



DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
200 STOVALL STREET
ALEXANDRIA, VA 22332

0015
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6 May 1974

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NAVFACNOTE 11330
FAC-10232
20 FEB 1974

NAVFAC NOTICE 11330

From: Commander, Naval Facilities Engineering Command

Subj: Chemicals and Coatings for Use in the Operation and Maintenance of Potable Water Systems

Ref: (a) NAVMATINST 5460.2 of 20 Aug 1969 (NOTAL)
(b) NAVDOCKS MO-210, "Operation and Maintenance of Water Supply System" (NOTAL)
(c) NAVFAC MO-110, "Paints and Protective Coatings" of 15 Jan 1969 (NOTAL)

Encl: (1) Specifications for Chemicals Commonly Used in Potable Water Treatment
(2) EPA "Report on Coagulant Aids for Water Treatment", July 1973

1. Purpose. To provide advance information to avoid the potential contamination of potable water supplies, and to provide guidance in the procurement of approved potable water treatment chemicals.

2. Discussion. Among other responsibilities, reference (a) tasked NAVFAC to provide sanitary engineering guidance on the operation and maintenance of potable water systems. Accordingly, NAVFAC requests addressees to:

a. Avoid any use of lead as a protective metallic coating in connection with potable water. Such use, mistakenly referred to in reference (b) paragraph 4.1.5.3, should be ignored.

b. With respect to paragraph 10.2.3.11b of reference (c), item numbers 2, 3, and 4 are appropriate for interior surfaces of water storage tanks. Item number 1 is currently being revised and the components should not be used. Additional information on this reference may be directed to NAVFAC Code 0436 at AUTOVON 221-0464.

3. Action

a. Chemicals (except coagulant aids) used for treatment of potable water, in accordance with Chapter 3 of reference (b), shall conform to specifications listed in enclosure (1). Normally, applicable Federal or Military specifications shall be cited in procurement.

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When those do not cover the material being obtained, American Water Works Association (AWWA) specifications shall be cited.

b. Coagulant aids used in treatment of potable water shall be approved by the U. S. Environmental Protection Agency and shall be those listed in enclosure (2).

4. Contingency Cancellation. By separate action, references (b) and (c) are being revised to reflect this information.

E. A. McManus

E. A. McManus
Assistant Commander for
Operations and Maintenance

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SPECIFICATIONS FOR CHEMICALS COMMONLY USED
IN POTABLE WATER TREATMENT

<u>Water Treatment</u>	<u>Specifications</u>		
	<u>Federal</u>	<u>Military</u>	<u>AWWA*</u>
<u>Softening</u>			
Sodium chloride	SS-S-550B	MIL-STD-1208	B200
Soda ash (anhydrous normal sodium carbonate)			B201
Quick lime (calcium, magnesium oxide)			B202
Hydrated lime (calcium, magnesium hydroxide; slaked lime)			B202
Zeolytes (aluminosilicates)			B250
<u>Disinfection</u>			
Sodium hypochlorite	O-S-602D	MIL-STD-1208	B300
Calcium hypochlorite	O-C-114A		B300
Chlorine, liquid	B-BC-120B		B301
<u>Coagulation</u>			
Ferrous sulfate		MIL-STD-1205	B402
Aluminum sulfate (filter alum)	O-A-429B		B403
Sodium silicate, liquid			B404
Bauxite (hydrated aluminum oxide)			B401
Sodium aluminate			B405
Ferric sulfate		MIL-STD-1205	B406
For coagulant aids see enclosure (2)			
<u>Scale and Corrosion Control</u>			
Tri sodium phosphate			B500
Caustic soda (potassium hydroxide)			
Sodium hexametaphosphate	O-S-635C(1)	MIL-S-51078A	B502
<u>Taste and Odor Control</u>			
Activated carbon, powdered		MIL-C-506C	B600
Sodium pyrosulfate			B600
Copper sulfate			B602
Potassium permanganate			B603

Enclosure (1)
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SPECIFICATION FOR CHEMICALS COMMONLY USED
IN POTABLE WATER TREATMENT
(CONTINUED)

<u>Water Treatment</u>	<u>Specifications</u>		
	<u>Federal</u>	<u>Military</u>	<u>AWWA*</u>
<u>Fluoridation</u>			
Sodium fluoride		MIL-STD-1208	B701
Sodium silicofluoride		MIL-STD-1208	B702
Fluorosilicic acid			B703

*American Water Works Association

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ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF AIR AND WATER PROGRAMS
WATER SUPPLY DIVISION
Cincinnati, Ohio 45268

JULY 1973

REPORT ON COAGULANT AIDS FOR WATER TREATMENT

On the basis of information submitted by the manufacturers and/or distributors, the Environmental Protection Agency has concluded that the following additional products may be used in water treatment without adverse physiological effects on those using the water, when applied in the concentration recommended by the manufacturers and/or distributors and provided the products continue to meet the quality specifications furnished.

MANUFACTURER AND/OR DISTRIBUTOR	PRODUCT	MAXIMUM CONCENTRATION RECOMMENDED - mg/l
American Cynamid Co. Berdan Avenue Wayne, NJ 07470	MAGNIFLOC 581-C	10
Betz Laboratories, Inc. Somerton Road Trevose, PA 19047	Betz Polymer 1140P Betz Polymer 1240P	1 1
Brennan Chemical Co. 704 North First Street St. Louis, MO 63102	BRENCO 870 BRENCO 880	100 100
Environmental Pollution Investigation and Control, Inc. 9221 Bond Street Overland Park, KS 66214	DynaFloc 631 DynaFloc 632 DynaFloc 633 DynaFloc 634 DynaFloc 661 DynaFloc 662 DynaFloc 664 DynaFloc 691 DynaFloc 692 DynaFloc 693	5.0 1.0 1.0 1.0 1.0 5.0 5.0 1.0 1.0 5.0

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<u>MANUFACTURER AND/OR DISTRIBUTOR</u>	<u>PRODUCT</u>	<u>MAXIMUM CONCENTRATION RECOMMENDED - mg/l</u>
Fabcon International 1275 Columbus Avenue San Francisco, CA 94133	Zuclar 110 PW Fabcon	0.5 0.5
ICI America, Inc. Wilmington, De 19899	ATLASEP-PWG-11 ATLASEP-PWG-44 ATLASEP-PWG-77 ATLASEP-PWG-100 ATLASEP-PWG-255	1 1 1 1 1
Nalco Chemical Co. 6216 W. 66th Place Chicago, IL 60638	Nalcolyte 8101 Nalcolyte 8113 Nalcolyte 8114 Nalcolyte 8171 Nalcolyte 8172 Nalcolyte 8174 12C06	10 10 10 1 1 1 10

The Environmental Protection Agency emphasizes that its findings bear only on the health aspects of the use of these products in drinking water treatment and do not constitute endorsement or indicate effectiveness for the proposed use.

Some of the products listed may kill fish at or below maximum recommended concentrations. The review of the suitability of these products is confined to their use in drinking water treatment plants. Information on fish toxicity, biointensification and biodegradability will be necessary for other types of application, and users should obtain such information from the manufacturers.

The total list of products reviewed in the past and found to be suitable for use in water treatment, and that the manufacturers and/or distributors still wish to have listed, follows.

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MANUFACTURER
AND/OR DISTRIBUTORPRODUCTMAXIMUM CONCENTRATION
RECOMMENDED - mg/l

Allied Colloids, Inc. One Robinson Lane Ridgewood, NJ 07450	Percol LT-20	1
	Percol LT-22	1
	Percol LT-24	5
	Percol LT-25	5
	Percol LT-26	1
	Percol LT-29	1
Allstate Chemical Co. Box 3040 Euclid, OH 44117	ALLSTATE NO. 2	3.0
	ALLSTATE NO. 6	1
Allyn Chemical Co. 2224 Fairhill Road Cleveland, OH 44106	Claron	1.5
	Claron 207	2
American Cyanamid Co. Berdan Avenue Wayne, NJ 07470	Superfloc 127	1
	MAGNIFLOC 521-C	10
	MAGNIFLOC 570-C	10
	MAGNIFLOC 571-C	10
	MAGNIFLOC 573-C	10
	MAGNIFLOC 575-C	10
	MAGNIFLOC 577-C	10
	MAGNIFLOC 579-C	10
	MAGNIFLOC 581-C	10
	MAGNIFLOC 845-A	1
	MAGNIFLOC 846-A	1
	MAGNIFLOC 847-A	1
	MAGNIFLOC 860-A	1
	MAGNIFLOC 971-N	1
MAGNIFLOC 972-N	1	
MAGNIFLOC 985-N	1	
MAGNIFLOC 990-N	1	
Atlas Chemical Industries, Inc. Wilmington, DE 19899	SORBO	20
Berdell Industries 28-01 Thomson Avenue Long Island City, NY 11101	Berdell N-489 Flocculant	1
	Berdell N-821 Flocculant	1
	Berdell N-902 Flocculant	1

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<u>MANUFACTURER AND/OR DISTRIBUTOR</u>	<u>PRODUCT</u>	<u>MAXIMUM CONCENTRATION RECOMMENDED - mg/l</u>
Betz Laboratories, Inc. Somerton Road Trevose, PA 19047	Betz Polymer 1100P	1
	Betz Polymer 1110P	1
	Betz Polymer 1120P	1
	Betz Polymer 1130P	1
	Betz Polymer 1140P	1
	Betz Polymer 1150P	1
	Betz Polymer 1160P	1
	Betz Polymer 1200P	1
	Betz Polymer 1205P	1
	Betz Polymer 1210P	1
	Betz Polymer 1220P	1
	Betz Polymer 1230P	1
	Betz Polymer 1240P	1
	Betz Polymer 1250P	1
	Betz Polymer 1260P	1
	Poly-Floc 4D	25
Bond Chemicals, Inc. 1500 Brookpark Road Cleveland, OH 44109	Bondfloc No. 1-101	5
Brennan Chemical Co. 704 North First Street St. Louis, MO 63102	BRENCO 870	100
	BRENCO 880	100
The Burtonite Company Nutley, NJ 07110	Burtonite #78	5
Calgon Corporation P.O. Box 1346 Pittsburgh, PA 15222	Coagulant Aid #2	1
	Coagulant Aid #18	15
	Coagulant Aid #233	1
	Coagulant Aid #243	1
	Coagulant Aid #253	1
	Coagulant Aid #961	5
	Cat-Floc	7
Cat-Floc B	10	
Commercial Chemical 11 Patterson Avenue Midland Park, NJ 07432	Coagulant Aid Speedifloc #1	10
	Speedifloc #2	5
Dearborn Chemical Div. W. R. Grace & Co. Merchandise Mart Plaza Chicago, IL 60654	Aquafloc 408 (liquid)	50
	Aquafloc 409	1
	Aquafloc 411	2
	Aquafloc 422	1

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MANUFACTURER
AND/OR DISTRIBUTORPRODUCT MAXIMUM CONCENTRATION
RECOMMENDED - mg/l

Dow Chemical U.S.A.
Barstow Building
2020 Dow Center
Midland, MI 48640

Dowell M-143	5
PEI-1090	5
Purifloc A-22	1
Purifloc A-23 (PWG)	1
Purifloc C-31	5
Purifloc N-17	1
Separan AP-30	1
Separan AP-273	1
Premium	
Separan NP-10	
Potable Water	
Grade	1
Purifloc N-20	1
XD 7817	1

Drew Chemical Corp.
701 Jefferson Road
Parsippany, NJ 07054

Drewfloc 1	1:8 Alum; 0.5:10 Lime*
Drewfloc No. 3	3
Drewfloc No. 21	5
Drewfloc 922	10
AMERFLOC 265	1
AMERFLOC 275	1
AMERFLOC 307	1
Drewfloc 4	5

DuBols Chemicals
Div. of W.R. Grace & Co.
3630 E. Kemper Road
Sharonville, OH 45241

FLOCCULITE 550	2
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E. I. DuPont de Nemours
and Company
Eastern Laboratory
Gibbstown, NJ 08027

Carboxymethyl- cellulose	1
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Environmental Pollution
Investigation and
Control, Inc.
9221 Bond Street
Overland Park, KS 66214

DynaFloc 631	5.0
DynaFloc 632	1.0
DynaFloc 633	1.0
DynaFloc 634	1.0
DynaFloc 661	1.0
DynaFloc 662	5.0
DynaFloc 664	5.0
DynaFloc 691	1.0
DynaFloc 692	1.0
DynaFloc 693	5.0

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<u>MANUFACTURER AND/OR DISTRIBUTOR</u>	<u>PRODUCT</u>	<u>MAXIMUM CONCENTRATION RECOMMENDED - mg/l</u>
Fabcon International 1275 Columbus Avenue San Francisco, CA 94133	Zuclar 110 PW	0.5
	Fabcon	0.5
Henry W. Fink & Co. 6900 Silverton Ave. Cincinnati, OH 45236	No. 102	1
	No. 109 Kleer-Floc	1
	No. 116 Kleer-Floc	5
	No. 119 Kleer-Floc	1
	No. 730 Kleer-Floc	1
	No. 735 Kleer-Floc	1
Gamlen Sybron Corp. 321 Victory Avenue S. San Francisco, CA 94080	Gamlose W	5
	Gamlen Wisprofloc 20	5
	Gamafloc NI-702	4
Garrett-Callahan 111 Rollins Road Millbrae, CA 94031	Coagulant Aid 72A	50
	Coagulant Aid 74B	30
	Coagulant Aid 76	40
	Coagulant Aid 76A	50
	Coagulant Aid 78B	50
	Formula 70A	50
	Formula 73	50
	Formula 74E	20
General Mills Chemicals 4620 N. 77th Street Minneapolis, MN 55435	SuperCol Guar Gum	10
	Guartec F	10
	Guartec SJ	10
Hercules, Inc. 910 Market Street Wilmington, DE 19899	Carboxymethyl- cellulose	1
	Hercofloc 818 (Potable Water Grade)	1
	Hercofloc 821 (Potable Water Grade)	1
Frank Herzl Corp. 299 Madison Avenue New York, NY 10017	Perfectamyl A5114/2	10
ICI America, Inc. Wilmington, DE 19899	ATLASEP-PWG-11	1
	ATLASEP-PWG-44	1
	ATLASEP-PWG-77	1
	ATLASEP-PWG-100	1
	ATLASEP-PWG-255	1

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<u>MANUFACTURER AND/OR DISTRIBUTOR</u>	<u>PRODUCT</u>	<u>MAXIMUM CONCENTRATION RECOMMENDED - mg/l</u>
Illinois Water Treatment Co. 840 Cedar Street Rockford, IL 61102	Illco IFA 313	10
Kelco Company 8225 Aero Drive San Diego, CA 92123	Kelgin W Kelcosol	2 2
Key Chemicals 4346 Tacony Philadelphia, PA 19124	Key-Floc-W	25
Metalene Chemical Co. Bedford, OH 44014	Metalene Coagulant P-6	5
The Mogul Corporation 20600 Chagrin Blvd. Cleveland, OH 44122	Ecco Suspension Catalyzer 146 MOGUL CO-980 MOGUL CO-982 MOGUL CO-983 MOGUL CO-985 MOGUL CO-986	3.5 2 1.5 1 3.5 5
Nalco Chemical Co. 6216 W. 66th Place Chicago, IL 60638	Nalcolyte 110A Nalcolyte 607 Nalcolyte 671 Nalcolyte 7870 Nalcolyte 8101 Nalcolyte 8113 Nalcolyte 8114 Nalcolyte 8170 Nalcolyte 8171 Nalcolyte 8172 Nalcolyte 8173 Nalcolyte 8174 Nalcolyte 8175 12C06	5 40 1 1 10 10 10 1 1 1 1 1 1 1 10
Narvon Mining & Chemical Co., Affiliate of Iri Daffin Associates Keller Ave. & Fruitville Pike Lancaster, PA 17604	Sink-Floc Z3 & AZ3 Sink-Floc Z4 & AZ4 Sink-Floc Z5 & AZ5 Zeta-Floc C Zeta-Floc K Zeta-Floc O Zeta-Floc WA	10 10 10 20 20 20 20

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<u>MANUFACTURER AND/OR DISTRIBUTOR</u>	<u>PRODUCT</u>	<u>MAXIMUM CONCENTRATION RECOMMENDED - mg/l</u>
National Starch & Chemical Corp. 1700 W. Front Street Plainfield, NJ 07063	Floc-Aid 1038	5
	Floc-Aid 1063	5
O'Brein Industries, Inc. 95 Dorsa Avenue Livingston, NJ 07039	O'B Floc	10
Oxford Chemical Div. Consolidated Foods Corp. P. O. Box 80202 Atlanta, GA 30341	OXFORD-HYDRO-FLOC	10
W. A. Scholten's Chemische Fabrieken M.V. Foxhol, Postbus 1 The Netherlands	Wisprofloc P	5
Standard Brands Chem. Industries, Inc. Div. of Standard Brands P. O. Drawer K Dover, DE 19901	TYCHEM 8035	1
A. E. Staley Mfg. Co. P. O. Box 151 Decatur, IL 62525	HAMACON 196	5
Stein, Hall & Co., Inc. 605 Third Avenue New York, NY 10016	Hallmark 81	1
	Hallmark 82	1
	Jaguar	0.5
	MRL-14	1
	MRL-22	2
James Varley & Sons, Inc. 1200 Switzer Avenue St. Louis, MO 63147	Polyhall M-295 P.W.	1
	VARCO-FLOC	150
W. E. Zimmie, Inc. 810 Sharon Drive Westlake, OH 44145	Zimmite ZM-100	1
	Zimmite ZC-301	130
	Zimmite ZT-600	1
	Zimmite ZT-601	1
	Zimmite ZT-603	1

* One part of Drewfloc to 8 parts of alum when used simply as an aid in alum coagulation, and 0.5 mg/l of Drewfloc to 10 mg/l of lime when used in connection with lime softening.

Enclosure (2)

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