of laboratory animals (Laham S, et al, 1980, "Drug and Chemical Toxicology). Ingestion has produced hyperglycemia (high blood sugar) in humans (Lacouture, P, et al, 1983, "American Journal of Medicine" and Chan K-M, et al, 1993, "Clinical Chemistry"). In a four month study, inhalation of isopropanol vapors for 20 hours per week by laboratory animals produced bronchitis, pneumonia, and blood effects (International Program of Chemical Safety, 1990, Environmental Health Criteria 103: 2-propanol, World Health Organization).

Animal Toxicity Data for Isopropanol
- Rat Oral LD50 - 5,045 mg/Kg (RTECS)
- Rat Inhalation LC50 - 19,000 ppm/8 Hr, female (Sax's Dangerous Properties of Industrial Materials, 8th Edition)
- Rabbit Dermal LD50 - 12,800 mg/Kg (RTECS)
- Human Oral LDLo - 3,570 mg/Kg (RTECS)
- Man Oral LDLo - 5,272 mg/Kg (RTECS)

Irritation Test Data
- Standard Draize
  - Rabbit Skin - 500 mg REACTION: Mild (RTECS)
  - Rabbit Eye - 100 mg REACTION: Severe (RTECS)

Mixed ethylene amines may burn the skin upon contact as well as cause eye tissue injury. Absorption through the skin is possible. Overexposure to vapors will be irritating to the eyes, nose and throat. Mixed ethylene amines are sensitizing chemicals which can cause skin rash or an allergenic response. Ingestion may cause vomiting.

TARGET ORGANS (29 CFR 1910.1200-APPENDIX A):

Eye Hazard
Cutaneous Hazard (Skin)

PRODUCT B

JTION CODE 2-3-0

5 - SECTION V - HEALTH HAZARDS (continued)

Pulmonary Agent (Lungs)

6 - SECTION VI - EMERGENCY & FIRST AID PROCEDURES

EYE CONTACT: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. If irritation persists, seek medical attention.
SKIN CONTACT: Remove contaminated clothing and shoes. Wash skin thoroughly with mild soap and water. If irritation persists, seek medical attention. Launder clothes before reuse.
INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.
INGESTION: If swallowed, seek medical attention immediately. ONLY induce vomiting at the instructions of medical personnel. Never give anything by mouth to an unconscious person.

7 - SECTION VII - PROTECTIVE EQUIPMENT RECOMMENDATIONS

VENTILATION: The use of mechanical ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperatures, or is agitated. Where engineering controls are not feasible, assure use is in an area where there is natural air movement.

Under normal operating conditions, no excursions above the regulated (recommended) exposure levels, if established, should occur. However, if used at elevated temperatures (fire), lower atmospheric pressure (high altitudes) or any other physical conditions that may increase the inhalation exposure, respiratory protective equipment, as described below, should be worn. Also due to individual susceptibility and sensitivity, before respirators are used, a full medical evaluation should be performed per 29 CFR 1910.134(b)(10).

RESPIRATORY	CHEMICAL RESISTANT APPAREL	EYE/FACE
X As Needed	X Gloves-Viton	X Goggles
Air Supplied (SCBA)	Clothing	Full Face Shield
X Air Purifying	Boots	
X Full Face Piece		
Half Face Piece		
X Cartridge or Cannister		
Acid Gas		
X Organic Vapor		
Ammonia		

A thorough review of the job task (job safety analysis) by a competent safety professional should be conducted to determine the appropriate level of protection. See 29 CFR 1910, Subpart I and 29 CFR 1910.133 for further information.

8 - SECTION VIII - SPILL & LEAK PROCEDURES

Don appropriate personal protective equipment prior to entering spill\leak area. Evacuate area and\or limit access, as necessary. Approach area from upwind if possible. Shut off leak if it can be done safely. Contain spill. Keep out of water sources and sewers. Dike and pump large spills into

PRODUCT B

JTION CODE 2-3-0

8 - SECTION VIII - SPILL & LEAK PROCEDURES (continued)

salvage containers. Soak up residue and small spills with absorbent clay, sand or dirt and place in salvage containers. Continue to observe handling precautions.

If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802. Also, in some jurisdictions, spills or leaks of any hazardous materials are reportable - consult local lead agencies for further information.

WASTE DISPOSAL METHOD(S): Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures and processes may change the classification to non-hazardous, or hazardous for reasons other than, or in addition to product characteristics. Dispose of all waste and/or containers in accordance with federal, state and local regulations.

REQUIREMENTS FOR TRANSPORTATION, HANDLING AND STORAGE: Transport, handle and store in accordance with OSHA Regulation 1910.106 and applicable DOT regulations.

Avoid inhalation of vapors or mists. Do not get in eyes,on skin or on clothing Keep container closed when not in use. Wear suitable protection for eyes and skin when handling. Use with adequate ventilation. Avoid contact with oxidizers. Store in well-ventilated area. Store in cool, dry area.

Control ignition source; keep away from heat, sparks and open flame. Use properly grounded electrical equipment when working with this product.

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Petrolite, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

By: C. J. Miller Date: 5/28/97 Supercedes: 3/25/93
Regulatory Information Specialist

5/28/97 Revised Sections II, III, IV, V, VI, VII, VIII

LIGNITE

PROFILE #14

MATERIAL SAFETY DATA SHEET
TANNATHIN

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME:	TANNATHIN
CHEMICAL CLASS:	Lignite (leonardite).
APPLICATIONS:	Oil well drilling fluid additive. Dispersant
EMERGENCY TELEPHONE:	281-561-1600
SUPPLIER:	Supplied by a Business Unit of M-I L.L.C. P.O. Box 42842, Houston, Texas 77242-2842 See cover sheet for local supplier.
TELEPHONE:	281-561-1509
FAX:	281-561-7240
CONTACT PERSON:	Sam Hoskin

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME:	CAS No.:	CONTENTS :	EPA RQ:	TPQ:
Silica, crystalline, quartz	14808-60-7	1-5 %		
Lignite	1415-93-6	95-99 %		

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION! MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. Avoid contact with eyes, skin and clothing. Avoid breathing airborne product. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

This product is a/an black powder. May form explosive dust-air mixtures. Slippery when wet. A nuisance dust.

ACUTE EFFECTS:

HEALTH HAZARDS, GENERAL:

Particulates may cause mechanical irritation to the eyes, nose, throat and lungs. Particulate inhalation may lead to pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma. Dermatitis and asthma may result from short contact periods.

INHALATION: May be irritating to the respiratory tract if inhaled.

INGESTION: May cause gastric distress, nausea and vomiting if ingested.

SKIN: May be irritating to the skin.

EYES: May be irritating to the eyes.

CHRONIC EFFECTS:

CARCINOGENICITY:

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

ATTENTION! CANCER HAZARD. CONTAINS CRYSTALLINE SILICA WHICH CAN CAUSE CANCER. Risk of cancer depends on duration and level of exposure.

IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC classification Group 1.

ROUTE OF ENTRY:

Inhalation. Skin and/or eye contact.

TARGET ORGANS:

Respiratory system, lungs. Skin. Eyes.

4. FIRST AID MEASURES

GENERAL: Persons seeking medical attention should carry a copy of this MSDS with them.

INHALATION: Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.

INGESTION: Drink a couple of glasses water or milk. Do not give victim anything to drink of he is unconscious. Get medical attention.

SKIN: Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

EYES: Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5. FIRE FIGHTING MEASURES

FLASH POINT (°F):	309	METHOD: PM Closed cup.
AUTO IGNITION TEMP. (°F):	N/D	
FLAMMABILITY LIMIT - LOWER(%):	N/D	
FLAMMABILITY LIMIT - UPPER(%):	N/D	

EXTINGUISHING MEDIA:

Carbon dioxide (CO2). Dry chemicals. Foam. Water spray, fog or mist.

SPECIAL FIRE FIGHTING PROCEDURES:

No specific fire fighting procedure given.

UNUSUAL FIRE & EXPLOSION HAZARDS:

Dust in high concentrations may form explosive mixtures with air.

HAZARDOUS COMBUSTION PRODUCTS:

Irritating gases/vapors/fumes. Oxides of: Carbon.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Wear proper personal protective equipment (see MSDS Section 8).

SPILL CLEAN-UP PROCEDURES:

Avoid generating and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. Do not contaminate drainage or waterways. Repackage or recycle if possible.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS:

Avoid handling causing generation of dust. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed. Provide good ventilation. Mechanical ventilation or local exhaust ventilation is required.

STORAGE PRECAUTIONS:

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

		OSHA PEL:		ACGIH TLV:		OTHER:		
INGREDIENT NAME:	CAS No.:	TWA:	STEL:	TWA:	STEL:	TWA:	STEL:	UNITS:
Silica, crystalline, quartz	14808-60-7	*		0.1				mg/m3 resp.dust
Lignite	1415-93-6	*		2 *				mg/m3 resp.dust

INGREDIENT COMMENTS:

* OSHA PELs for Mineral Dusts containing crystalline silica are 10 mg/m3 / (%SiO2+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite. * Lignite exposure limits are for Coal Dust, respirable fraction containing <5% crystalline silica. OSHA PEL is 2.4 mg/m3 / (%SiO2+2).

PROTECTIVE EQUIPMENT:

ENGINEERING CONTROLS:

Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

VENTILATION: Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.

RESPIRATORS: Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator. For exposures exceeding 10 x PEL use a NIOSH-approved N100 Particulate Respirator.

PROTECTIVE GLOVES:

Use suitable protective gloves if risk of skin contact.

EYE PROTECTION:

Wear dust resistant safety goggles where there is danger of eye contact.

PROTECTIVE CLOTHING:

Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES:

Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: Powder, dust.

COLOR:	Black.	
ODOR:	Earthy.	
SOLUBILITY DESCRIPTION:	Insoluble in water.	
DENSITY/SPECIFIC GRAVITY (g/ml):	1.6 - 1.8	TEMPERATURE (°F): 68
BULK DENSITY:	833 kg/m3	
VAPOR DENSITY (air=1):	N/A	
VAPOR PRESSURE:	N/A	TEMPERATURE (°F):
pH-VALUE, DILUTED SOLUTION:	4.0-5.0	CONCENTRATION (%,M): 1%

10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID:
Avoid heat.

HAZARDOUS POLYMERIZATION:
Will not polymerize.

POLYMERIZATION DESCRIPTION:
Not relevant.

MATERIALS TO AVOID:
Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS:
No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:
No toxicological data is available for this product.

12. ECOLOGICAL INFORMATION

ACUTE AQUATIC TOXICITY:
This product passes the mysid shrimp toxicity test required by the U.S. Environmental Protection Agency (EPA) Region VI (Gulf of Mexico) NPDES Permit, which regulates offshore discharge of drilling fluids, when tested in a standard drilling fluid. Contact M-I's Environmental Affairs Department for more information.
This product is approved for use under the U.S. Environmental Protection Agency (EPA) Region IX (California) General NPDES Permit which regulates offshore discharges of drilling fluids. Contact M-I's Environmental Affairs Department for more information.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT:
This product does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc, may render the resulting materials hazardous.
Empty containers retain residues. All labeled precautions must be observed.

DISPOSAL METHODS:
Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

GENERAL: RQ = N/A

U.S. DOT:
U.S. DOT CLASS: Not regulated.

CANADIAN TRANSPORT:
TDGR CLASS: Not regulated.

SEA TRANSPORT:
IMDG CLASS: Not regulated.

AIR TRANSPORT:
ICAO CLASS: Not regulated.

15. REGULATORY INFORMATION

REGULATORY STATUS OF INGREDIENTS:

NAME:	CAS No:	TSCA:	CERCLA:	SARA 302:	SARA 313:	DSL(CAN):
Silica, crystalline, quartz	14808-60-7	Yes	No	No	No	Yes
Lignite	1415-93-6	Yes	No	No	No	Yes

US FEDERAL REGULATIONS:
WASTE CLASSIFICATION: Not a hazardous waste by U.S. RCRA criteria. See Section 13.

REGULATORY STATUS: This Product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

SARA 311 Categories:
1: Immediate (Acute) Health Effects.
2. Delayed (Chronic) Health Effects.
The components of this product are listed on or are exempt from the following international chemical registries:
TSCA (U.S.)
DSL (Canada)

STATE REGULATIONS:
STATE REGULATORY STATUS: This product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):.

Illinois Right-to-Know.
New Jersey Right-to-Know.
Pennsylvania Right-to-Know.

PROPOSITION 65: This product contains the following chemical(s) considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required:
Silica, crystalline

CANADIAN REGULATIONS:

LABELS FOR SUPPLY:

REGULATORY STATUS: This Material Safety Data Sheet has been prepared in compliance with the Controled Product Regulations.

Canadian WHMIS Classification: D2A - Other Toxic Effects: Very Toxic Material

16. OTHER INFORMATION

NPCA HMIS HAZARD INDEX:	* 1 Slight Hazard
FLAMMABILITY:	1 Slight Hazard
REACTIVITY:	0 Minimal Hazard
NPCA HMIS PERS. PROTECT. INDEX:	E - Safety Glasses, Gloves, Dust Respirator
USER NOTES:	N/A = Not applicable N/D = Not determined
INFORMATION SOURCES:	OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants. ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition). Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997). IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Silica, Some Silicates, Coal Dust, and para-Aramid Fibrils, Vol. 68, World Health Organization, Lyon, France, 1997. Product information provided by the commercial vendor(s).
PREPARED BY:	Sam Hoskin
REVISION No./Repl. MSDS of:	1 / June 3, 1996
MSDS STATUS:	Approved.
DATE:	August 4, 1998

BAKER HUGHES INTEQ

2001 Rankin Road
Houston, Texas 77073

MATERIAL SAFETY DATA SHEET

EMERGENCY TELEPHONE: (713) 439-8900
CHEMTREC: 1-800-424-9300

I. MANUFACTURER'S INFORMATION:

Manufacturer: BAKER HUGHES INTEQ
Product Name: **LIGCO**
Chemical Name: FILTRATION CONTROL AGENT
Chemical Description: HIGHLY OXIDIZED LEONARDITE

HMIS Hazard Rating and Key				
Health	0	Minimal	0
Flammability	2	Slight	1
Reactivity	0	Moderate	2
Personal Protection	E	Serious	3
		Severe	4

Proper Shipping Description: DRILLING FLUID COMPOUND, N.O.S.
Hazard Class: NOT REGULATED UN Number: NA Hazard Label: NA DOT Response Guide: NA
Transportation Note: NA

II. HAZARD IDENTIFICATION:

Hazardous Components:	ACGIH TLV:	OSHA PEL:	%	CAS Number:	Product RQ:
LEONARDITE, AS COAL DUST	2.0 MG/M3 R	2.0 MG/M3 R	97	1415-93-6	NA
SILICA, CRYSTALLINE QUARTZ	0.1 MG/M3 R	0.1 MG/M3 R	3	14808-60-7	NA

Hazards Associated with Product Use

	Yes		Yes		Yes		Yes
Combustible Liquid		Flammable Material		Pyrophoric Material		Explosive Material	
Unstable Material		Water Reactive Material		Oxidizer		Organic Peroxide	
Corrosive Material		Compressed Gas		Irritant		Nuisance Particulate	X
Skin Hazard		Eye Hazard		Toxic Agent		Highly Toxic Agent	
Sensitizer		Carcinogen		Reproductive Toxin		Blood Toxin	
Nervous System Toxin		Lung Toxin		Liver Toxin		Kidney Toxin	

Community Right-to-Know (SARA Title III Section 311-312)

Fire: Sudden Release Of Pressure: Reactivity: Immediate (Acute): X Delayed (Chronic):

III. PHYSICAL DATA:

Boiling Point (F):	NA	Vapor Pressure (mmHg):	NA	pH: 4-6 1%SOL)	
Melting Point(F):	NA	Vapor Density (Air=1):	NA	Specific Gravity: 1.5-1.8	
Freezing Point(F):	NA	Solubility In Water:	INSOLUBLE	Percent Volatile By Volume (%): NA	
Odor Threshold:	ND	Appearance And Odor:	BROWN, EARTHY	Evaporation Rate (_____=1): NA	
Material Is:	PURE POWDER	Coefficient of Water/Oil Distribution:	INSOLUBLE IN OIL		

IV. FIRE & EXPLOSION HAZARD DATA:

Flashpoint (F): 310 (PMCC) Auto Ignition Temperature (F): NA Explosive Limit - Lower: NA Upper: NA
Extinguishing Media: Water: X CO2: X Dry Chemical: X Foam: X Fog:: X

Hazardous Combustion Products:
UPON COMBUSTION, OXIDES OF CARBON MAY FORM PRODUCING TOXIC FUMES.
Fire Fighting Procedures:
IN CASE OF FIRE, GENTLY FLOOD WITH WATER USING CARE NOT TO SUSPEND DUSTS. SELF-CONTAINED BREATHING APPARATUS MAY BE NEEDED IN ENCLOSED AREAS DURING A FIRE.
Unusual Fire and Explosion Hazards:
PRODUCT MAY FORM EXPLOSIVE DUST-AIR MIXTURES AT VERY HIGH DUST CONCENTRATIONS.

V. REACTIVITY DATA:

Chemically Stable: Yes: X No: If no, Under Which Conditions? NONE REPORTED.

Incompatibility (Materials to Avoid): STRONG OXIDIZING AGENTS. ACTS AS AN ORGANIC REDUCING AGENT

Hazardous Decomposition on Byproducts: PRODUCT WILL NOT READILY DECOMPOSE.

Hazardous Polymerization May Occur: Will Not Occur: X Conditions to Avoid: NA

ND - Not Determined NA - Not Applicable T - Total Dust R - Respirable Fraction C - Ceiling Limit

I. HEALTH HAZARD INFORMATION:

rimary Exposure Route:	Skin Contact:	Skin Absorption:	Eye Contact: X	Inhalation: X		Ingestion:
roduct Carcinogenicity -	NTP: NO	IARC: NO				

cute Effects of Overexposure:
IAY CAUSE MECHANICAL IRRITATION TO THE EYES, SKIN AND UPPER RESPIRATORY TRACT. INGESTION MAY AUSE STOMACH UPSET, NAUSEA, VOMITING OR DIARRHEA.

hronic Effects of Overexposure:
NPROTECTED PROLONGED INHALATION OF DUST CONTAINING CRYSTALLINE SILICA MAY CAUSE PERMANENT UNG AND LIVER INJURY. LIMITED EVIDENCE (IARC) SHOWS THAT THE INHALATION OF CRYSTALLINE SILICA AUSES CANCER IN HUMANS.

II. EMERGENCY AND FIRST AID INSTRUCTIONS:

yes:	HOLD EYELIDS APART AND FLUSH WITH CLEAN WATER FOR AT LEAST FIFTEEN MINUTES. CONTACT A PHYSICIAN IF IRRITATION PERSISTS.
kin:	WASH THOROUGHLY WITH MILD SOAP AND WATER. APPLY MEDICATED DREAMS TO RELIEVE IRRITATION AND REPLENISH SKIN OILS.
ngestion:	GIVE FLUIDS TO RINSE MOUTH AND THROAT IRRITATION AND TO DILUTE. CONSULT A PHYSICIAN IF ADVERSE SYMPTOMS DEVELOP.
nhalation:	REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

VIII. ENVIRONMENTAL PROTECTION PROCEDURES:

pill Response:
WEAR PROPER PROTECTIVE EQUIPMENT (SECTION IX). RECOVER SPILLED MATERIAL TO THE ORIGINAL CONTAINER FOR SALE IF POSSIBLE. SHOVEL WASTE INTO A SUITABLE WASTE CONTAINER. MINIMIZE DUSTING DURING CLEANUP. FLUSH RESIDUE WITH WATER.
Waste Disposal Method:
PRODUCT IS NOT HAZARDOUS ACCORDING TO RCRA CRITERIA OR LISTING AS SUPPLIED. DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
Handling:
CAUTION! MAY CAUSE MECHANICAL IRRITATION TO EYES, SKIN AND UPPER RESPIRATORY TRACT. AVOID UNNECESSARY CONTACT AND HIGH DUST CONCENTRATIONS.
Storage:
STORE IN A DRY AREA. KEEP DUSTS TO A MINIMUM. KEEP CONTAINERS CLOSED WHEN NOT IN USE. USE WITH ADEQUATE VENTILATION.

IX. OCCUPATIONAL CONTROL MEASURES:

Respiratory Protection:	WEAR AN APPROVED PARTICULATE RESPIRATOR IF NEEDED.
Ventilation:	SUPPLY MECHANICAL EXHAUST TO INSURE SAFE EXPOSURES TO PARTICULATE DUSTS.
Clothing:	WEAR LONG PROTECTIVE CLOTHING WITH AN APRON FOR ADDED PROTECTION.
Eyewear:	WEAR SAFETY GLASSES WITH SIDEGUARDS OR GOGGLES DURING USE.
Gloves:	WEAR GLOVES TO PREVENT MECHANICAL IRRITATION.
Footwear:	WEAR NORMAL SAFETY BOOTS

X. ADDITIONAL INFORMATION:

Prepared By: Jim Rushing Date Prepared: 03/05/94 Supercedes Issue Date: 05/01/91

ND - Not Determined NA - Not Applicable > - Greater Than < - Less Than C- Ceiling Limit

METHANOL

PROFILE #15

AIR PRODUCT & CHEMICALS -- METHANOL - METHANOL,TECHNICAL
MATERIAL SAFETY DATA SHEET
FSC: 6810
NIIN: 002756010
Manufacturer's CAGE: 00742
Part No. Indicator: A
Part Number/Trade Name: METHANOL

General Information

Item Name: METHANOL,TECHNICAL
Company's Name: AIR PRODUCT AND CHEMICALS,INC
Company's Street: 7201 HAMILTON BLVD
Company's City: ALLENTOWN
Company's State: PA
Company's Country: US
Company's Zip Code: 18195-1501
Record No. For Safety Entry: 003
Tot Safety Entries This Stk#: 026
Date MSDS Prepared: 01JAN87
Safety Data Review Date: 07JUL86
Supply Item Manager: CX
MSDS Serial Number: BDSGQ
Specification Number: O-M-232
Hazard Characteristic Code: F3
Unit Of Issue: CN
Unit Of Issue Container Qty: 5.0 GL
Type Of Container: CAN

Ingredients/Identity Information

Proprietary: NO
Ingredient: METHYL ALCOHOL (METHANOL) (SARA III)
Ingredient Sequence Number: 01
Percent: 99.8
NIOSH (RTECS) Number: PC1400000
CAS Number: 67-56-1
OSHA PEL: S,200PPM/250STEL
ACGIH TLV: S,200PPM/250STEL; 93

Physical/Chemical Characteristics

Appearance And Odor: CLEAR,COLORLESS,FLAMMABLE,MOBILE,HIGHLY POLAR LIQ.
Boiling Point: 148.5/64.7C
Vapor Pressure (MM Hg/70 F): 100
Vapor Density (Air=1): 1.11
Specific Gravity: 0.590
Evaporation Rate And Ref: 12 (BUT ACETAT=1)
Solubility In Water: MISCIBLE
Percent Volatiles By Volume: 100
Autoignition Temperature: 725F

Fire and Explosion Hazard Data

Flash Point: 53.6/12C (C.C.)
Lower Explosive Limit: 6.7
Upper Explosive Limit: 36.0
Extinguishing Media: CO*2,DRY CHEMICAL,WATER FOG
Special Fire Fighting Proc: USE NIOSH APPROVED SCBA WITH FULL PROTECTION FOR FIREFIGHTNG
Unusual Fire And Expl Hazrds: VAPORS ARE TOXIC,EXPLOSIVELY IGNITED WITHIN EXPLOSIVE LIMITS

Reactivity Data

Stability: YES
Cond To Avoid (Stability): SPARKS,FLAMES

Materials To Avoid: STRONG OXIDIZING MATERIALS,CHROMIC ANHYDRIDES,PER CHLORIC AC
Hazardous Decomp Products: FORMALDEHYDE,CO,FORMIC ACID
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NONE SPECIFIED

Health Hazard Data

Signs/Symptoms Of Overexp: EYES:BURNS VISION FAILURE.SKIN:IRRITANT, DEFATTING AGENT.INHAL:IRRIT SKIN,MUCOUS,RESP SYS,HEADACHE
Emergency/First Aid Proc: INHALE:REMOVE TO FRESH AIR, GIVE CPR/O*2 IF NEED;EYES/SKIN:FLUSH W LG AMTS H*2O FOR 15 MIN;INGEST:RINSE MOUTH; GET MEDICAL ATTENTION FOR EYES, BREATHING DIFFICULTY, OR OTHER SYMPTOMS OF OVEREXPOSURE.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: USE PERSONAL PROTECTIVE EQUIPMENT.ELIMINATE SOURCE OF IGNITION.COVER THE MATERIAL WITH ALCOHOL FOAM.PUMP LIQUID INTO DRUM.FOR INFO,NOTIFY THE AUTHORITIES IF NECESSARY.
Waste Disposal Method: CONSULT LOCAL AUTHORITIES.INCINERATION OR DISPOSAL MUST BE IN ACCORDANCE WITH LOCAL,STATE AND FEDERAL REGULATIONS.
Precautions-Handling/Storing: USE PERSONAL PROTECTION.STORE IN COOL, DRY & WELL VENTILATED AREA.TREAT AS CLASSI HAZARD AREA IN DESIGN OF ELECTRICAL EQUIPMENT.
Other Precautions: DO NOT SMOKE.AVOID CONTACT WITH EYES AND SKIN.DO NOT BREATHE VAPORS OR SWALLOW THE LIQUID.

Control Measures

Respiratory Protection: USE NIOSH APPROVED RESPIRATOR FOR METHANOL OR SCBA.
Ventilation: PROVIDE MECHAN(GEN/LOCAL EXHAUST)VENT TO MAINTN <TLV
Protective Gloves: PV/RUBBER
Eye Protection: GOGGLES/FACE SHIELD
Other Protective Equipment: FULL PROTECTIVE CLOTHING,SAFETY SHOWER,EYE WASH STATION
Suppl. Safety & Health Data: MAY 1,1985 IS DATED ON MSDS.

Transportation Data

Transportation Action Code: C
Trans Data Review Date: 95338
DOT PSN Code: JEZ
DOT Proper Shipping Name: METHANOL, OR METHYL ALCOHOL *
DOT Class: 3 *
DOT ID Number: UN1230 *
DOT Pack Group: II *
DOT Label: FLAMMABLE LIQUID, POISON *
IMO PSN Code: JPB
IMO Proper Shipping Name: METHANOL *
IMO Regulations Page Number: 3251 *
IMO UN Number: 1230 *
IMO UN Class: 3.2 *
IMO Subsidiary Risk Label: TOXIC *
IATA PSN Code: QHQ
IATA UN ID Number: 1230 *
IATA Proper Shipping Name: METHANOL *
IATA UN Class: 3 *
IATA Subsidiary Risk Class: 6.1 *
IATA Label: FLAMMABLE LIQUID & TOXIC *
AFI PSN Code: QHQ
AFI Prop. Shipping Name: METHANOL OR METHYL ALCOHOL *
AFI Class: 3 *
AFI ID Number: UN1230 *
AFI Pack Group: II *
AFI Label: FLAMMABLE LIQUID, POISON *
AFI Basic Pac Ref: A7.3 *

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Disposal Data

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Disposal Data Review Date: 88231
Rec # For This Disp Entry: 01
Tot Disp Entries Per NSN: 012
Landfill Ban Item: YES
Disposal Supplemental Data: MAY 1,1985 IS DATED ON MSDS. IN CASE OF ACCIDENTAL EXPOSURE OR DISCHARGE, CONSULT HEALTH AND SAFETY FILE FOR PRECAUTIONS.
1st EPA Haz Wst Code New: U154
1st EPA Haz Wst Name New: METHANOL; METHYL ALCOHOL
1st EPA Haz Wst Char New: IGNITABLE (I)
1st EPA Acute Hazard New: NO

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Label Data

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Label Required: YES
Label Status: F
Special Hazard Precautions: POISONOUS; MAY BE FATAL IF INHALED, SWALLOWED OR ABSORBED THROUGH SKIN. CONTACT MAY CAUSE BURNS TO SKIN AND EYES. RUNOFF FROM FIRE CONTROL OR DILUTION WATER MAY CAUSE POLLUTION.
Label Name: AIR PRODUCTS AND CHEMICALS INC.
Label Street: 7201 HAMILTON BLVD
Label City: ALLENTOWN
Label State: PA
Label Zip Code: 18195-1501
Label Country: US

==========

URL for this msds http://hazard.com. If you wish to change, add to, or delete information in this archive please sent updates to dan@hazard.com.

ETHYLENE GLYCOL

PROFILE #16

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

MALLINCKRODT J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

ETHYLENE GLYCOL

MSDS Number: E5125 --- *Effective Date: 02/25/99*

1. Product Identification

Synonyms: 1,2-Ethanediol; glycol; 1,2-Dihydroxyethane; Ethylene Alcohol; Ethulene Dihydrate
CAS No.: 107-21-1
Molecular Weight: 62.07
Chemical Formula: CH2OHCH2OH
Product Codes:
J.T. Baker: 5387, 5574, 5845, 9140, 9298, 9300, 9346, 9349, 9356, L715
Mallinckrodt: 5001, 5037

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Ethylene Glycol	107-21-1	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

AFFECTS CENTRAL NERVOUS SYSTEM.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate
Flammability Rating: 1 - Slight
Reactivity Rating: 1 - Slight
Contact Rating: 2 - Moderate
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
Vapor inhalation is generally not a problem unless heated or misted. Exposure to vapors over an extended time period has caused throat irritation and headache. May cause nausea, vomiting, dizziness and drowsiness. Pulmonary edema and central nervous system depression may also develop. When heated or misted, has produced rapid, involuntary eye movement and coma.

Ingestion:
Initial symptoms in massive dosage parallel alcohol intoxication, progressing to CNS depression, vomiting, headache, rapid respiratory and heart rate, lowered blood pressure, stupor, collapse, and unconsciousness with convulsions. Death from respiratory arrest or cardiovascular collapse may follow. Lethal dose in humans: 100 ml (3-4 ounces).

Skin Contact:
Minor skin irritation and penetration may occur.

Eye Contact:
Splashes may cause irritation, pain, eye damage.

Chronic Exposure:
Repeated small exposures by any route can cause severe kidney problems. Brain damage may also occur. Skin allergy can develop. May damage the developing fetus.

Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders, eye problems, or impaired liver, kidney, or respiratory function may be more susceptible to the effects of this substance.

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4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:
Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes.

Get medical attention if irritation develops or persists.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician:
Give sodium bicarbonate intravenously to treat acidosis. Urinalysis may show low specific gravity, proteinuria, pyuria, cylindruria, hematuria, calcium oxide, and hippuric acid crystals. Ethanol can be used in antidotal treatment but monitor blood glucose when administering ethanol because it can cause hypoglycemia. Consider infusion of a diuretic such as mannitol to help prevent or control brain edema and hemodialysis to remove ethylene glycol from circulation.

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5. Fire Fighting Measures

Fire:
Flash point: 111C (232F) CC
Autoignition temperature: 398C (748F)
Flammable limits in air % by volume:
lel: 3.2; uel: 15.3
Slight to moderate fire hazard when exposed to heat or flame.
Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Containers may explode when involved in a fire.
Fire Extinguishing Media:
Dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Water spray may be used to extinguish surrounding fire and cool exposed containers. Water spray will also reduce fume and irritant gases.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Toxic gases and vapors may be released if involved in a fire.

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6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

---

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Separate from acids and oxidizing materials. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

---

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-OSHA Permissible Exposure Limit (PEL):
50 ppm Ceiling

-ACGIH Threshold Limit Value (TLV):
50 ppm Ceiling (vapor)
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a half-face respirator with an organic vapor cartridge and particulate filter (NIOSH type P95 or R95 filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and particulate filter (NIOSH P100 or R100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. Please note that N series filters are not recommended for this material. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear protective gloves and clean body-covering clothing.
Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

---

9. Physical and Chemical Properties

Appearance:
Clear oily liquid.
Odor:

Odorless.
Solubility:
Miscible in water.
Specific Gravity:
1.1 @20C/4C
pH:
No information found.
% Volatiles by volume @ 21C (70F):
100
Boiling Point:
197.6C (388F)
Melting Point:
-13C (9F)
Vapor Density (Air=1):
2.14
Vapor Pressure (mm Hg):
0.06 @ 20C (68F)
Evaporation Rate (BuAc=1):
No information found.

---

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition. May produce acrid smoke and irritating fumes when heated to decomposition.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Strong oxidizing agents. Reacts violently with chlorosulfonic acid, oleum, sulfuric acid, perchloric acid. Causes ignition at room temperature with chromium trioxide, potassium permanganate and sodium peroxide; causes ignition at 212F(100C) with ammonium dichromate, silver chlorate, sodium chloride and uranyl nitrate.
Conditions to Avoid:
Heat, flames, ignition sources, water (absorbs readily) and incompatibles.

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11. Toxicological Information

Toxicological Data:
Oral rat LD50: 4700 mg/kg; skin rabbit LD50: 9530 mg/kg.
Irritation - skin rabbit: 555mg(open), mild; eye rabbit: 500mg/24H, mild.
Investigated as a tumorigen, mutagen, reproductive effector.
Reproductive Toxicity:
Has shown teratogenic effects in laboratory animals.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Ethylene Glycol (107-21-1)	No	No	None

12. Ecological Information

Environmental Fate:
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is not expected to evaporate significantly. When released into water, this material is expected to readily biodegrade. When released into the water, this material is expected to have a half-life between 1 and 10 days. This material is not expected to significantly bioaccumulate. This material has a log octanol-water partition coefficient of less than 3.0. When released into water, this material is not expected to evaporate significantly. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life between 1 and 10 days.
Environmental Toxicity:
The LC50/96-hour values for fish are over 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\----------

Ingredient	TSCA	EC	Japan	Australia
Ethylene Glycol (107-21-1)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\----------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Ethylene Glycol (107-21-1)	Yes	Yes	No	Yes

\-------\Federal, State & International Regulations - Part 1\----------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Ethylene Glycol (107-21-1)	No	No	Yes	No

\-------\Federal, State & International Regulations - Part 2\----------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Ethylene Glycol (107-21-1)	5000	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
Reactivity: No (Pure / Liquid)

Australian Hazchem Code: No information found.
Poison Schedule: No information found.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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16. Other Information

NFPA Ratings: Health: **1** Flammability: **1** Reactivity: **0**
Label Hazard Warning:
WARNING! HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.
Label Precautions:
Do not breathe vapor or mist.
Use only with adequate ventilation.
Keep container closed.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.
Label First Aid:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. Call a physician if irritation develops or persists. If swallowed, give water or milk to drink and induce vomiting. Never give anything by mouth to an unconscious person. In all cases call a physician.
Product Use:
Laboratory Reagent.
Revision Information:

MSDS Section(s) changed since last revision of document include: 8.

Disclaimer:

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Prepared by: Strategic Services Division
Phone Number: (314) 539-1600 (U.S.A.)

TRIETHYLENE GLYCOL

PROFILE #17

Please reduce your browser font size for better viewing and printing.

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

MALLINCKRODT J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

TRIETHYLENE GLYCOL

MSDS Number: T5382 --- *Effective Date: 12/08/96*

1. Product Identification

Synonyms: Ethanol, 2,2'-[1,2-ethanediylbis(oxy)]bis-; triglycol; ethylene glycol dihydroxy-diethyl ether
CAS No.: 112-27-6
Molecular Weight: 150.20
Chemical Formula: C6H14O4
Product Codes: J.T. Baker: W660 Mallinckrodt: 2735

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Triethylene Glycol	112-27-6	90 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! CAUSES EYE IRRITATION. MAY CAUSE SKIN IRRITATION.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 0 - None
Flammability Rating: 1 - Slight
Reactivity Rating: 0 - None
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
No adverse health effects expected from inhalation.

Ingestion:
No adverse effects expected.

Skin Contact:
Prolonged exposure may cause skin irritation.

Eye Contact:
Splashing in eye causes irritation with transitory disturbances of corneal epithelium. However, these effects diminish and no permanent injury is expected. Vapors are non-irritating.

Chronic Exposure:
Possible skin irritation.

Aggravation of Pre-existing Conditions:
No information found.

---

4. First Aid Measures

Inhalation:
Remove to fresh air. Not expected to require first aid measures.

Ingestion:
If large amounts were swallowed, give water to drink and get medical advice.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops..

Eye Contact:
If splash occurs, immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Call a physician.

5. Fire Fighting Measures

Fire:
Flash point: 177C (351F) CC Autoignition temperature: 371C (700F) Flammable limits in air % by volume: lel: 0.9; uel: 9.2 Slight fire hazard when exposed to heat or flame.

Explosion:
Above the flash point, explosive vapor-air mixtures may be formed.

Fire Extinguishing Media:
Water spray, dry chemical, alcohol foam, or carbon dioxide. Water or foam may cause frothing.

Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from heat, ignition sources and oxidizing agents. Protect from freezing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
None established.

Ventilation System:
Not expected to require any special ventilation.

Personal Respirators (NIOSH Approved):
Not expected to require personal respirator usage.

Skin Protection:
Wear protective gloves and clean body-covering clothing.

Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

---

9. Physical and Chemical Properties

Appearance:
Clear, colorless liquid.

Odor:
Odorless.

Solubility:
Miscible in water.

Specific Gravity:
1.1274 @ 15C/4C

pH:
No information found.

% Volatiles by volume @ 21C (70F):
100

Boiling Point:
285C (545F)

Melting Point:
-5C (23F)

Vapor Density (Air=1):
5.17

Vapor Pressure (mm Hg):
<0.01 @ 20C (68F)

Evaporation Rate (BuAc=1):
0.01

---

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Hygroscopic.

Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Strong oxidizers.

Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

---

11. Toxicological Information

Oral rat LD50: 17 gm/kg; investigated as a reproductive effector.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Triethylene Glycol (112-27-6)	No	No	None

---

12. Ecological Information

Environmental Fate:
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is not expected to evaporate significantly. When released into water, this material is expected to readily biodegrade. When released into water, this material is not expected to evaporate significantly. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life of less than 1 day.

Environmental Toxicity:
This material is expected to be slightly toxic to aquatic life. The LC50/96-hour values for fish are between 10 and 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

---

14. Transport Information

Not regulated.

---

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\---------------------------------

Ingredient	TSCA	EC	Japan	Australia
Triethylene Glycol (112-27-6)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\---------------------------------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Triethylene Glycol (112-27-6)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Triethylene Glycol (112-27-6)	No	No	No	Glycol ether

--------\Federal, State & International Regulations - Part 2\----------------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Triethylene Glycol (112-27-6)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
Reactivity: No (Pure / Liquid)

Australian Hazchem Code: No information found.
Poison Schedule: No information found.

WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products

Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

16. Other Information

NFPA Ratings: Health: 1 **Flammability:** 1 **Reactivity:** 0

Label Hazard Warning:
WARNING! CAUSES EYE IRRITATION. MAY CAUSE SKIN IRRITATION.

Label Precautions:
Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Label First Aid:
In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Call a physician.

Product Use:
Laboratory Reagent.

Revision Information:
Pure. New 16 section MSDS format, all sections have been revised.

Disclaimer:
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Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.
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Prepared by: Strategic Services Division
Phone Number: (314) 539-1600 (U.S.A.)

SODIUM BISULFITE

PROFILE #18

Please reduce your browser font size for better viewing and printing.

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

SODIUM BISULFITE

MSDS Number: S3074 --- *Effective Date: 11/17/99*

1. Product Identification

Synonyms: Sodium acid sulfite; Sulfurous acid, monosodium salt; Sodium hydrogen sulfite, solid
CAS No.: 7631-90-5
Molecular Weight: 104.06
Chemical Formula: A mixture of NaHSO3 (sodium bisulfite) and Na2S2O5 (sodium metabisulfite)
Product Codes: 3556, 3557

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Sodium Bisulfite	7631-90-5	58 - 99%	Yes
Sodium Metabisulfite	7681-57-4	1 - 42%	Yes

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE ALLERGIC RESPIRATORY REACTION. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. REACTS WITH ACIDS AND WATER RELEASING TOXIC SULFUR DIOXIDE GAS.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate
Flammability Rating: 0 - None
Reactivity Rating: 1 - Slight
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. May cause allergic reaction in sensitive individuals.
Ingestion:
May cause gastric irritation by the liberation of sulfurous acid. An asthmatic reaction may occur after ingestion. Large doses may result in nausea, vomiting, diarrhea, abdominal pains, circulatory disturbance, and central nervous system depression. Estimated fatal dose is 10 gm.
Skin Contact:
Causes irritation to skin. Symptoms include redness, itching, and pain.
Eye Contact:
Causes irritation, redness, and pain. Contact may cause irreversible eye damage. Symptoms may include stinging, tearing, redness, swelling, corneal damage and blindness.
Chronic Exposure:
No information found.
Aggravation of Pre-existing Conditions:
Some individuals are said to be dangerously sensitive to minute amounts of sulfites in foods. Symptoms may include broncho constriction, shock, gastrointestinal disturbances, angio edema, flushing, and tingling sensations. Once allergy develops, future exposures can cause asthma attacks with shortness of breath, wheezing, and cough.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.
Skin Contact:
Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard.

Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire. Do not allow water runoff to enter sewers or waterways.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

---

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. Cautiously spray residue with plenty of water, providing ventilation to clear sulfur dioxide fumes generated from water contact. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

---

7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Releases toxic sulfur dioxide gas when in contact with water, ice. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

---

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-ACGIH Threshold Limit Value (TLV):
5mg/m3 (TWA) for sodium bisulfite & for sodium metabisulfite, A4 Not classifiable as a human carcinogen.
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a half-face respirator with an acid gas cartridge may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an acid gas cartridge may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Coarse white granules.
Odor:
Slight odor of sulfur dioxide.
Solubility:
Very soluble in water, insoluble in alcohol.
Specific Gravity:
1.48
pH:
No information found.
% Volatiles by volume @ 21C (70F):
No information found.
Boiling Point:
Not applicable.
Melting Point:
150C (302F)
Vapor Density (Air=1):
No information found.
Vapor Pressure (mm Hg):
No information found.
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Strength diminishes somewhat with age. Gradually decomposes in air to sulfate, generating sulfurous acid gas. Contact with moisture (water, wet ice, etc.), will release toxic sulfur dioxide gas.
Hazardous Decomposition Products:
Burning may produce sulfur oxides.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Water, acids, alkalis, sodium nitrite, oxidizers, aluminum powder.
Conditions to Avoid:
Moisture, heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Sodium Metabisulfite [7681-57-4]: No LD50/LC50 information found relating to normal routes of occupational exposure. Investigated as a tumorigen, mutagen and reproductive effector. Sodium Bisulfite [7631-90-5]: Oral rat LD50: 2000 mg/kg. Investigated as a tumorigen and mutagen.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Sodium Bisulfite (7631-90-5)	No	No	3
Sodium Metabisulfite (7681-57-4)	No	No	3

12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\----------

Ingredient	TSCA	EC	Japan	Australia
Sodium Bisulfite (7631-90-5)	Yes	Yes	Yes	Yes
Sodium Metabisulfite (7681-57-4)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\----------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Sodium Bisulfite (7631-90-5)	Yes	Yes	No	Yes
Sodium Metabisulfite (7681-57-4)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.

Sodium Bisulfite (7631-90-5)	No	No	No	No
Sodium Metabisulfite (7681-57-4)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\----------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Sodium Bisulfite (7631-90-5)	5000	No	Yes
Sodium Metabisulfite (7681-57-4)	No	No	Yes

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
Reactivity: No (Mixture / Solid)

Australian Hazchem Code: No information found.
Poison Schedule: No information found.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

16. Other Information

NFPA Ratings: Health: **1** Flammability: **0** Reactivity: **1**
Label Hazard Warning:
WARNING! HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE ALLERGIC RESPIRATORY REACTION. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. REACTS WITH ACIDS AND WATER RELEASING TOXIC SULFUR DIOXIDE GAS.
Label Precautions:
Avoid breathing dust.
Avoid contact with eyes, skin and clothing.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
For Reagent and Technical Grades: Not For Food Use.For TAC Grades: Do not use in meats or in foods recognized as a source of Vitamin B-1, nor in fruits or vegetables to be served or sold raw to consumers or to be presented to consumers as fresh.
Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, wipe off excess material from skin then immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.
Product Use:
Laboratory Reagent.
Revision Information:
No changes.
Disclaimer:
****

Mallinckrodt Baker, Inc. provides the information contained herein in good faith but

makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

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Prepared by: Strategic Services Division
Phone Number: (314) 539-1600 (U.S.A.)

OSW3055

CAUTION CODE 2-1-0

MSDS ID: 6205503

1 - SECTION I - IDENTITY

BAKER PETROLITE CORPORATION
A Baker Hughes company
12645 W. AIRPORT BOULEVARD
SUGAR LAND, TX 77478

EMERGENCY TELEPHONE NUMBERS:
CHEMTREC: 1-800-424-9300
BPC: 1-800-231-3606
TELEPHONE NUMBER FOR INFORMATION:
281-276-5400

CHEMICAL NAME: Chemical Identity Is A Trade Secret

CHEMICAL FAMILY: Proprietary

2 - SECTION II - REGULATORY CLASSIFICATION

ENVIRONMENTAL	OCCUPATIONAL	TRANSPORTATION
RQ= 1257 Gallons (Sodium Bisulfite)	OSHA Non-Hazardous: No	Not Regulated: Yes
TPQ= None	OSHA Hazardous: Yes	Regulated: No
SARA S313: No	X Acute	
	NA Chronic	
	NA Fire	
	NA Pressure	
	NA Reactive	

The components of this product are listed on the TSCA inventory.

3 - SECTION III - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENT	CAS #	PEL(OSHA)* TWA	PEL(OSHA)* STEL	PEL(OSHA)* A/L	TLV(ACGIH)* TWA	TLV(ACGIH)* STEL	MFG* REC, TWA
Sodium bisulfite (<37%)	7631-90-5	5mg/m3			5mg/m3		

*ppm unless otherwise indicated; (C) denotes ceiling limit; (S) or (Skin) indicates that skin absorption may make a significant contribution to overall exposure.

4 - SECTION IV - PHYSICAL & CHEMICAL PROPERTIES

Specific Gravity @60F: 1.29 (H2O=1)

pH:
5% of Product: 3.0 - 5.0

Density (lbs/gallon): 10.75

Viscosity (Method): Not Determined

Vapor Density (Air=1): > 1

Appearance and Odor: Pinkish liquid with sulfur odor

Solubility: Complete

Stability: Stable

Freezing Point: Not Determined

Pour Point: Not Determined

Flash Point (Method): None

Percent Organic Compounds: Proprietary

Boiling Point: Not Determined

Vapor Pressure: 17.5 mmHg @ 70F

Conditions to Avoid: Concentration of liquid by evaporation/ loss of water. Do not use mild steel, aluminum, or zinc composition materials for handling, storage, or transportation.

OSW3055

CAUTION CODE 2-1-0

MSDS ID: 6205503

4 - SECTION IV - PHYSICAL & CHEMICAL PROPERTIES (continued)

Haz. Decomp. Prod: When heated to decomposition, may emit sulfur dioxide fume

Hazardous Polymerization: Not expected to occur

FIRE CONTROL PROCEDURES: Extinguishing media: Not Applicable
Do not enter a fire area without proper protective equipment, including NIOSH/MSHA approved, self-contained breathing apparatus. Cool exposed containers with water spray/fog. Fight fire from safe distance/protected location. Notify authorities if liquid enters sewer/public waters.

FIRE HAZARDS:
No unusual fire hazards; material is not flammable and/or combustible.

5 - SECTION V - HEALTH HAZARDS

EFFECTS OF EXPOSURE:
INHALATION: Prolonged or excessive inhalation may cause respiratory tract irritation.
EYE CONTACT: Heavy exposure may cause irritation of the eyes.
SKIN CONTACT: Prolonged or repeated exposure may cause skin irritation.
INGESTION: Substance may be harmful if swallowed.
SKIN ABSORPTION: Not expected to be absorbed through the skin under normal conditions.

OTHER INFORMATION:

Sodium bisulfite (CAS No 7631-90-5), a component of this product has been reported to cause allergic reactions in humans. Both skin and respiratory allergic reactions have been reported. (HSDB, HAZARDTEXT)

There is inadequate evidence for the carcinogenicity of bisulfites in experimental animals. Overall evaluation: Bisulfites are not classifible as to their carcinogenicity to humans [International Agency for Research on Cancer (IARC) Group 3)]. Sodium bisulfite has cause mutations in some in vivo and in vitro assays. (HSDB)

ACUTE ANIMAL TOXICITY DATA
Orl - Rat - LD50 = 2000 mg/kg (HSDB)
Ipr - Rat - LD50 = 115 mg/kg (HSDB)
Ivn - Rbt - LD50 = 65 mg/kg (RTECS)

TARGET ORGANS (29 CFR 1910.1200-APPENDIX A):

Eye Hazard
Cutaneous Hazard (Skin)

6 - SECTION VI - EMERGENCY & FIRST AID PROCEDURES

EYE CONTACT: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. If irritation or adverse symptoms develop, seek medical attention.
INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.
SKIN CONTACT: Remove all contaminated clothing, flush skin with water for 10 minutes. Afterwards, wash the affected area with soap and water and then rinse.

OSW3055

CAUTION CODE 2-1-0

MSDS ID: 6205503

6 - SECTION VI - EMERGENCY & FIRST AID PROCEDURES (continued)

INGESTION: Do not induce vomiting. Give milk or water. Get immediate medical attention. Careful evacuation of the stomach by medical personnel is imperative.

7 - SECTION VII - PROTECTIVE EQUIPMENT RECOMMENDATIONS

VENTILATION: The use of mechanical ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperatures, or is agitated. Where engineering controls are not feasible, assure use is in an area where there is natural air movement.

Under normal operating conditions, no excursions above the regulated (recommended) exposure levels should occur. However, if used at elevated temperatures (fire), lower atmospheric pressure (high altitudes) or any other physical conditions that may increase the inhalation exposure, respiratory protective equipment as described below, should be worn. Also, due to individual susceptibility and sensitivity, before respirators are used, a full medical evaluation should be performed per 29 CFR 1910.134(b)(10).

RESPIRATORY	CHEMICAL RESISTANT APPAREL	EYE/FACE
X AS NEEDED:	X AS NEEDED:	X AS NEEDED:
Air Supplied (SCBA)	X Gloves - Neoprene	X Chemical Splash Goggles
X Air Purifying	Tyvek Polyethylene Suit	
X Full Face Piece	X Neoprene Boots	X Full Face Shield
Half Face Piece		
X Cartridge or Cannister		
Acid Gas		
X Organic Vapor		
Ammonia		

A thorough review of the job task (job safety analysis) by a competent safety professional should be conducted to determine the appropriate level of protection. See 29 CFR 1910, Subpart I and 29 CFR 1910.133 for further information.

8 - SECTION VIII - SPILL & LEAK PROCEDURES

Don appropriate protective clothing and respiratory protection prior to entering a spill/leak area. Eliminate ignition sources. Approach area upwind if possible. Shut off leak if it can be done safely. Dike and pump large spills into salvage containers. Soak up residue and small spills with absorbent clay, sand, or dirt and place in salvage containers. If RQ (reportable quantity) is exceeded, report to National Spill Response Office 1-800-424-8802. Also, in some jurisdictions, spills or leaks of any hazardous materials are reportable--consult local lead agencies for further information. Continue to observe precautions.

WASTE DISPOSAL METHOD(S): Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures and processes may change the classification to non-hazardous, or hazardous for reasons other than, or in addition to product characteristics. Dispose of all waste and/or containers in accordance with federal, state and local regulations.

REQUIREMENTS FOR TRANSPORTATION, HANDLING AND STORAGE: Transport, handle and

OSW3055

CAUTION CODE 2-1-0

MSDS ID: 6205503

8 - SECTION VIII - SPILL & LEAK PROCEDURES (continued)

store in accordance with OSHA Regulation 1910.106 and applicable DOT regulations.
Avoid inhalation of vapors or mists. Do not get in eyes,on skin or on clothing Keep container closed when not in use. Wear suitable protection for eyes and skin when handling. Use with adequate ventilation. Avoid contact with oxidizers. Store in well-ventilated area. Store in cool, dry area.

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Petrolite, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

By: Michele Regis Date: 9/4/96 Supercedes: 6/20/96
Regulatory Information Specialist

BARITE

PROFILE #19

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

MALLINCKRODT J.T.Baker

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

BARIUM SULFATE

MSDS Number: B0504 --- *Effective Date: 12/08/96*

1. Product Identification

Synonyms: Sulfuric acid, barium salt; barytes; blanc fixe; barite
CAS No.: 7727-43-7
Molecular Weight: 233.39
Chemical Formula: BaSO4
Product Codes: J.T. Baker: 1030, 1040 Mallinckrodt: 0991, 4518, 8821

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Barium Sulfate	7727-43-7	97 - 100%	Yes

3. Hazards Identification

Emergency Overview

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight
Flammability Rating: 0 - None
Reactivity Rating: 0 - None
Contact Rating: 0 - None
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
Not expected to be a health hazard.

Ingestion:
Not expected to be a health hazard.

Skin Contact:
No adverse effects expected.

Eye Contact:
No adverse effects expected but dust may cause mechanical irritation.

Chronic Exposure:
Long term inhalation of dust may lead to deposition in lungs in sufficient quantities to produce baritosis - a benign pneumoconiosis. This produces a radiological picture even though symptoms and abnormal signs may not be present.

Aggravation of Pre-existing Conditions:
No information found.

---

4. First Aid Measures

Inhalation:
Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:
Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

Skin Contact:
Wash exposed area with soap and water. Get medical advice if irritation develops.

Eye Contact:
Wash thoroughly with running water. Get medical advice if irritation develops.

5. Fire Fighting Measures

Fire:
Not considered to be a fire hazard.

Explosion:
Not considered to be an explosion hazard.

Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire.

Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-OSHA Permissible Exposure Limit (PEL): 15 mg/m3 total dust, 5 mg/m3 respirable dust
-ACGIH Threshold Limit Value (TLV): 10 mg/m3 total dust containing no asbestos and < 1% crystalline silica

Ventilation System:
In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should

be considered.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear protective gloves and clean body-covering clothing.

Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

---

9. Physical and Chemical Properties

Appearance:
Fine, white powder.

Odor:
Odorless.

Solubility:
Insoluble in water.

Specific Gravity:
4.5 @ 15 (59F)

pH:
5% in water is neutral to litmus.

% Volatiles by volume @ 21C (70F):
0

Boiling Point:
1600C (2912F) Decomposes.

Melting Point:
1580C (2876F)

Vapor Density (Air=1):
No information found.

Vapor Pressure (mm Hg):
No information found.

Evaporation Rate (BuAc=1):
No information found.

---

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:
Burning may produce sulfur oxides.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Aluminum, phosphorus.

Conditions to Avoid:
Dusting and incompatibles.

---

11. Toxicological Information

No LD50/LC50 information found relating to normal routes of occupational exposure.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Barium Sulfate (7727-43-7)	No	No	None

---

12. Ecological Information

Environmental Fate:
This material may bioaccumulate to some extent.

Environmental Toxicity:
No information found.

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13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\---------------------------------

Ingredient	TSCA	EC	Japan	Australia
Barium Sulfate (7727-43-7)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\---------------------------------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Barium Sulfate (7727-43-7)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Barium Sulfate (7727-43-7)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\----------------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Barium Sulfate (7727-43-7)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
Reactivity: No (Pure / Solid)

Australian Hazchem Code: No information found.
Poison Schedule: No information found.

WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products

Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 0 **Flammability:** 0 **Reactivity:** 0

Label Hazard Warning:
As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

Label Precautions:
None.

Label First Aid:
Not applicable.

Product Use:
Laboratory Reagent.

Revision Information:
Pure. New 16 section MSDS format, all sections have been revised.

Disclaimer:
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****
Prepared by: Strategic Services Division
Phone Number: (314) 539-1600 (U.S.A.)

LIGNOSULFONATE

PROFILE #20

MATERIAL SAFETY DATA SHEET
SPERSENE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME:	SPERSENE
CHEMICAL CLASS:	Lignosulfonate
APPLICATIONS:	Oil well drilling fluid additive. Dispersant
EMERGENCY TELEPHONE:	281-561-1600
SUPPLIER:	Supplied by a Business Unit of M-I L.L.C. P.O. Box 42842, Houston, Texas 77242-2842 See cover sheet for local supplier.
TELEPHONE:	281-561-1509
FAX:	281-561-7240
CONTACT PERSON:	Sam Hoskin

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME:	CAS No.:	CONTENTS :	EPA RQ:	TPQ:
Chromium (III) compounds, (as Cr)	7440-47-3	4-5 %	1 lb	
Particulates Not Otherwise Classified (PNOC)		95-96 %		

COMPOSITION COMMENTS:

The CERCLA RQ of 1 lb is the statutory RQ for the generic class "Chromium and Compounds". No reporting is required under CERCLA.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION! MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. Avoid contact with eyes, skin and clothing. Avoid breathing airborne product. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

This product is a/an brown powder. May form explosive dust-air mixtures. Slippery when wet. A nuisance dust.

ACUTE EFFECTS:

HEALTH HAZARDS, GENERAL:

Particulates may cause mechanical irritation to the eyes, nose, throat and lungs. Particulate inhalation may lead to pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma. Dermatitis and asthma may result from short contact periods. Trivalent chromium compounds have been reported to cause eczematous dermatitis.

INHALATION: May be irritating to the respiratory tract if inhaled.

INGESTION: May cause gastric distress, nausea and vomiting if ingested.

SKIN: May be irritating to the skin.

EYES: May be irritating to the eyes.

CHRONIC EFFECTS:

CARCINOGENICITY:
IARC: Not listed. OSHA: Not regulated. NTP: Not listed. (Chromium and certain chromium compounds are NTP Known Carcinogens.)

HEALTH WARNINGS:
Chromate salts are suspected human carcinogens producing tumors of the lungs, nasal cavity and paranasal sinus.

ROUTE OF ENTRY:
Inhalation. Skin and/or eye contact.

TARGET ORGANS:
Respiratory system, lungs. Skin. Eyes.

4. FIRST AID MEASURES

GENERAL: Persons seeking medical attention should carry a copy of this MSDS with them.

INHALATION: Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.

INGESTION: Drink a couple of glasses water or milk. Do NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. Get medical attention.

SKIN: Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

EYES: Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5. FIRE FIGHTING MEASURES

FLASH POINT (°F):	309	METHOD: Not noted.
AUTO IGNITION TEMP. (°F):	842	
FLAMMABILITY LIMIT - LOWER(%):	N/D	
FLAMMABILITY LIMIT - UPPER(%):	N/D	

EXTINGUISHING MEDIA:
Carbon dioxide (CO2). Dry chemicals. Foam. Water spray, fog or mist.

SPECIAL FIRE FIGHTING PROCEDURES:
Normal fire fighting techniques may be used.

UNUSUAL FIRE & EXPLOSION HAZARDS:
Dust in high concentrations may form explosive mixtures with air.

HAZARDOUS COMBUSTION PRODUCTS:
Irritating gases/vapors/fumes. Oxides of: Carbon, and Sulfur.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:
Wear proper personal protective equipment (see MSDS Section 8).

SPILL CLEAN-UP PROCEDURES:
Avoid generating and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. Do not contaminate drainage or waterways. Repackage or recycle if possible.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS:
Avoid handling causing generation of dust. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed. Provide good ventilation. Mechanical ventilation or local exhaust ventilation is required.

STORAGE PRECAUTIONS:
Store at moderate temperatures in dry, well ventilated area. Keep in original container.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

		OSHA PEL:		ACGIH TLV:		OTHER:		
INGREDIENT NAME:	**CAS No.:**	**TWA:**	**STEL:**	**TWA:**	**STEL:**	**TWA:**	**STEL:**	**UNITS:**
Chromium (III) compounds, (as Cr)	7440-47-3	0.5		0.5				mg/m3
Particulates Not Otherwise Classified (PNOC)		5		3				mg/m3 resp.dust

PROTECTIVE EQUIPMENT:

ENGINEERING CONTROLS:
Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

VENTILATION: Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.

RESPIRATORS: Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

PROTECTIVE GLOVES:
Use suitable protective gloves if risk of skin contact.

EYE PROTECTION:
Wear dust resistant safety goggles where there is danger of eye contact.

PROTECTIVE CLOTHING:
Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES:
Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE:	Powder, dust.
COLOR:	Brown.
ODOR:	Odorless or no characteristic odor.
SOLUBILITY DESCRIPTION:	Soluble in water.

DENSITY/SPECIFIC GRAVITY (g/ml):	1.2 - 1.4	TEMPERATURE (°F): 68
BULK DENSITY:	36.8 lb/ft3; 589.5 kg/m3	
VAPOR DENSITY (air=1):	N/A	
VAPOR PRESSURE:	N/A	TEMPERATURE (°F):
pH-VALUE, DILUTED SOLUTION:	4.0	CONCENTRATION (%,M): 1%

10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID:
Avoid heat.

HAZARDOUS POLYMERIZATION:
Will not polymerize.

POLYMERIZATION DESCRIPTION:
Not relevant.

MATERIALS TO AVOID:
Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS:
No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:
No toxicological data is available for this product.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:
Contact M-I Environmental Affairs for ecological information.

13. DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT:
This product, should it become a waste, may be a hazardous waste by U.S. RCRA criteria. Contact M-I's Environmental Affairs Department for more information.
Empty containers retain residues. All labeled precautions must be observed.

DISPOSAL METHODS:
Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

PRODUCT RQ: N/A

U.S. DOT:

U.S. DOT CLASS: Not regulated.

CANADIAN TRANSPORT:
TDGR CLASS: Not regulated.

SEA TRANSPORT:
IMDG CLASS: Not regulated.

AIR TRANSPORT:
ICAO CLASS: Not regulated.

15. REGULATORY INFORMATION

REGULATORY STATUS OF INGREDIENTS:

NAME:	CAS No:	TSCA:	CERCLA:	SARA 302:	SARA 313:	DSL(CAN):
Chromium (III) compounds, (as Cr)	7440-47-3	Yes	Yes	No	Yes	Yes
Particulates Not Otherwise Classified (PNOC)		N/A	N/A	N/A	N/A	N/A

US FEDERAL REGULATIONS:
WASTE CLASSIFICATION: May be a hazardous waste by RCRA criteria. Consult M-I Environmental Affairs before disposal.

REGULATORY STATUS: This Product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):

SECTION 313: The chemical(s) listed above are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization act of 1986 and 40 CFR Part 372.
SARA 311 Categories:
1: Immediate (Acute) Health Effects.
2. Delayed (Chronic) Health Effects.

The components of this product are listed on or are exempt from the following international chemical registries:

TSCA (U.S.)
DSL (Canada)

STATE REGULATIONS:
STATE REGULATORY STATUS: This product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):
Illinois Right-to-Know.
Pennsylvania Right-to-Know.
New Jersey Right-to-Know.

PROPOSITION 65: This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

CANADIAN REGULATIONS:
REGULATORY STATUS: This Material Safety Data Sheet has been prepared in compliance with the Controled Product Regulations.

Canadian WHMIS Classification: Not a Controlled Product.

16. OTHER INFORMATION

NPCA HMIS HAZARD INDEX:	* 1 Slight Hazard
FLAMMABILITY:	1 Slight Hazard
REACTIVITY:	0 Minimal Hazard
NPCA HMIS PERS. PROTECT. INDEX:	E - Safety Glasses, Gloves, Dust Respirator
USER NOTES:	N/A = Not applicable N/D = Not determined
INFORMATION SOURCES:	OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants. ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition). Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997). NTP Seventh Annual Report on Carcinogens, 1994, U.S. Department of Health and Human Services, Public Health Service. Product information provided by the commercial vendor(s).
PREPARED BY:	Sam Hoskin
REVISION No./Repl. MSDS of:	1 / February 1993
MSDS STATUS:	Approved.

DATE: July 22, 1998

BAKER HUGHES INTEQ

2001 Rankin Road
Houston, Texas 77073

MATERIAL SAFETY DATA SHEET

EMERGENCY TELEPHONE: (713) 439-8900
CHEMTREC: 1-800-424-9300

I. MANUFACTURER'S INFORMATION:

Manufacturer: BAKER HUGHES INTEQ
Product Name: **UNI-CAL**
Chemical Name: DEFLOCCULANT
Chemical Description: CHROME LIGNOSULFONATE

HMIS Hazard Rating and Key			
Health	0	Minimal	0
Flammability	2	Slight	1
Reactivity	0	Moderate	2
Personal Protection	E	Serious	3
		Severe	4

Proper Shipping Description: DRILLING FLUID COMPOUND, N.O.S.
Hazard Class: NOT REGULATED UN Number: NA Hazard Label: NA DOT Response Guide: NA
Transportation Note: NA

II. HAZARD IDENTIFICATION:

Hazardous Components:	ACGIH TLV:	OSHA PEL:	%	CAS Number:	Product RQ:
CHROMIUM (III) COMPOUND	0.5 MG/M3 T	0.5 MG/M3 T	3.4	7440-47-3	NA

Hazards Associated with Product Use

	Yes		Yes		Yes		Yes
Combustible Liquid		Flammable Material		Pyrophoric Material		Explosive Material	
Unstable Material		Water Reactive Material		Oxidizer		Organic Peroxide	
Corrosive Material		Compressed Gas		Irritant		Nuisance Particulate	X
Skin Hazard		Eye Hazard		Toxic Agent		Highly Toxic Agent	
Sensitizer		Carcinogen		Reproductive Toxin		Blood Toxin	
Nervous System Toxin		Lung Toxin		Liver Toxin		Kidney Toxin	

Community Right-to-Know (SARA Title III Section 311-312)

Fire: Sudden Release Of Pressure: Reactivity: Immediate (Acute): X Delayed (Chronic): X

III. PHYSICAL DATA:

Boiling Point (F):	NA	Vapor Pressure (mmHg):	NA	pH: 2.8 (3% SOL)	
Melting Point(F):	NA	Vapor Density (Air=1):	NA	Specific Gravity: 1.2-1.4	
Freezing Point(F):	NA	Solubility In Water:	APPRECIABLE	Percent Volatile By Volume (%)NA	
Odor Threshold:	NA	Appearance And Odor:	BROWN, ODORLESS	Evaporation Rate (_____=1): NA	
Material Is:	PURE POWDER	Coefficient of Water/Oil Distribution: INSOLUBLE IN OIL			

IV. FIRE & EXPLOSION HAZARD DATA:

Flashpoint (F): NA Auto Ignition Temperature (F): NA Explosive Limit - Lower: NA Upper: NA
Extinguishing Media: Water: X CO2: X Dry Chemical: X Foam: X Fog: X

Hazardous Combustion Products:
UPON COMBUSTION, SULFUR DIOXIDE AND AIRBORNE CHROMIUM SALTS MAY BE FORMED.
Fire Fighting Procedures:
IN CASE OF FIRE, GENTLY FLOOD WITH WATER FOG. USING CARE NOT TO SUSPEND DUSTS. USE SELF CONTAINED BREATHING APPARATUS IN ENCLOSED OR CONFINED AREAS DURING A FIRE.
Unusual Fire and Explosion Hazards:
HEAVY AIRBORNE CONCENTRATIONS MAY FORM EXPLOSIVE DUST-AIR MIXTURES.

V. REACTIVITY DATA:

Chemically Stable: Yes: X No: If no, Under Which Conditions? HIGH AIRBORNE DUST CONCENTRATIONS.

Incompatibility (Materials to Avoid): STRONG OXIDIZERS

Hazardous Decomposition on Byproducts: PRODUCT WILL NOT READILY DECOMPOSE.

Hazardous Polymerization May Occur: Will Not Occur: X Conditions to Avoid: NA

ND - Not Determined NA - Not Applicable T - Total Dust R - Respirable Fraction C - Ceiling Limit

VI. HEALTH HAZARD INFORMATION:

Primary Exposure Route:	Skin Contact: X	Skin Absorption:	Eye Contact: X	Inhalation: X	Ingestion:
Product Carcinogenicity -	NTP: NO	IARC: NO			

Acute Effects of Overexposure:
MAY CAUSE IRRITATION TO EYES, MUCOUS MEMBRANES AND RESPIRATORY TRACT. SKIN IRRITATION AND ECZEMATOUS DERMATITIS MAY OCCUR IN SENSITIVE INDIVIDUALS AFTER REPEATED OR PROLONGED CONTACT.

Chronic Effects of Overexposure:
CHROMIUM MAY BE A WEAR MUTAGEN AT HIGH DOSES. MAY INDUCE AN ASTHMATIC ATTACK IN INDIVIDUALS SENSITIVE TO SULFITES.

VII. EMERGENCY AND FIRST AID INSTRUCTIONS:

Eyes:	HOLD EYELIDS APART AND FLUSH WITH RUNNING WATER FOR AT LEAST 15 MINUTES. CONTACT A PHYSICIAN IF IRRITATION PERSISTS.
Skin:	WASH AFFECTED AREA WITH MILD SOAP AND WATER. APPLY MEDICATED CREAMS TO RELIEVE IRRITATION AND REPLENISH SKIN OILS.
Ingestion:	GIVE FLUIDS RINSE MOUTH AND THROAT AND TO DILUTE. INDUCE VOMITING IN CONSULTATION WITH A PHYSICIAN.
Inhalation:	REMOVE TO FRESH AIR IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

VIII. ENVIRONMENTAL PROTECTION PROCEDURES:

Spill Response:
WEAR PROPER PROTECTIVE EQUIPMENT (SECTION IX). RECOVER SPILLED MATERIAL TO THE ORIGINAL CONTAINER FOR SALE IF POSSIBLE OR TO A SUITABLE WASTE CONTAINER. MINIMIZE DUSTING DURING CLEANUP. FLUSH RESIDUE WITH WATER.

Waste Disposal Method:
PRODUCT IS NOT HAZARDOUS ACCORDING TO RCRA CRITERIA OR LISTING AS SUPPLIED. REDETERMINATION OF STATUS MAY BE REQUIRED AFTER USE AS PART OF DRILLING FLUID. DISPOSE OF ACCORDANCE TO LOCAL, STATE AND FEDERAL REGULATIONS DEALING WITH A WASTE PRODUCT.

Handling:
CAUTION! MAY IRRITATE EYES, SKIN AND RESPIRATORY SYSTEM. AVOID EYE AND SKIN CONTACT. AVOID BREATHING DUSTS. WEAR PROPER PROTECTIVE EQUIPMENT STATED IN THE MSDS.

Storage:
KEEP DUSTS TO A MINIMUM. KEEP CONTAINER CLOSED WHEN NOT IN USE. USE WITH ADEQUATE VENTILATION.

IX. OCCUPATIONAL CONTROL MEASURES:

Respiratory Protection:	WEAR APPROVED PARTICULATE RESPIRATORS IF EXPOSURE LIMITS MAY BE EXCEEDED.
Ventilation:	MECHANICAL OR LOCAL VENTILATION TO MINIMIZE WORKER EXPOSURE TO DUSTS.
Clothing:	WEAR LONG PROTECTIVE CLOTHING WITH AN APRON FOR ADDED PROTECTION.
Eyewear:	USE SAFETY GLASSES WITH SIDESHIELDS OR GOGGLES. INSURE A PROPER FIT.
Gloves:	WEAR NEOPRENE OR BUTYL RUBBER GLOVES FOR PROTECTION.
Footwear:	USE NORMAL SAFETY BOOTS.

X. ADDITIONAL INFORMATION:

Prepared By: Jim Rushing Date Prepared: 01/26/94 Supercedes Issue Date 05/01/91

ND - Not Determined NA - Not Applicable > - Greater Than < - Less Than C- Ceiling Limit

NAPHTHA

PROFILE #21

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT C

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	HAZARDOUS INGREDIENTS	CAS NUMBER	WT/WT%
01	Methanol	67-56-1	10-30
02	Naphthalene	91-20-3	1-5
03	Aromatic Petroleum Distillate	64741-67-9	30-60
04	Alkylbenzene sulfonic acid	68584-22-5	30-60

EXPOSURE LIMITS

ITEM	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING	COMPANY TLV-TWA	SKIN
01	200 ppm	250 ppm	200 ppm	N.E.	N.E.	YES
02	10ppm	15ppm	10ppm	N.E.	N.E.	NO
03	N.E.	N.E.	N.E.	N.E.	N.E.	NO
04	N.E.	N.E.	N.E.	N.E.	N.E.	NO

LEGEND: N.A.: Not Applicable C: Ceiling Limit
N.E.: Not Established Y : Skin absorption is significant to overall
N.D.: Not Determined N : Skin absorption is not significant

(Continued on Page 2)

PRODUCT WARRANTY, DISCLAIMER AND LIMITATION OF LIABILITY ARE FOUND ON THE LAST PAGE

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance: Liquid Odor: Moderate

SIGNIFICANT HAZARDS:

FLAMMABLE liquid and vapor. Corrosive to skin and eyes. Irritating to the respiratory tract. Contains a material which can be absorbed through the skin. Contains a material which can cause visual disturbances. Contains a material which can cause liver and kidney damage. Contains a material which can cause nervous system effects. Contains a material which may cause embryo/fetotoxicity based on animal data. Contains a material which may cause effects to the blood and/or bone marrow.

POTENTIAL HEALTH EFFECTS

EYE CONTACT: Corrosive to the eyes! Direct contact with eyes will cause severe irritation and may lead to burns and permanent eye damage. Mists and vapors may cause moderate to severe eye irritation.

SKIN CONTACT: A component(s) of this product can be absorbed through the skin upon direct contact, possibly resulting in toxic effects similar to those of inhalation. Contact with skin can produce severe irritation or burns with possible in-depth injury.

INHALATION: Inhalation may cause intense irritation to the respiratory tract (nose, mouth, mucous membranes). Inhalation of high concentrations may cause headache, nausea, giddiness and shortness of breath. Prolonged, repeated, or high exposures to the vapor of a component(s) of this product may cause visual disturbances and eye damage.

INGESTION: Harmful if swallowed. May be readily absorbed through the gastrointestinal tract. Corrosive! May cause severe irritation or burns to the mouth and the gastrointestinal tract. In extreme cases may cause liver and kidney damage. Effects of ingestion are similar to those of inhalation.

CHRONIC EFFECTS: Ingestion or inhalation of high concentrations of a component(s) of this product may result in visual disturbances. In extrem cases, may cause temporary or permanent blindness, metabollic acidosis, anc central nervous system depression which can possibly lead to death. A component(s) of this product may cause kidney and liver damage upon prolonged and repeated overexposures. A component(s) of this product has been associated with hemolitic anemia and fetal toxicity at high doses. Studies have shown that inhalation of a component in this product has produced teratogenic effects in laboratory animals. Animal studies have shown that a component(s) of this product is associated with adverse effects of embryo/fetotoxicity at non-maternally toxic dosage levels.

CARCINOGENICITY: No Information.

(Continued on Page 3)

SECTION 4 - FIRST AID MEASURES

FIRST AID PROCEDURES

EYES: If material gets into eyes, flush with water immediately for 15 minutes. Consult a physician.

SKIN: In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. If rash, irritation or burns develop, consult a physician. Launder clothing before reuse.

INHALATION: If inhaled, remove to fresh air. Administer oxygen if necessary. Consult a physician if symptoms persist or exposure was severe.

INGESTION: If swallowed do not induce vomiting. Seek immediate medical attention.

NOTE TO PHYSICIAN: No Information.

SECTION 5 - FIRE-FIGHTING MEASURES

Flashpoint and Method: 20 C (68 F) TCC ASTM D-56

Autoignition Temperature: N.D.

Flammable Limits: LEL: N.A. UEL: N.A.

HAZARDOUS COMBUSTION PRODUCTS: Oxides of sulfur. Carbon monoxide. Carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Flammable liquid. Vapors can form an ignitable mixture with air. Vapors can flow along surfaces to a distant ignition source and flash back.

EXTINGUISHING MEDIA: Alcohol Foam, CO2, Dry Chemical, Foam, Water Fog

FIRE-FIGHTING INTRUCTIONS: Use a self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive pressure mode. Flammable. Cool fire-exposed containers using water spray.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

LEAKS OR SPILLS: Use personal protective equipment as necessary. Absorb with suitable chemical absorbent. Dispose of material in accordance with all federal, state and local regulations. Neutralize residues with lime, soda ash or dilute caustic. Do not attempt to neutralize large quantities of material unless measures to control reactivity and heat generation have

(Continued on Page 4)

SECTION 6 - ACCIDENTAL RELEASE MEASURES

been taken. Dike to prevent entering any sewer or waterway. Transfer liquid to a holding container.

OTHER: No Information.

Refer to Section 15 for regulatory reporting requirements in the event of an accidental release.

SECTION 7 - HANDLING AND STORAGE

HANDLING AND STORAGE: Flammable liquid. Avoid heat, sparks and open flames. Avoid breathing vapor and contact with eyes, skin and clothing. Keep container closed when not in use. Chemical residue may remain in emptied container. Do not reuse empty containers without commercial cleaning or reconditioning. Use in well ventilated area.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: General ventilation should be provided to maintain ambient concentrations below nuisance levels. Local ventilation of emission sources may be necessary to maintain ambient concentrations below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT (PPE): Chemical-resistant gloves and chemical goggles, face-shield and synthetic apron or coveralls should be used to prevent contact with eyes, skin or clothing. Safety shower and eyewash station should be located in immediate work area.

RESPIRATORY PROTECTION: If concentrations exceed the exposure limits specified, use of a NIOSH-approved supplied air respirator is recommended. Where the protection factor is exceeded, use of a Self Contained Breathing Apparatus (SCBA) may be necessary.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Solubility in Water:	Insoluble
pH @ 5.0% in in IPA/water:	3.0 - 4.0
Density @77F (25C):	7.76 LB/GA
Evaporation Rate:	Is slower than Ether
Boiling Range ASTM D-86:	N.D.
Vapor Density:	Is heavier than air
Vapor Pressure:	2.0000 psia@100F (38C)
Physical State:	Liquid

OTHER: No Information.

(Continued on Page 5)

SECTION 10 - STABILITY AND REACTIVITY

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID: Keep away from strong oxidizing agents, heat and open flames. Contains a strong mineral acid which is highly reactive with metals, metal oxides, hydroxides, amines, carbonate or other alkaline materials. May react with organic chemicals. This material is highly corrosive and may react with metals to produce flammable hydrogen gas.

HAZARDOUS DECOMPOSITION PRODUCTS: No Information.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

SECTION 11 - TOXICOLOGICAL INFORMATION

PRODUCT TOXICOLOGICAL INFORMATION

LC50 Inhalation	LD50 Dermal	LD50 Oral	Eye Irritation Score	Skin Irritation Score

OTHER: No Information.

COMPONENT TOXICOLOGICAL INFORMATION:

COMPONENT	LD50 Dermal	LD50 Oral	LC50 Inhal
Methanol	15800 mg/kg-RB	5628 mg/kg-R	64000 ppm/4H-R
Naphthalene	>20 gm/kg-R	490 mg/kg-R	N.D.
Aromatic Petroleum Dist	N.D.	N.D.	N.D.
Alkylbenzene sulfonic a	N.D.	N.D.	N.D.

LEGEND: R = Rat
RB = Rabbit
M = Mouse
GP = Guinea Pig

SKIN AND EYE SCORE: 1 = No Effect / Slight Irritant
2 = Moderate Irritant
3 = Strong Irritant
4 = Skin: Extreme Irritant;
Eye: Extreme Irritant/Corrosive

(Continued on Page 6)

SECTION 12 - ECOLOGICAL INFORMATION

An ECOTOX (R) Report is currently unavailable for this product. Please contact Baker Petrolite Corporation if ecological information is required.

OTHER: No Information.

SECTION 13 - DISPOSAL INFORMATION

DISPOSAL INFORMATION: Responsibility for proper waste disposal rests with the generator of the waste. Dispose of any waste material in accordance with applicable regulations. Note that these regulations may also apply to empty containers, liners, and rinsate. Processing, use, dilution, or contamination or this product may cause its physical and chemical properties to change.

SECTION 14 - TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (D.O.T.) INFORMATION:

Proper Shipping Name: Flammable liquid, corrosive, n.o.s. (contains methanol and dodecylbenzenesulfonic acid) 3 8 UN2924 II

D.O.T. Emergency Response Guide: 132 Marine Pollutant: N.A.

INTERNATIONAL MARITIME ORGANIZATION (I.M.O.) INFORMATION:

Proper Shipping Name: Flammable liquid, corrosive, n.o.s. (contains methanol and dodecylbenzenesulfonic acid) 3.2 UN2924 II 8

IMDG Code Page: N.A. EMS Number: N.A.

MFAG Table Number 1: N.A. MFAG Table Number 2: N.A.

Marine Pollutant: N.A.

OTHER: No Information.

(Continued on Page 7)

SECTION 15 - REGULATORY INFORMATION

CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES:
The Baker Petrolite product contains the following components that are subject to the release reporting requirements of the Comprehensive Environmental Response, Compensation, and Liability Act. Also listed is the Reportable Quantity (RQ) in pounds for each such component, and the amount of product, in gallons, that must be released or spilled in order to exceed the RQ.

CHEMICAL NAME	CAS NUMBER	RQ lbs.	RQ, gal
Methanol	67-56-1	5,000	6,443
Naphthalene	91-20-3	100	322
Sulfuric acid	7664-93-9	1,000	16,108

SARA TITLE III:
This Baker Petrolite product contains the following components that are identified as extremely hazardous substances by the Superfund Amendments and Reauthorization Act. Also listed is the Reportable Quantity (RQ) in pounds for each such component, and the amount of product, in gallons, that must be released or spilled in order to exceed the RQ; and the Threshold Planning Quantity (TPQ) in pounds for each such component, and the amount of product in gallons that contains the TPQ.

CHEMICAL NAME	CAS NUMBER	RQ lbs	RQ,gal	TPQ#	TPQ
Sulfuric acid	7664-93-9	1000	16,108	1,000	16,

SARA 311/312:
Baker Petrolite has determined that under Sections 311/312 of SARA Title III, the following hazard categories apply to this product:

HAZARD: IMMEDIATE HEALTH, CHRONIC HEALTH, FIRE

SARA SECTION 313:
This Baker Petrolite product contains the following components that are subject to the annual toxic release inventory reporting requirements of Section 313 of SARA Title III. Also listed is the concentration of the component, in weight percent, in the product, A component is not listed if its concentration is less than the de minimis level.

Chemical Name	CAS Number	WT/WT%
Methanol	67-56-1	10.0
Naphthalene	91-20-3	4.0

TOXIC SUBSTANCES CONTROL ACT (TSCA):
This product or its components, if a mixture, are listed on the TSCA inventory.

(Continued on Page 8)

SECTION 15 - REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT:
This Baker Petrolite product contains the following components that are subject to the reporting requirements of TSCA Section 12(b) if exported from the United States:

---------- Chemical Name ---------- CAS Number
No TSCA 12(b) chemicals are present in the product.

SIGNIFICANT NEW USE RULES (SNUR): This product does not contain any components that are subject to a Significant New Use Rule (SNUR).

PENNSYLVANIA RIGHT-TO-KNOW:
The following non-hazardous ingredients are present in the product at greater than 3%:

---------- CHEMICAL NAME ---------- CAS NUMBER
No non-hazardous ingredients are present at greater than 3%.

SECTION 16 - OTHER INFORMATION

NFPA: Health: 3 Flammability: 3 Reactivity: 0 Special:

Revision History: 8/18/99 - Revised Section 2, 3, 5, 9
1/4/99 - Updated physical properties.

(Continued on Page 9)

DISCLAIMER

The information and recommendations contained hereon are believed to be accurate and reliable as of the date issued. However, we do not warrant their accuracy or reliability.

We only warrant to you, but no other persons, that the product referenced herein shall conform to our quality assurance specifications for the product on the date of shipment to you. WE EXPRESSLY DISCLAIM ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Any technical advice, information or recommendation given to you is given gratis without any warranty whatsoever as to the advice, information or recommendation given or results obtained.

You shall assume all risks and shall be solely responsible for the results obtained from the storage, handling or use of the product and any information or recommendation regarding the product, whether alone or in combination with other substances.

UNDER NO CIRCUMSTANCES SHALL WE BE LIABLE FOR ANY ECONOMIC, CONSEQUENTIAL (INCLUDING LOST PROFITS OR SAVINGS) OR INCIDENTAL DAMAGES, EVEN IF WE ARE INFORMED OF THEIR POSSIBLITY, EXEMPLARY OR PUNITIVE DAMAGES, REGARDLESS OF THE FORM OR ACTION, WHETHER IN CONTRACT OR TORT, INCLUDING OUR SOLE OR JOINT NEGLIGENCE AND STRICT LIABILITY.

<END OF MSDS>

653 AROMATIC SOLVENT

EXXON COMPANY, U.S.A

DATE ISSUED: 05/25/99
SUPERSEDES DATE: 03/22/99

MATERIAL SAFETY DATA SHEET

EXXON COMPANY, U.S.A. P.O. BOX 2180 HOUSTON, TX 77252-2180

A. IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME
653 AROMATIC SOLVENT

PRODUCT CODE
132653

PRODUCT CATEGORY
Petroleum Solvent

PRODUCT APPEARANCE AND ODOR
Clear water-white liquid
Aromatic hydrocarbon odor

MEDICAL EMERGENCY TELEPHONE NUMBER: (713) 656-3424

TRANSPORTATION EMERGENCY TELEPHONE NUMBERS
(BAYTOWN) (281) 834-3296 (CHEMTREC) 1-800-424-9300

FOR PRODUCT INFORMATION AND TECHNICAL ASSISTANCE CALL: 1-800-443-9966

FOR A FAXED COPY OF AN MSDS DIAL: 1-800-298-4007

FOR AN MSDS OR ASSISTANCE WITH AN MSDS, DIRECT INQUIRIES TO THE ADDRESS BELOW OR CALL:
MARKETING TECHNICAL SERVICES
EXXON COMPANY, U.S.A.
ROOM 2344
P. O. BOX 2180
HOUSTON, TX 77252-2180
(713) 656-5949

B. COMPONENTS AND HAZARD INFORMATION

COMPONENTS	CAS NO. OF COMPONENTS	APPROXIMATE CONCENTRATION
Solvent naphtha (petroleum), heavy aromatic	64742-94-5	100%

This product consists predominantly of C9-C11 aromatic hydrocarbons, primarily C10.

It includes:

Naphthalene	91-20-3	Approximately 9.9 mass
1,2,4-Trimethylbenzene	95-63-6	Approximately 1.7 mass

This product, as manufactured by Exxon, does not contain polychlorinated biphenyls (PCB's).

All components of this product are listed on the U.S. TSCA inventory.

See Section E for Health and Hazard Information.

See Section H for additional Environmental Information.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

Health	Flammability	Reactivity	BASIS
1	2	0	Recommended by Exxon

EXPOSURE LIMIT FOR TOTAL PRODUCT	BASIS
100 ppm (563 mg/m3) for an 8-hour workday	Recommended by Exxon
The airborne naphthalene level shall not exceed 10 ppm (50 mg/m3) for an 8-hour workday; 15 ppm (75 mg/m3) STEL	OSHA Regulation 29 CFR 1910.1000 and recommended by the American Conference of Governmental Industrial Hygienists (ACGIH)
25 ppm (125 mg/m3) for 1,2,4-Trimethylbenzene for an 8-hour workday.	OSHA Regulation 29 CFR 1910.1000

C. PRIMARY ROUTES OF ENTRY AND EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT
If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN
In case of skin contact, remove any contaminated clothing and wash skin with soap and water. Launder or dry-clean clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

INHALATION
If overcome by vapor, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

INGESTION
If ingested, DO NOT induce vomiting; call a physician immediately.

D. FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT (MINIMUM)	AUTOIGNITION TEMPERATURE
COMBUSTIBLE - Per DOT 49 CFR 173.120 63~C (145~F) ASTM D 56, Tag Closed Cup	Approximately 443~C (830~F) ASTM E 659

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION

Health	Flammability	Reactivity	BASIS

1 2 0 Recommended by Exxon

HANDLING PRECAUTIONS
This liquid is volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

Keep product away from ignition sources, such as heat, sparks, pilot lights, static electricity, and open flames.

FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)
Estimated values: Lower Flammable Limit 1.8% Upper Flammable Limit 11.7%

EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES
Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Tenth Edition (1991):

Use water spray, dry chemical, foam or carbon dioxide to extinguish the fire. Use water to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for persons attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing of gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS
Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

"EMPTY" CONTAINER WARNING
"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Do not attempt to refill or clean containers since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

E. HEALTH AND HAZARD INFORMATION

VARIABILITY AMONG INDIVIDUALS
Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)

High vapor concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death.

NATURE OF HAZARD AND TOXICITY INFORMATION

Prolonged or repeated skin contact with this product tends to remove skin oils, possibly leading to irritation and dermatitis; however, based on human experience and available toxicological data, this product is judged to be neither a "corrosive" nor an "irritant" by OSHA criteria.

Product contacting the eyes may cause eye irritation.

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

This product is judged to have an acute oral LD50 (rat) greater than 5 g/kg of body weight, and an acute dermal LD50 (rabbit) greater than 3.16 g/kg of body weight.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE

Petroleum Solvents/Petroleum Hydrocarbons - Skin contact may aggravate an existing dermatitis.

F. PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes.

BOILING RANGE
184-205~C (363-401~F)

SPECIFIC GRAVITY (15.6~C/15.6~C)
0.90 (7.49 lb/gal)

MOLECULAR WEIGHT
142

pH
Essentially neutral

POUR, CONGEALING OR MELTING POINT
Less than -18~C (0~F)
Pour Point by ASTM D 97

VISCOSITY
1.33 cSt @ 25~C (77~F) ASTM D 445

VAPOR PRESSURE
0.5 mm Hg @ 20~C (68~F)
ASTM D 2879

VAPOR DENSITY (AIR = 1)
4.6

PERCENT VOLATILE BY VOLUME
Approximately 50% in 122 minutes @ 1 atm. and 25~C (77~F)

EVAPORATION RATE @ 1 ATM. AND 25~C (77~F) (n-BUTYL ACETATE = 1)
0.06

SOLUBILITY IN WATER @ 1 ATM. AND 25~C (77~F)
Negligible; 0.0006%

G. REACTIVITY

This product is stable and will not react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc., as this presents a serious explosion hazard.

H. ENVIRONMENTAL INFORMATION

CLEAN WATER ACT / OIL POLLUTION ACT
This product may be classified as an oil under Section 311 of the Clean Water Act, and under the Oil Pollution Act. Discharges or spills into or leading to surface waters that cause a sheen must be reported to the National Response Center (1-800-424-8802).

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Shut off and eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Ventilate confined spaces. Open all windows and doors. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas.

Assure conformity with applicable governmental regulations. Continue to observe precautions for volatile, combustible vapors from absorbed material.

THE FOLLOWING INFORMATION MAY BE USEFUL IN COMPLYING WITH VARIOUS STATE AND FEDERAL LAWS AND REGULATIONS UNDER VARIOUS ENVIRONMENTAL STATUTES:

THRESHOLD PLANNING QUANTITY (TPQ), EPA REGULATION 40 CFR 355 (SARA Sections 301-304)
No TPQ for product or any constituent greater than 1% or 0.1% (carcinogen).

TOXIC CHEMICAL RELEASE REPORTING, EPA REGULATION 40 CFR 372 (SARA Section 313)
This product contains approximately 9.9% naphthalene.

This product contains approximately 1.7% 1,2,4-trimethylbenzene.

HAZARDOUS CHEMICAL REPORTING, EPA REGULATION 40 CFR 370 (SARA Sections 311-312)
EPA Hazard Classification Codes: Chronic, Fire

I. PROTECTION AND PRECAUTIONS

VENTILATION
Use only with ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. No smoking, or use of flame or other ignition sources.

RESPIRATORY PROTECTION
Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

PROTECTIVE GLOVES
Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION
Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT
Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing, which could result in prolonged or repeated skin contact.

WORK PRACTICES / ENGINEERING CONTROLS
To prevent fire or explosion risk from static accumulation and discharge, effectively bond and/or ground product transfer system in accordance with (THE) National Fire Protection Association PUBLICATIONS.

Keep containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants. To prevent fire or explosion risk from static accumulation and discharge, effectively bond and/or ground product transfer system in accordance with the National Fire Protection Association standard for petroleum products.

In order to prevent fire or explosion hazards, use appropriate equipment.

Information on electrical equipment appropriate for use with this product may be found in the latest edition of the National Electrical Code (NFPA-70). This document is available from the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269.

PERSONAL HYGIENE
Minimize breathing vapor or mist. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before re-use. Remove contaminated shoes and thoroughly clean and dry before re-use. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

J. TRANSPORTATION AND OSHA RELATED LABEL INFORMATION

TRANSPORTATION INCIDENT INFORMATION
For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents.

U.S. DOT HAZARDOUS MATERIALS SHIPPING DESCRIPTION
Bulk packagings (capacity greater than 119 gallons)
Petroleum Distillate, n.o.s., Combustible Liquid, UN1268, III

Non-bulk packagings (capacity less than or equal to 119 gallons)
Not regulated

OSHA REQUIRED LABEL INFORMATION
In compliance with hazard and right-to-know requirements, where applicable OSHA Hazard Warnings may be found on the label, bill of lading or invoice accompanying this shipment.

DANGER!

COMBUSTIBLE

Note: Product label may contain non-OSHA related information also.

The health and safety information presented herein must be used in conjunction with the pertinent standards for training, work practices and facilities design established by OSHA, NIOSH, NFPA, API, NEC, NSC, UNDERWRITERS, BUREAU OF MINES, and similar organizations.

The information and recommendations contained herein are, to the best of Exxon's knowledge and belief, accurate and reliable as of the date issued. Exxon does not warrant or guarantee their accuracy or reliability, and Exxon shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product, legal counsel should be consulted to insure proper health, safety and other necessary information is included on the container.

The Environmental Information included under Section H hereof as well as the Hazardous Materials Identification System (HMIS) and National Fire Protection Association (NFPA) ratings have been included by Exxon Company, U.S.A. in order to provide additional health and hazard classification information. The ratings recommended are based upon the criteria supplied by the developers of these rating systems, together with Exxon's interpretation of the available data.

The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The Minerals Management Service Mission

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Minerals Revenue Management** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.