

STATISTICAL SUMMARY

By Stephen D. Smith

This annual report summarizes data on crude nonfuel mineral production¹ for the United States, its island possessions, and the Commonwealth of Puerto Rico.

Although crude mineral production may be measured at any of several stages of extraction and processing, the stage of measurement used in this annual report is what is termed "mine output." This term refers to minerals or ores in the form in which they are first extracted from the ground, but customarily may include the output from auxiliary processing at or near the mines.

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending on the minerals or mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 1999 USGS mineral production data published in this chapter are as of April 2001. For some commodities such as construction sand and gravel, crushed stone, and portland cement, data are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. A telephone listing for the specialists may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; by using MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset (request Document # 1000 for a telephone listing of all mineral commodity specialists); or by calling USGS information at (703) 648-4000 for the specialist's name and number. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>; facsimile copies may be obtained from MINES FaxBack.

Values, percentage calculations, and rankings for 1999 may vary from the Minerals Yearbook, Area Reports: Domestic 1999, Volume II, owing to revision of preliminary 1999 to final 1999 data.

Because of inadequacies in the statistics available, some series deviate from the foregoing definition. For copper, gold, lead, silver, tin, and zinc, the quantities shown are recorded on a mine basis (as the recoverable content of ore sold or treated). The values assigned to the quantities, however, are based on the average selling price of refined metal, not the mine value. Mercury is measured as recovered metal and valued at the average New York price for the metal. Values shown are in current dollars, with no adjustments made to compensate for changes in the purchasing power of the dollar.

The annual total value of all nonfuel mineral production in the United States decreased almost 1% to \$39.1 billion in 1999, with metals decreasing almost 13% to \$9.8 billion and industrial minerals increasing almost 4% to \$29.3 billion compared with those of 1998. Nine of the mineral commodities produced in the United States in 1999 had an individual total production value that was greater than \$1 billion. These commodities were, in descending order, stone (crushed), cement (portland), sand and gravel (construction), gold, copper, iron ore (usable), phosphate rock, lime, and salt. They composed more than 78% of the U.S. total production value (table 1.)

In 1999, 14 States produced nonfuel mineral commodities with individual total production values of greater than \$1 billion. These States were, in descending order, California, Nevada, Arizona, Florida, Texas, Georgia, Michigan, Minnesota, Missouri, Utah, Pennsylvania, Alaska, Ohio, and Wyoming. They composed almost 62% of the U.S. total production value (table 3.)

TABLE 1
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999		
	Quantity	Value	Quantity	Value	Quantity	Value	
Metals:							
Antimony 3/	metric tons	356	W	489 r/	W	449	W
Beryllium concentrates	do.	5,760	6	6,080	7	5,070	6
Copper 4/		1,940	4,570,000 r/	1,860	3,220,000	1,600	2,680,000
Gold 4/	kilograms	362,000	3,870,000	366,000	3,480,000	341,000	3,070,000
Iron ore, usable		62,800	1,860,000 r/	63,200	1,970,000	60,700	1,550,000
Iron oxide pigments, crude	metric tons	46,900	7,580	46,100	7,290	44,100	7,740
Lead 4/	do.	448,000	460,000	481,000	480,000	503,000	485,000
Magnesium metal	do.	125,000	400,000	106,000	344,000	W	W
Molybdenum concentrates 3/	do.	59,100	406,000 r/	52,100	200,000 r/	40,700	203,000
Palladium	kilograms	8,430 r/	49,900 r/	10,600	98,500 r/	9,800	114,000
Platinum	do.	2,610	33,200	3,240	38,800	2,920	35,600
Rare-earth metal concentrates	metric tons	10,000 r/ e/	W	5,000 e/	14,400 e/	5,000 e/	14,400 e/
Silver 4/	do.	2,180	343,000	2,060	339,000	1,950	329,000
Zinc 4/	do.	592,000 r/	843,000 r/	709,000 r/	804,000 r/	808,000	953,000
Combined value of bauxite, manganiferous ore, mercury, titanium concentrates, tungsten, vanadium, zirconium concentrates, and values indicated by symbol W							
		XX	208,000 r/	XX	145,000 r/	XX	368,000
Total		XX	13,100,000 r/	XX	11,100,000 r/	XX	9,800,000
Industrial minerals, excluding fuels:							
Asbestos	metric tons	6,890	W	5,760	W	7,190	W
Barite		692	15,500	476	11,400	434	11,100
Boron minerals		1,190	580,000	1,170	486,000	1,220	630,000
Bromine	metric tons	247,000	111,000 r/	230,000	162,000	239,000	213,000
Cement:							
Masonry		3,630	339,000 e/	3,990	391,000 e/	4,380	452,000 e/
Portland		78,900	5,710,000 e/	79,900	6,030,000 e/	81,600	6,280,000 e/
Clays:							
Ball		1,060 r/	49,800 r/	1,130	51,100	1,200	48,000
Bentonite		4,020	169,000	3,820	176,000	4,070	176,000
Common		24,600 r/	150,000 r/	24,500	145,000 r/	24,800	155,000
Fire		415 r/	8,010 r/	410	7,520	402	6,770
Fuller's earth		2,370	255,000	2,420 r/	233,000	2,560	231,000
Kaolin		9,280 r/	1,030,000 r/	9,640 r/	1,060,000 r/	9,160	948,000
Diatomite		766	184,000	725	180,000	747	178,000
Feldspar	metric tons	900,000	42,500	820,000	40,800	875,000	42,700
Garnet, industrial	do.	64,900	6,050	74,000	7,070	60,700	6,170
Gemstones		NA	25,000	NA	14,300	NA	16,100
Gypsum, crude		18,600	132,000	19,000	132,000	22,400	157,000
Helium:							
Crude	million cubic meters	37	33,700	33	29,700	63	57,200
Grade-A	do.	104	206,000	110	219,000	117	233,000
Iodine	metric tons	1,320	19,600	1,490	22,700	1,620	23,800
Kyanite		W	W	90 e/	13,200 e/	90 e/	12,700 e/
Lime		19,600	1,200,000	20,100	1,210,000	19,500	1,170,000
Mica, crude		114	9,400	87	7,550	104,000	15,300
Peat		753 r/	17,500	791 r/	19,200 r/	834	22,100
Perlite, crude	metric tons	706,000	23,300	685,000	21,800	711,000	23,800
Phosphate rock, marketable		45,900	1,080,000	44,200	1,130,000 r/	40,600	1,240,000
Potash		2,900 r/	320,000	3,000	330,000 r/	2,500	280,000
Pumice and pumicite	metric tons	577,000	16,100	583,000	12,600	643,000	17,800
Salt		40,600	993,000	40,800	986,000	44,400	1,110,000
Sand and gravel:							
Construction		952,000	4,260,000	1,070,000 r/	4,910,000 r/	1,110,000	5,250,000
Industrial		28,500	511,000 r/	28,200	513,000	28,900	538,000

See footnotes at end of table.

TABLE 1--Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
Industrial minerals, excluding fuels--Continued:						
Silica stone 5/ metric tons	445	2,560	438	3,440	475	3,060
Sodium compounds:						
Soda ash	10,700	915,000	10,100	842,000	10,200	779,000
Sodium sulfate, natural	318	34,700	(6/)	(6/)	(6/)	(6/)
Stone, crushed 7/	1,420,000	8,050,000	1,510,000	8,130,000	1,540,000	8,240,000
Tripoli metric tons	81,300	16,400	79,600	16,900	84,900	20,200
Zeolites do.	30,100	NA	38,500	NA	40,100	NA
Combined value of brucite, emery, greensand marl, lithium minerals, magnesite, magnesium compounds, olivine, staurolite, stone (dimension), sulfur (Frasch), talc and pyrophyllite, vermiculite (crude), wollastonite and values indicated by symbol W	XX	803,000	XX	614,000 r/	XX	675,000
Total	XX	27,300,000 r/	XX	28,200,000	XX	29,300,000
Grand total	XX	40,400,000 r/	XX	39,300,000 r/	XX	39,100,000

e/ Estimated. r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value." XX Not applicable.

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Content of ore and concentrate.

4/ Recoverable content of ores, etc.

5/ Includes grindstones, pulpstones, and sharpening stones; excludes mill liners and grinding pebbles.

6/ Canvassing discontinued.

7/ Excludes abrasive stone and bituminous limestone and sandstone; all included elsewhere in table.

TABLE 2
NONFUEL MINERALS PRODUCED IN THE UNITED STATES, BY COMMODITY AND STATES IN 1999

(Principal States based upon quantity unless otherwise noted)

Mineral	Principal States	Other States (alphabetical order)
Antimony 1/	ID	
Asbestos	CA	
Barite	NV, GA, TN	
Beryllium concentrate	UT	
Boron minerals	CA	
Bromine	AR and MI	
Brucite	NV	
Cement:		
Masonry	FL, CA, IN, AL, SC	AZ, AR, CO, GA, HI, IA, KS, KY, ME, MD, MI, MO, NE, NM, NY, OH, OK, PA, SD, TN, TX, VA, WV.
Portland	CA, TX, PA, MI, MO	All other States, except AK, CT, DE, LA, MA, MN, NH, NJ, NC, ND, RI, VT, WI.
Clays:		
Ball	TN, TX, KY, MS, IN	
Bentonite	WY, MT, AL, MS, UT	AZ, CA, CO, NV, OR, TX, UT.
Common	NC, AL, TX, OH, GA	All other States, except AK, DE, HI, ID, NV, NH, RI, VT, WI.
Fire	MO, OH, SC, CA, KY	NM.
Fuller's earth	GA, MS, MO, FL, CA	IL, KS, NV, TN, TX, VA.
Kaolin	GA, SC, AL, CA, TX	AR, FL, NV, NC, TN.
Copper 1/	AZ, UT, NM, MT, NV	AK, ID, MO, TN.
Diatomite	CA, NV, OR, WA	
Emery	OR	
Feldspar	NC, VA, CA, GA, OK	ID and SD.
Garnet, abrasive	NY, ID, MT	
Gemstones, natural 2/	TN, NC, AZ, CA, UT	All other States.
Gold 1/	NV, CA, AK, UT, SD	AZ, CO, ID, MT, NM, SC, WA.
Greensand marl	NJ	
Gypsum, crude	OK, CA, IA, TX, NV	AZ, AR, CO, IN, KS, LA, MI, NM, NY, OH, SD, UT, VA, WA, WY.
Helium:		
Crude	KS, TX, OK	
Grade-A	KS, WY, OK, UT, CO	TX.
Iodine	OK	
Iron ore, usable	MN, MI, MO, NM, SD	CA, MT, NV.
Iron oxide pigments, crude	MO, MI, GA, AL, VA	AZ.
Kyanite	VA	
Lead 1/	MO, AK, ID, MT, NY	CO and TN.
Lime	MO, AL, OH, KY, TX	All other States, except AK, CT, DE, FL, HI, KS, ME, MD, MS, NH, NJ, NM, NY, NC, RI, VT.
Lithium minerals	NV	
Magnesite	NV	
Magnesium compounds	MI, CA, FL, UT, DE	
Magnesium metal	UT and WA	
Mercury	NV	
Mica, crude	NC, NM, GA, SC, AZ	SD.
Molybdenum	AZ, CO, UT, ID, MT	NM.
Olivine	WA and NC	
Palladium metal	MT	
Peat	FL, MI, MN, IN, IL	IA, ME, MT, NJ, NY, NC, ND, OH, PA, WA, WV, WI.
Perlite	NM, AZ, OR, UT, CA	ID and NV.
Phosphate rock	FL, ID, NC, UT	
Platinum metal	MT	
Potash	NM, UT, MI	
Pumice and pumicite	OR, CA, NM, ID, AZ	KS.
Rare-earth metal concentrates	CA	
Salt	LA, TX, OH, NY, KS	AL, AZ, CA, MI, NV, NM, OK, TN, UT, WV.
Sand and gravel:		
Construction	CA, TX, MI, AZ, OH	All other States.
Industrial	IL, MI, CA, WI, TX	All other States, except AK, CT, DE, HI, KY, ME, MT, NH, OR, SD, UT, VT, WY.
Silica stone 3/	AR and WI	
Silver 1/	NV, AK, ID, AZ, UT	CA, CO, MO, MT, NM, NY, SC, SD, TN, WA.
Soda ash	WY and CA	

See footnotes at end of table.

TABLE 2--Continued
NONFUEL MINERALS PRODUCED IN THE UNITED STATES, BY COMMODITY AND STATES IN 1999

(Principal States based upon quantity unless otherwise noted)

Mineral	Principal States	Other States (alphabetical order)
Staurolite	FL	
Stone:		
Crushed	TX, PA, FL, IL, GA	All other States, except DE.
Dimension	IN, VT, WI, GA, TX	All other States except AK, DE, FL, HI, IL, IA, KY, LA, MS, NE, NV, NJ, ND, OR, RI, WY.
Sulfur, Frasch	LA and TX	
Talc and pyrophyllite	MT, TX, VT, NY, NC	CA, OR.
Titanium concentrates:		
Ilmenite	FL and VA	
Rutile	FL	
Tripoli	IL, OK, AR, PA	
Vanadium 1/	ID	
Vermiculite, crude	SC and VA	
Wollastonite	NY	
Zeolites	NM, TX, OR, AZ, CA	
Zinc 1/	AK, TN, MO, NY, MT	CO, ID.
Zirconium concentrates	FL and VA	

1/ Content of ores, etc.

2/ Principal producing States based on value.

3/ Grindstones, pulpstones, and sharpening stones; excludes mill liners and grinding pebbles.

TABLE 3

VALUE OF NONFUEL MINERAL PRODUCTION IN THE UNITED STATES AND PRINCIPAL NONFUEL MINERALS PRODUCED IN 1999 1/

State	Value (thousands)	Rank	Percent of U.S. total	Principal minerals, in order of value
Alabama	\$993,000	16	2.54	Stone (crushed), cement (portland), lime, sand and gravel (construction), cement (masonry).
Alaska	1,080,000	12	2.76	Zinc, gold, lead, silver, sand and gravel (construction).
Arizona	2,480,000	3	6.34	Copper, sand and gravel (construction), cement (portland), molybdenum concentrates, stone (crushed).
Arkansas	497,000	29	1.27	Bromine, stone (crushed), cement (portland), sand and gravel (construction), sand and gravel (industrial).
California	3,320,000	1	8.50	Sand and gravel (construction), cement (portland), boron, stone (crushed), gold.
Colorado	574,000	25	1.47	Sand and gravel (construction), cement (portland), stone (crushed), gold, molybdenum concentrates.
Connecticut 2/	90,000	44	0.23	Stone (crushed), sand and gravel (construction), stone (dimension), clays (common), gemstones.
Delaware 2/	10,800	50	0.03	Magnesium compounds, sand and gravel (construction), gemstones.
Florida	2,020,000	4	5.17	Phosphate rock, stone (crushed), cement (portland), sand and gravel (construction), cement (masonry).
Georgia	1,640,000	6	4.20	Clays (kaolin), stone (crushed), cement (portland), clays (fuller's earth), sand and gravel (construction).
Hawaii	86,400	45	0.22	Stone (crushed), cement (portland), sand and gravel (construction), cement (masonry), gemstones.
Idaho	406,000	33	1.04	Phosphates rock, silver, sand and gravel (construction), gold, molybdenum concentrates.
Illinois	896,000	17	2.29	Stone (crushed), cement (portland), sand and gravel (construction), sand and gravel (industrial), lime.
Indiana	719,000	20	1.84	Stone (crushed), cement (portland), sand and gravel (construction), lime, cement (masonry).
Iowa	489,000	30	1.25	Stone (crushed), cement (portland), sand and gravel (construction), gypsum (crude), lime.
Kansas	600,000	24	1.54	Cement (portland), helium (Grade-A), stone (crushed), salt, helium (crude).
Kentucky	504,000	27	1.29	Stone (crushed), lime, cement (portland), sand and gravel (construction), clays (ball).
Louisiana	414,000	32	1.06	Salt, sulfur (Frasch), sand and gravel (construction), stone (crushed), clays (common).
Maine	103,000	43	0.26	Sand and gravel (construction), cement (portland), stone (crushed), peat, cement (masonry).
Maryland 2/	316,000	36	0.81	Cement (portland), stone (crushed), sand and gravel (construction), cement (masonry), stone (dimension).
Massachusetts	193,000	39	0.49	Stone (crushed), sand and gravel (construction), stone (dimension), lime, clays (common).
Michigan	1,580,000	7	4.04	Cement (portland), iron ore (usable), sand and gravel (construction), stone (crushed), magnesium compounds.
Minnesota	1,420,000	8	3.63	Iron ore (usable), sand and gravel (construction), stone (crushed), sand and gravel (industrial), stone (dimension).
Mississippi	160,000	41	0.41	Sand and gravel (construction), cement (portland), clays (fuller's earth), stone (crushed), clays (ball).
Missouri	1,350,000	9	3.45	Cement (portland), stone (crushed), lead, lime, zinc.
Montana	497,000	28	1.27	Palladium, gold, copper, cement (portland), sand and gravel (construction).
Nebraska	156,000	42	0.40	Cement (portland), stone (crushed), sand and gravel (construction), lime, cement (masonry).
Nevada	2,880,000	2	7.37	Gold, sand and gravel (construction), silver, lime, copper.
New Hampshire 2/	56,400	47	0.14	Sand and gravel (construction), stone (crushed), stone (dimension), gemstones.
New Jersey	287,000	37	0.74	Stone (crushed), sand and gravel (construction), sand and gravel (industrial), greensand marl, peat.
New Mexico	715,000	21	1.83	Copper, potash, sand and gravel (construction), cement (portland), stone (crushed).
New York	997,000	15	2.55	Stone (crushed), salt, cement (portland), sand and gravel (construction), zinc.
North Carolina	742,000	19	1.90	Stone (crushed), phosphate rock, sand and gravel (construction), sand gravel (industrial), clays (common).
North Dakota	40,600	48	0.10	Sand and gravel (construction), lime, stone (crushed), clays (common), sand and gravel (industrial).
Ohio	1,040,000	13	2.67	Stone (crushed), sand and gravel (construction), salt, lime, cement (portland).
Oklahoma	441,000	31	1.13	Stone (crushed), cement (portland), sand and gravel (construction), sand and gravel (industrial), iodine (crude).
Oregon	319,000	35	0.82	Stone (crushed), sand and gravel (construction), cement (portland), diatomite, lime.
Pennsylvania 2/	1,230,000	11	3.15	Stone (crushed), cement (portland), sand and gravel (construction), lime, cement (masonry).
Rhode Island 2/	22,100	49	0.06	Stone (crushed), sand and gravel (construction), sand and gravel (industrial), gemstones.
South Carolina	562,000	26	1.44	Cement (portland), stone (crushed), cement (masonry), sand and gravel (construction), gold.
South Dakota	254,000	38	0.65	Gold, cement (portland), sand and gravel (construction), stone (crushed), stone (dimension).
Tennessee	769,000	18	1.97	Stone (crushed), zinc, cement (portland), sand and gravel (construction), clays (ball).
Texas	1,860,000	5	4.77	Cement (portland), stone (crushed), sand and gravel (construction), lime, salt.
Utah	1,290,000	10	3.30	Copper, gold, sand and gravel (construction), magnesium metal, cement (portland).
Vermont 2/	67,200	46	0.17	Stone (dimension), stone (crushed), sand and gravel (construction), talc and pyrophyllite, gemstones.
Virginia	650,000	23	1.66	Stone (crushed), cement (portland), sand and gravel (construction), lime, clays (fuller's earth).
Washington	662,000	22	1.70	Sand and gravel (construction), stone (crushed), magnesium metal, cement (portland), gold.
West Virginia	173,000	40	0.44	Stone (crushed), cement (portland), sand and gravel (industrial), lime, salt.
Wisconsin 2/	348,000	34	0.89	Stone (crushed), sand and gravel (construction), lime, sand and gravel (industrial), stone (dimension).
Wyoming	1,000,000	14	2.57	Soda ash, clays (bentonite), helium (Grade-A), cement (portland), stone (crushed).
Undistributed	64,300	XX	0.16	
Total	39,100,000	XX	100.00	

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Partial total; excludes values that must be concealed to avoid disclosing company proprietary data. Concealed values included with "Undistributed."

TABLE 4
VALUE OF NONFUEL MINERAL PRODUCTION PER CAPITA AND PER SQUARE KILOMETER IN 1999, BY STATE 1/

State	Area (square kilometers)	Population (thousands)	Total value (thousands)	Per capita		Per square kilometer	
				Dollars	Rank	Dollars	Rank
Alabama	134,000	4,370	\$993,000	227	12	7,420	15
Alaska	1,530,000	620	1,080,000	1,740	2	705	49
Arizona	295,000	4,780	2,480,000	518	6	8,390	10
Arkansas	138,000	2,550	497,000	195	15	3,600	29
California	411,000	33,100	3,320,000	100	28	8,080	11
Colorado	270,000	4,060	574,000	141	19	2,130	40
Connecticut	13,000	3,280	90,000 2/	27	48	6,920	19
Delaware	5,290	754	10,800 2/	14	50	2,040	41
Florida	152,000	15,100	2,020,000	134	21	13,300	2
Georgia	153,000	7,790	1,640,000	211	14	10,700	4
Hawaii	16,800	1,190	86,400	73	39	5,160	25
Idaho	216,000	1,250	406,000	324	9	1,870	42
Illinois	146,000	12,100	896,000	74	38	6,140	22
Indiana	93,700	5,940	719,000	121	24	7,670	13
Iowa	146,000	2,870	489,000	170	16	3,360	30
Kansas	213,000	2,650	600,000	226	13	2,820	32
Kentucky	105,000	3,960	504,000	127	23	4,820	26
Louisiana	124,000	4,370	414,000	95	32	3,350	31
Maine	86,200	1,250	103,000	82	37	1,190	47
Maryland	27,100	5,170	316,000 2/	61	42	11,700	3
Massachusetts	21,500	6,180	193,000	31	47	8,980	9
Michigan	152,000	9,860	1,580,000	160	17	10,400	6
Minnesota	219,000	4,780	1,420,000	297	10	6,480	20
Mississippi	124,000	2,770	160,000	58	43	1,290	44
Missouri	181,000	5,470	1,350,000	246	11	7,460	14
Montana	381,000	883	497,000	563	5	1,310	43
Nebraska	200,000	1,670	156,000	94	34	780	48
Nevada	286,000	1,810	2,880,000	1,590	3	10,100	7
New Hampshire	24,000	1,200	56,400 2/	47	45	2,350	38
New Jersey	20,200	8,140	287,000	35	46	14,200	1
New Mexico	315,000	1,740	715,000	411	7	2,270	39
New York	127,000	18,200	997,000	55	44	7,840	12
North Carolina	136,000	7,650	742,000	97	29	5,440	24
North Dakota	183,000	634	40,600	64	41	222	50
Ohio	107,000	11,300	1,040,000	93	36	9,730	8
Oklahoma	181,000	3,360	441,000	131	22	2,430	36
Oregon	251,000	3,320	319,000	96	30	1,270	45
Pennsylvania	117,000	12,000	1,230,000 2/	102	27	10,500	5
Rhode Island	3,140	991	22,100 2/	22	49	7,050	16
South Carolina	80,600	3,890	562,000	145	18	6,980	18
South Dakota	200,000	733	254,000	346	8	1,270	46
Tennessee	109,000	5,480	769,000	140	20	7,040	17
Texas	691,000	20,000	1,860,000	93	35	2,700	35
Utah	220,000	2,130	1,290,000	606	4	5,870	23
Vermont	24,900	594	67,200 2/	113	26	2,700	34
Virginia	106,000	6,870	650,000	95	33	6,150	21
Washington	176,000	5,760	662,000	115	25	3,750	28
West Virginia	62,800	1,810	173,000	96	31	2,750	33
Wisconsin	145,000	5,250	348,000 2/	66	40	2,390	37
Wyoming	253,000	480	1,000,000	2,100	1	3,970	27
Undistributed	XX	XX	64,300	XX	XX	XX	XX
Total or average	9,370,000 3/	272,000 3/	39,100,000	144	XX	4,170	XX

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Partial total; excludes values that must be concealed to avoid disclosing company proprietary data. Concealed values included with "Undistributed."

3/ Excludes Washington, DC (which has no mineral production), with an area of 179 square kilometers and a population of 519,000.

Sources: U.S. Geological Survey and U.S. Census Bureau.

TABLE 5
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
Alabama:						
Cement:						
Masonry	346	36,200 e/	371	39,100 e/	429	47,600 e/
Portland	4,280	344,000 e/	4,310	353,000 e/	4,300	349,000 e/
Clays, common	2,590	25,400	2,400	23,100	2,320	23,700
Gemstones	NA	860	NA	76	NA	76
Lime	1,830	115,000	1,960	119,000	1,930	114,000
Sand and gravel:						
Construction	13,400	58,800	14,400	64,100	15,500	68,900
Industrial	734	9,730	757	9,910	687	9,780
Stone:						
Crushed	42,000	273,000	48,900	383,000	49,400	358,000
Dimension	W	W	W	W	7,210	2,380
Combined values of clays [bentonite, fire (1997-98), kaolin], iron oxide pigments (crude), salt, and values indicated by symbol W	XX	17,600	XX	18,500	XX	20,400
Total	XX	881,000	XX	1,010,000	XX	993,000
Alaska:						
Gemstones	NA	11	NA	11	NA	11
Gold 3/ 4/ kilograms	18,400	196,000	18,300	174,000	15,700	141,000
Sand and gravel, construction	12,500	57,400	11,200 r/	59,800 r/	9,620	48,500
Stone, crushed 5/	3,350 r/	23,600 r/	1,700	9,970	1,800	9,900
Combined values of copper, lead, silver, stone [crushed dolomite and limestone (1997), crushed dolomite, limestone, shell, slate (1998-99)], zinc	XX	688,000 r/	XX	728,000 r/	XX	880,000
Total	XX	965,000 r/	XX	971,000 r/	XX	1,080,000
Arizona:						
Copper 3/	1,250	2,940,000 r/	1,190	2,060,000	1,050	1,760,000
Gemstones	NA	2,360	NA	2,120	NA	1,950
Gold 3/ kilograms	2,140	22,800	1,840	17,400	786	7,080
Molybdenum concentrates metric tons	14,200 r/	W	16,600	W	16,000	W
Sand and gravel:						
Construction	39,500	187,000	47,900	229,000	54,500	296,000
Industrial	330	3,160	307	3,290	268	3,720
Silver 3/ metric tons	190	29,900	211	34,700	183	30,900
Stone, crushed	7,490	44,000	8,080	44,800	9,010	54,100
Zeolites metric tons	(6/)	NA	(6/)	NA	(6/)	NA
Combined values of cement, clays (bentonite, common), gypsum, (crude), iron oxide pigments (crude), lime, mica, perlite (crude), pumice and pumicite, salt, stone (dimension sandstone), and values indicated by symbol W	XX	313,000 r/	XX	344,000 r/	XX	319,000
Total	XX	3,540,000 r/	XX	2,740,000 r/	XX	2,480,000
Arkansas:						
Clays, common	979	1,400	995	1,370	1,010	1,510
Gemstones	NA	980	NA	912	NA	731
Sand and gravel, construction	10,600	48,100	12,100	55,400	11,300	53,200
Silica stone 7/ metric tons	424	2,540	404	3,400	W	W
Stone, crushed	28,100	167,000	35,700	180,000	30,700	145,000
Combined values of bromine, cement, clays (kaolin), gypsum (crude), lime, sand and gravel (industrial), stone (dimension limestone, marble, sandstone), tripoli, and value indicated by symbol W	XX	188,000 r/	XX	242,000	XX	296,000
Total	XX	408,000 r/	XX	484,000	XX	497,000
California:						
Asbestos metric tons	6,890	W	5,760	W	7,190	W
Boron minerals	604 8/	580,000	1,170	486,000	1,220	630,000
Cement:						
Masonry	169	13,500 e/	410	39,600 e/	466	38,300 e/
Portland	10,300	705,000 e/	10,000	746,000 e/	10,300	817,000 e/

See footnotes at end of table.

TABLE 5--Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
California--Continued:						
Clays:						
Bentonite	29	3,420	29	2,700	23	2,110
Common	937	10,300	918	9,610	829	13,100
Kaolin	75	W	W	W	W	W
Gemstones	NA	1,330	NA	1,810	NA	1,100
Gold 3/ kilograms	24,200	258,000	18,700	177,000	17,500	157,000
Lime	200	20,300	185	18,100	W	W
Rare-earth metal concentrates metric tons	10,000 r/ e/	W	5,000 e/	14,400 e/	5,000 e/	14,400 e/
Sand and gravel:						
Construction	115,000	668,000	135,000	801,000	145,000	897,000
Industrial	1,920	44,900	1,740	40,400	1,790	43,700
Silver 3/ metric tons	23	3,630	11	1,860	8	1,290
Stone:						
Crushed	49,600	325,000	55,100	344,000	60,300	388,000
Dimension metric tons	26,200	4,300	28,500	4,710	29,400	4,930
Zeolites do.	--	--	(6/)	NA	(6/)	NA
Combined values of clays (fire, fuller's earth), diatomite, feldspar, gypsum (crude), iron ore (usable), magnesium compounds, mercury (1997), perlite (crude), potash (1997), pumice and pumicite, salt, soda ash, sodium sulfate [natural (1997-98)], talc and pyrophyllite, titanium concentrates (ilmenite), and values indicated by symbol W						
	XX	373,000 r/	XX	318,000	XX	310,000
Total	XX	3,010,000 r/	XX	3,000,000	XX	3,320,000
Colorado:						
Clays:						
Bentonite	--	--	W	W	1	W
Common	258	1,970	257	1,840	373	2,530
Gemstones	NA	254	NA	257	NA	261
Lime	30	1,850	40	1,820	40	2,380
Sand and gravel, construction	32,100	142,000	42,900	195,000	45,200	217,000
Stone:						
Crushed	9,720	60,800	12,000	63,800	13,200	75,500
Dimension metric tons	10,800	3,250	14,200	3,410	14,700	3,430
Combined values of cement, gold, gypsum (crude), helium (Grade-A), lead, molybdenum concentrates, peat (1997-98), sand and gravel (industrial), silver, zinc, and values indicated by symbol W						
	XX	313,000	XX	306,000 r/	XX	273,000
Total	XX	524,000	XX	572,000 r/	XX	574,000
Connecticut:						
Clays, common	48	90	55	W	55	183
Gemstones	NA	5	NA	5	NA	6
Sand and gravel, construction	5,410	24,800	6,380	29,200	6,510	32,400
Stone, crushed	5,760	55,300	7,660	69,400	7,170	57,400
Total 9/	XX	80,200	XX	98,700	XX	90,000
Delaware:						
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	2,540	12,400	2,560	11,500	2,100	10,800
Total 9/	XX	12,400	XX	11,500	XX	10,800
Florida:						
Cement:						
Masonry	406	36,200 e/	442	40,600 e/	494	50,900 e/
Portland	3,750	274,000 e/	3,470	259,000 e/	3,500	260,000 e/
Clays, kaolin	W	W	W	W	35	3,830
Gemstones	NA	1	NA	1	NA	1
Peat	361	5,710	391	7,360	408	8,180

See footnotes at end of table.

TABLE 5--Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
Florida--Continued:						
Sand and gravel:						
Construction	19,200	75,500	20,900	84,600	27,200	114,000
Industrial	507	5,800	525	6,150	509	6,370
Stone, crushed	73,600 r/ 5/	394,000 r/ 5/	81,000 5/	377,000 5/	92,300	469,000
Combined values of clays (common, fuller's earth), magnesium compounds, phosphate rock, staurolite, stone [crushed marl (1997-98)], titanium concentrates, zirconium concentrates, and values indicated by symbol W	XX	1,040,000	XX	1,030,000	XX	1,110,000
Total	XX	1,830,000	XX	1,810,000	XX	2,020,000
Georgia:						
Clays:						
Common	1,820	11,600	1,650	5,470	1,600	5,130
Fuller's earth	576	70,500	686	74,800	725	73,800
Kaolin	8,200	977,000	8,350	998,000	8,170	907,000
Gemstones	NA	8	NA	8	NA	9
Sand and gravel:						
Construction	6,410	24,600	7,130	29,500	7,200	30,100
Industrial	520	9,330	608	10,900	612	11,100
Stone:						
Crushed 5/	65,600 r/	431,000 r/	74,200	440,000	74,200	448,000
Dimension metric tons	65,800 5/	8,480 5/	72,100	8,790	83,400	12,200
Combined values of barite, cement, feldspar, iron oxide pigments (crude), lime, mica (crude), stone [crushed marble, dimension marble (1997)]	XX	144,000	XX	152,000	XX	153,000
Total	XX	1,680,000 r/	XX	1,720,000	XX	1,640,000
Hawaii:						
Cement:						
Masonry	3	332 e/	3	329 e/	3	298 e/
Portland	252	29,600 e/	251	25,600 e/	254	24,700 e/
Gemstones	NA	66	NA	77	NA	55
Sand and gravel, construction	378	4,210	368	4,590	508	5,840
Stone, crushed	5,560	59,500	5,500	53,900	5,870	55,500
Total	XX	93,700	XX	84,500	XX	86,400
Idaho:						
Antimony metric tons	356	W	242	W	449	W
Gemstones	NA	687	NA	321	NA	368
Gold 3/ kilograms	7,490	80,100	W	W	W	W
Pumice and pumicite metric tons	83,100	758	73,400	686	98,600	917
Sand and gravel:						
Construction	14,800	42,700	16,600	52,400	15,500	48,200
Industrial	630	7,950	710	8,470	711	11,200
Silver 3/ metric tons	341	53,600	447	73,200	416	70,100
Stone:						
Crushed	3,910 5/	18,700 5/	4,180	18,400	4,220	19,000
Dimension	W	W	15,900	4,710	39,300	5,510
Combined values of cement [masonry (1997), portland], copper, feldspar, garnet (industrial), lead, lime, molybdenum, perlite [crude, (1999)], phosphate rock, stone [crushed quartzite (1997), dimension quartzite and miscellaneous (1997)] vanadium ore, zinc, and values indicated by symbol W	XX	264,000	XX	281,000 r/	XX	250,000
Total	XX	469,000	XX	439,000 r/	XX	406,000
Illinois:						
Cement, portland	2,590	186,000 e/	2,690	207,000 e/	2,940	215,000 e/
Clays, common	100	533	123	560	134	616
Gemstones	NA	8	NA	8	NA	8

See footnotes at end of table.

TABLE 5--Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
Illinois--Continued:						
Sand and gravel:						
Construction	33,400	143,000	34,100	150,000	34,100	147,000
Industrial	4,610	67,900	4,580	71,100	4,460	71,100
Stone, crushed	65,700	357,000	72,100 5/	371,000 5/	76,700 5/	387,000 5/
Combined values of clays (fuller's earth), lime, peat, stone [crushed sandstone (1998-99)], tripoli	XX	73,600	XX	75,400	XX	75,100
Total	XX	829,000	XX	875,000	XX	896,000
Indiana:						
Cement, portland	2,400	168,000 e/	2,500	176,000 e/	2,510	178,000 e/
Clays, common	947	2,040	681	1,330	752	1,480
Gemstones	NA	3	NA	3	NA	3
Sand and gravel:						
Construction	21,900	93,100	24,000	101,000	29,500	126,000
Industrial	W	W	W	W	175	1,860
Stone:						
Crushed 5/	59,000	280,000	61,600	283,000	59,500	273,000
Dimension metric tons	190,000 5/	24,900 5/	220,000	28,200	255,000	33,500
Combined values of cement (masonry), clays [ball, (1998)], gypsum (crude), lime, peat, sand and gravel (industrial), stone [crushed slate, dimension dolomite (1997)], and values indicated by symbol W	XX	101,000	XX	102,000	XX	106,000
Total	XX	670,000	XX	691,000	XX	719,000
Iowa:						
Cement, portland	2,550	195,000 e/	2,610	211,000 e/	W	W
Clays, common	287	976	301	1,040	302	1,040
Gemstones	NA	91	NA	4	NA	2
Gypsum, crude	2,080	12,200	W	W	W	W
Sand and gravel, construction	12,600	51,300	13,500	58,500	13,500	60,600
Stone, crushed	37,300	215,000	41,800	219,000	42,100	212,000
Combined values of cement (masonry), lime, peat, sand and gravel (industrial), and values indicated by symbol W	XX	12,500	XX	27,700	XX	216,000
Total	XX	486,000	XX	518,000	XX	489,000
Kansas:						
Cement, portland	1,690	122,000 e/	1,800	138,000 e/	1,970	149,000 e/
Clays, common	545	2,500	585	2,510	592	2,770
Gemstones	NA	291	NA	29	NA	21
Helium, Grade-A million cubic meters	51	101,000	56	110,000	61	121,000
Salt	3,210	120,000	3,090	120,000	2,780	115,000
Sand and gravel, construction	11,200	31,600	10,800	31,400	10,800	31,300
Stone:						
Crushed	23,000	116,000	21,800	115,000	23,600	116,000
Dimension metric tons	21,000 3/	1,710 3/	15,800	1,240	16,100	1,640
Combined values of cement (masonry), clays (fuller's earth), gypsum (crude), helium (crude), pumice and pumicite, sand and gravel (industrial), stone [dimension sandstone (1997)]	XX	44,200	XX	31,400	XX	63,700
Total	XX	539,000	XX	551,000	XX	600,000
Kentucky:						
Clays, common	865	3,910	872	3,930	892	3,790
Gemstones	NA	3,520	NA	263	NA	292
Sand and gravel, construction	8,140	26,600	8,100	27,500	9,620	32,400
Stone, crushed 3/	63,200 r/	294,000 r/	59,500	291,000	60,500	310,000
Combined values of cement, clays (ball, fire), lime, stone [crushed sandstone (1997-98) crushed miscellaneous (1999)]	XX	172,000	XX	175,000	XX	158,000
Total	XX	500,000 r/	XX	498,000	XX	504,000

See footnotes at end of table.

TABLE 5--Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
Louisiana:						
Clays, common	556	9,060	620	11,100	626	11,700
Gemstones	NA	15	NA	5	NA	7
Salt	15,300	169,000	14,900	173,000	16,500	193,000
Sand and gravel:						
Construction	10,400	46,600	11,400	53,800	16,500	81,700
Industrial	644	11,200	623	12,100	636	10,400
Stone, crushed	1,570 5/	16,100 5/	W	W	W	W
Combined values of gypsum (crude), lime, stone [crushed limestone and sandstone (1999), crushed limestone and miscellaneous (1997), crushed sandstone (1998)], sulfur (Frasch), and values indicated by symbol W	XX	151,000 r/	XX	96,300	XX	118,000
Total	XX	403,000 r/	XX	347,000	XX	414,000
Maine:						
Gemstones	NA	230	NA	228	NA	229
Sand and gravel, construction	6,280	28,400	7,640	33,400	8,570	40,300
Stone, crushed	2,540	15,100	4,120	23,000	3,990	23,900
Combined values of cement, clays (common), peat, stone (dimension granite)	XX	26,500	XX	35,000	XX	38,400
Total	XX	70,200	XX	91,600	XX	103,000
Maryland:						
Cement:						
Masonry	W	W	W	W	110	10,000 e/
Portland	1,790	115,000 e/	1,760	123,000 e/	1,730	124,000 e/
Clays, common	287	1,010	339	1,380	335	1,380
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	10,100	65,400	10,400	60,500	8,970	56,500
Stone:						
Crushed 5/	24,700 r/	161,000 r/	24,300	141,000	22,200	121,000
Dimension metric tons	21,500	2,440	23,100	2,730	26,000	3,160
Combined values of sand and gravel [industrial (1997-98)] and stone [crushed marble and traprock (1997-98)], and values indicated by symbol W	XX	26,800 r/	XX	23,700	XX	(6/)
Total	XX	371,000	XX	352,000	XX	316,000 9/
Massachusetts:						
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	13,500	71,500	14,000	78,000	12,700	75,200
Stone:						
Crushed	12,200 5/	91,300 5/	12,800	96,900	11,600	89,900
Dimension metric tons	101,000	18,100	85,800	17,600	70,400	16,900
Combined values of clays (common), lime, peat (1997), sand and gravel (industrial), stone [crushed miscellaneous (1997)]	XX	11,700	XX	12,000	XX	10,800
Total	XX	193,000	XX	204,000	XX	193,000
Michigan:						
Cement:						
Masonry	289	23,800 e/	294	28,000 e/	283	28,100 e/
Portland	5,700	422,000 e/	5,710	435,000 e/	5,810	439,000 e/
Clays, common	712	3,750	644	4,520	615	3,550
Gemstones	NA	1	NA	1	NA	1
Gypsum, crude	1,920	17,300	1,830	15,000	2,170	15,700
Lime	802	42,600	761	40,300	781	43,900
Peat	176	4,990	190	5,500	195	4,520
Sand and gravel:						
Construction	62,000	223,000	66,900	245,000	70,200	245,000
Industrial	2,680	30,000	2,390	25,700	2,550	28,100
Stone, crushed 5/	42,000	157,000	43,700	167,000	42,500	146,000
Combined values of bromine, iron ore (usable), iron oxide pigments (crude), magnesium compounds, potash, salt, stone [crushed marl and miscellaneous, dimension dolomite and sandstone]	XX	728,000 r/	XX	706,000	XX	625,000
Total	XX	1,650,000 r/	XX	1,670,000	XX	1,580,000

See footnotes at end of table.

TABLE 5--Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
Minnesota:						
Gemstones	NA	5	NA	5	NA	6
Iron ore, usable	47,900	1,410,000 r/	47,200	1,470,000	45,900	1,150,000
Peat	29	1,500	30	1,630	W	W
Sand and gravel, construction	34,500	127,000	39,400	154,000	37,300	142,000
Stone:						
Crushed	14,600	75,000	13,600 5/	71,500 5/	13,400 5/	65,700 5/
Dimension metric tons	33,200	17,900	48,100	18,800	42,700	20,700
Combined values of clays (common), lime, sand and gravel (industrial), stone [crushed sandstone, (1998-99)], and value indicated by symbol W	XX	23,900	XX	23,000	XX	35,200
Total	XX	1,660,000 r/	XX	1,740,000	XX	1,420,000
Mississippi:						
Clays:						
Common	503	3,460	502	3,410	497	3,390
Fuller's earth	388	28,100	372	30,400	377	29,400
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	13,000	59,600	13,300	64,400	12,100	58,900
Stone, crushed 5/	5,180	32,900	789	2,790	1,760	15,900
Combined values of cement (portland), clays (ball, bentonite), sand and gravel (industrial), stone (crushed marl)	XX	51,300	XX	58,400 r/	XX	52,300
Total	XX	175,000	XX	159,000 r/	XX	160,000
Missouri:						
Cement, portland	4,730	321,000 e/	4,570	323,000 e/	4,910	354,000 e/
Clays:						
Common	1,050	4,140	1,030	4,440	1,080	4,180
Fire	297	4,280	288	4,220	293	3,980
Copper 3/	8	19,200 r/	5	9,090	W	W
Sand and gravel, construction	9,530	35,600	9,470	39,300	12,400	50,300
Stone, crushed	68,400 r/	349,000 r/	68,400	356,000	73,400	349,000
Combined values of cement (masonry), clays (fuller's earth), gemstones, iron ore (usable), iron oxide pigments (crude), lead, lime, sand and gravel (industrial), silver, stone (dimension granite), zinc, and value indicated by symbol W	XX	570,000 r/	XX	575,000 r/	XX	584,000
Total	XX	1,300,000 r/	XX	1,310,000 r/	XX	1,350,000
Montana:						
Gemstones	NA	1,120	NA	453	NA	294
Gold 3/ kilograms	10,200	109,000	8,200	77,900	7,570	68,100
Lead 3/ metric tons	9,230	9,470	7,310	7,300	7,950	7,660
Palladium, metal kilograms	8,430 r/	49,900 r/	10,600	98,500 r/	9,800	114,000
Platinum, metal do.	2,610	33,200	3,240	38,800	2,920	35,600
Sand and gravel, construction	8,390	30,800	8,550	34,900	12,000	50,700
Stone:						
Crushed	2,600	10,600	3,880	15,100	3,440	13,300
Dimension	W	W	W	W	9,500	1,440
Zinc 3/ metric tons	W	W	24,900	28,200	22,200	26,100
Combined values of cement [masonry (1997-98), portland], clays (bentonite, common), copper, garnet (industrial), iron ore [usable, (1998-99)], lime, molybdenum concentrates, peat, sand and gravel [industrial, (1997)], silver, stone [dimension, miscellaneous (1997-98)], talc and pyrophyllite, and values indicated by symbol W	XX	254,000	XX	206,000 r/	XX	180,000
Total	XX	498,000	XX	507,000 r/	XX	497,000

See footnotes at end of table.

TABLE 5--Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
Nebraska:						
Clays, common	189	675	134	345	133	W
Gemstones	NA	3	NA	3	NA	3
Lime	17	1,360	19	1,580	18	1,510
Sand and gravel, construction	13,700	46,700	13,800	47,000	12,000	40,800
Stone, crushed	6,900	46,000	7,490	49,800	7,090	44,500
Combined values of cement (1999), sand and gravel [industrial (1999)], and value indicated by symbol W	XX	(6/)	XX	(6/)	XX	69,400
Total	XX	94,800 9/	XX	98,700 9/	XX	156,000
Nevada:						
Clays:						
Bentonite	W	W	W	W	6	W
Fuller's earth	W	W	W	W	25	3,580
Gemstones	NA	474	NA	159	NA	205
Gold 3/ kilograms	243,000	2,600,000	273,000	2,590,000	257,000	2,310,000
Sand and gravel, construction	23,600	110,000	26,400	114,000	31,700	142,000
Silver 3/ metric tons	878	138,000	670	110,000	597	101,000
Stone, crushed	5,150	41,800	6,320	34,000	7,090	37,900
Zeolites metric tons	(6/)	NA	(6/)	NA	--	--
Combined values of barite, brucite, cement (portland), clays (kaolin), copper, diatomite, gypsum (crude), iron ore [usable (1998-99)], lime, lithium minerals, magnesite, mercury (1997, 1999), perlite (crude), salt, sand and gravel (industrial) and values indicated by symbol W	XX	382,000 r/	XX	320,000	XX	286,000
Total	XX	3,270,000 r/	XX	3,170,000 r/	XX	2,880,000
New Hampshire:						
Gemstones	NA	6	NA	6	NA	6
Sand and gravel, construction	8,440	36,400	8,590	40,000	7,950	36,700
Stone, crushed 5/	2,010 r/	12,500 r/	4,190	27,500	4,290	19,700
Total 9/	XX	48,900 r/	XX	67,600	XX	56,400
New Jersey:						
Clays, common	W	131	W	W	W	W
Gemstones	NA	1	NA	1	NA	1
Sand and gravel:						
Construction	16,100	85,300	16,600	90,800	16,500	91,500
Industrial	1,530	28,300	1,800	34,400	1,580	32,100
Stone, crushed	22,800	153,000	23,900	161,000	24,500	160,000
Combined values of greensand marl (1998-99) and peat (1998-99) and values indicated by symbol W	XX	(6/)	XX	3,080	XX	3,200
Total	XX	267,000 9/	XX	290,000	XX	287,000
New Mexico:						
Clays:						
Common	32	168	33	173	W	W
Fire	1	17	1	17	1	W
Copper 3/	259	612,000	252	438,000	197	330,000
Gemstones	NA	W	NA	W	NA	13
Sand and gravel, construction	9,390	46,600	11,100	53,300	10,600	53,000
Stone:						
Crushed	2,920 5/	15,700 5/	4,940 5/	21,000 5/	3,720	22,200
Dimension	W	W	W	W	17,900	2,320
Zeolites metric tons	(6/)	NA	(6/)	NA	(6/)	NA
Combined values of cement, gold, gypsum (crude), iron ore (usable), mica (crude), molybdenum concentrates, perlite (crude), potash, pumice and pumicite, salt, sand and gravel [industrial (1999)], silver, stone [crushed sandstone and traprock (1998), crushed traprock (1997), dimension granite and marble (1997), dimension miscellaneous (1998)], and values indicated by symbol W	XX	363,000	XX	341,000 r/	XX	308,000
Total	XX	1,040,000 r/	XX	853,000 r/	XX	715,000

See footnotes at end of table.

TABLE 5--Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
New York:						
Clays, common	477	12,100	622	16,100	W	W
Gemstones	NA	70	NA	64	NA	68
Salt	3,590	183,000	4,120	198,000	4,220	209,000
Sand and gravel, construction	28,500	144,000	32,100	161,000	29,900	152,000
Stone:						
Crushed	44,400	285,000	47,200	279,000	46,700	268,000
Dimension metric tons	54,700	9,380	52,900	8,870	49,300	8,940
Combined values of cement, garnet (industrial), gypsum (crude), lead, peat, sand and gravel (industrial), silver, talc and pyrophyllite, wollastonite, zinc, and value indicated by symbol W	XX	321,000	XX	309,000	XX	358,000
Total	XX	955,000	XX	972,000	XX	997,000
North Carolina:						
Clays, common	2,460	11,900	2,380	11,600	2,430	18,700
Feldspar metric tons	467,000	18,700	381,000	16,800	381,000	16,100
Gemstones	NA	368	NA	968	NA	2,860
Sand and gravel:						
Construction	11,100	61,200	10,900	58,000	11,600	62,900
Industrial	1,600	26,400	1,440	24,100	1,470	27,300
Stone:						
Crushed	64,300 r/	468,000 r/	69,700	480,000	67,000	459,000
Dimension metric tons	24,200	12,100	26,200	12,500	54,700	17,700
Combined values of clays (kaolin), lithium minerals (1997-98), mica (crude), olivine, peat, phosphate rock, talc and pyrophyllite	XX	143,000	XX	146,000	XX	138,000
Total	XX	742,000 r/	XX	750,000	XX	742,000
North Dakota:						
Clays, common	56	W	42	W	54	W
Gemstones	NA	3	NA	3	NA	3
Sand and gravel, construction	9,360	26,800	10,700	30,400	11,700	33,000
Stone, crushed	--	--	71 5/	232 5/	W	W
Combine values of lime, peat (1998-99), sand and gravel (industrial), stone [crushed limestone, volcanic cinder, miscellaneous (1999), crushed volcanic cinder (1998)], and values indicated by symbol W	XX	6,890	XX	7,630	XX	7,580
Total	XX	33,700	XX	38,300	XX	40,600
Ohio:						
Cement, portland	1,040	76,900 e/	W	W	1,130	90,800 e/
Clays:						
Common	1,450	7,050	1,530	7,290	1,710	8,170
Fire	61	2,860	62	2,810	W	W
Gemstones	NA	3	NA	3	NA	3
Lime	1,960	111,000	1,870	109,000	1,820	105,000
Sand and gravel:						
Construction	47,000	222,000	52,600	255,000	52,000	257,000
Industrial	1,140	28,600	1,110	27,700	1,150	30,700
Stone:						
Crushed	74,100	357,000 r/	75,600	352,000	73,200	328,000
Dimension metric tons	24,900	3,260	24,100	2,360	25,600	2,390
Combined values of cement (masonry), gypsum (crude), peat, salt, silica stone 3/ (1997-98), and values indicated by symbol W	XX	193,000	XX	276,000	XX	220,000
Total	XX	1,000,000 r/	XX	1,030,000	XX	1,040,000

See footnotes at end of table.

TABLE 5--Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
Oklahoma:						
Cement:						
Masonry	89	6,500 e/	96	7,140 e/	W	W
Portland	1,900	132,000 e/	1,830	132,000 e/	W	W
Clays, common	653	4,430	658	4,450	757	2,050
Gemstones	NA	354	NA	53	NA	268
Gypsum, crude	3,100	17,500	3,020	19,500	3,510	20,100
Iodine, crude	metric tons	1,320	1,490	22,700	1,620	23,800
Sand and gravel:						
Construction	8,250	29,000	9,000	35,900	10,200	41,200
Industrial	1,380	28,200	1,380	29,600	1,470	30,900
Stone:						
Crushed	31,400 r/ 5/	108,000 r/ 5/	38,500	152,000	36,300	145,000
Dimension	metric tons	5,770	3,480	635	3,480	635
Combined values of feldspar, helium, lime, salt, stone [crushed miscellaneous (1997)], tripoli, and values indicated by symbol W						
	XX	38,600 r/	XX	55,600 r/	XX	177,000
Total	XX	384,000 r/	XX	460,000	XX	441,000
Oregon:						
Clays, common	W	W	177	W	240	77
Gemstones	NA	980	NA	1,500	NA	949
Sand and gravel, construction	19,100	100,000	18,600	99,200	16,900	105,000
Stone, crushed	21,200	110,000	23,200	118,000	23,800	112,000
Zeolites	metric tons	(6/)	(6/)	NA	(6/)	NA
Combine value of cement [masonry (1997), portland], clays (bentonite), diatomite, emery, lime, perlite (crude), pumice and pumicite, talc and pyrophyllite, and values indicated by symbol W						
	XX	74,100	XX	82,400	XX	101,000
Total	XX	285,000	XX	301,000	XX	319,000
Pennsylvania:						
Cement:						
Masonry	296	31,000 e/	319	31,100 e/	330	35,800 e/
Portland	6,360	420,000 e/	6,740	457,000 e/	6,690	479,000 e/
Clays, common	839	2,740	886	2,270	816	1,760
Gemstones	NA	1	NA	1	NA	1
Lime	1,510	103,000	1,390	97,800	1,340	94,300
Peat	3	126	6	154	6	185
Sand and gravel, construction	15,700	88,500	19,200	116,000	18,600	115,000
Stone:						
Crushed	89,200	536,000	94,500	504,000	92,500	490,000
Dimension	metric tons	53,900	45,200	9,480	50,800	12,600
Combined values of clays [kaolin, (1997-98)], sand and gravel [industrial (1997-98)], tripoli (1997-98)						
	XX	10,700	XX	11,800	XX	(6/)
Total	XX	1,200,000	XX	1,230,000	XX	1,230,000 9/
Rhode Island:						
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	1,960	15,700	1,390	11,100	1,310	9,900
Stone, crushed	1,830	11,500	2,240	14,200	2,070	12,200
Total 9/	XX	27,200	XX	25,300	XX	22,100
South Carolina:						
Cement:						
Masonry	334	35,500 e/	374	43,700 e/	421	49,400 e/
Portland	2,520	194,000 e/	2,640	210,000 e/	2,610	205,000 e/
Clays:						
Common	1,080	2,850	1,220	3,950	1,130	4,930
Fire	--	--	36	38	35	45
Kaolin	447	29,000	395	22,000	408	15,700
Gemstones	NA	1	NA	1	NA	1
Sand and gravel:						
Construction	8,130	30,400	9,690	35,900	9,660	38,200
Industrial	770	19,300	881	20,700	769	18,400

See footnotes at end of table.

TABLE 5--Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
South Carolina--Continued:						
Stone:						
Crushed	25,900	202,000	28,000	182,000	29,200	193,000
Dimension	12,900	1,150	12,900	1,150	9,230	855
Combined values of gold, lime (1999), manganese ore (1997), mica (crude), silver, vermiculite, and value indicated by symbol W						
Total	XX	54,200 r/	XX	42,600	XX	37,100
Total	XX	567,000	XX	562,000	XX	562,000
South Dakota:						
Clay, common	182	W	188	W	183	W
Gemstones	NA	98	NA	W	NA	5
Gold 3/ kilograms	W	W	12,100	115,000	9,940	89,500
Gypsum, crude	51	469	W	W	W	W
Sand and gravel, construction	10,200	34,100	10,100	35,600	12,400	45,600
Silver 3/ metric tons	4	693	2	321	W	W
Stone, crushed	5,900	30,200	5,720	24,600	6,020	26,500
Combined values of cement, feldspar, iron ore (usable), lime, mica (crude), stone (dimension granite), and values indicated by symbol W						
Total	XX	263,000	XX	83,100	XX	92,000
Total	XX	328,000	XX	258,000	XX	254,000
Tennessee:						
Clays, ball	689	29,200	712	30,100	725	30,100
Gemstones	NA	9,740	NA	W	NA	W
Sand and gravel:						
Construction	8,650	39,500	9,410	49,800	9,640	53,100
Industrial	898	16,500	999	17,100	W	W
Stone, crushed	60,400	349,000	63,600	370,000	63,100	382,000
Combined values of barite, cement, clays (common, fuller's earth, kaolin), copper, lead, lime, salt (1998-99), silver, stone (dimension marble), zinc, and values indicated by symbol W						
Total	XX	263,000	XX	237,000	XX	304,000
Total	XX	707,000	XX	705,000	XX	769,000
Texas:						
Cement:						
Masonry	203	18,900 e/	216	20,500 e/	261	29,400 e/
Portland	8,280	576,000 e/	8,430	621,000 e/	8,680	659,000 e/
Clays:						
Common	2,150	13,600	2,120	10,100	2,100	9,890
Kaolin	35	7,600	W	W	W	W
Gemstones	NA	11	NA	11	NA	11
Gypsum, crude	2,260	15,700	2,260	15,500	2,230	15,700
Lime	1,470	91,500	1,620	101,000	1,580	105,000
Salt	9,780	91,000	9,420	83,900	10,200	97,500
Sand and gravel:						
Construction	60,100	284,000	74,600	354,000	77,100	373,000
Industrial	1,800 r/	41,600 r/	1,760	38,500	1,620	37,100
Stone:						
Crushed	81,000	338,000	99,300	397,000	109,000	449,000
Dimension metric tons	35,300	11,300	40,900	16,700	82,500	24,200
Talc and pyrophyllite do.	274,000	6,760	274,000	6,770	220,000	5,000
Zeolites do.	(6/)	NA	(6/)	NA	(6/)	NA
Combined values of clays (ball, bentonite, fuller's earth), helium, magnesium compounds (1997-98), magnesium metal (1997-98), sodium sulfate (1997), sulfur (Frasch), and values indicated by symbol W						
Total	XX	281,000	XX	158,000	XX	58,400
Total	XX	1,780,000 r/	XX	1,820,000	XX	1,860,000

See footnotes at end of table.

TABLE 5--Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999		
	Quantity	Value	Quantity	Value	Quantity	Value	
Utah:							
Beryllium concentrates	metric tons	5,760	6	6,080	7	5,070	6
Clays, common		299	4,510	298	4,760	327	4,600
Gemstones		NA	974	NA	W	NA	1,040
Salt		1,670	69,000	1,770	68,100	1,890	92,000
Sand and gravel, construction		33,200	99,400	46,300	140,000	39,500	125,000
Stone, crushed		11,100	50,200	7,820	39,500	8,780	45,300
Combined values of cement (portland), clays [bentonite, fuller's earth (1997)], copper, gold, gypsum (crude), helium (Grade-A), lime, magnesium compounds, magnesium metal, mercury (1997-98), molybdenum concentrates, perlite [crude (1998-99)], phosphate rock, potash, silver, stone [dimension (1999)], and value indicated by symbol W		XX	1,450,000	XX	1,090,000 r/	XX	1,020,000
Total		XX	1,680,000	XX	1,340,000 r/	XX	1,290,000
Vermont:							
Gemstones		NA	1	NA	1	NA	1
Sand and gravel, construction		3,890	15,800	4,940	21,200	4,430	18,800
Stone:							
Crushed		7,840	44,500	5,590	28,500	5,400	22,800
Dimension	metric tons	88,300	19,700	93,300	24,500	98,600	25,600
Total 9/		XX	80,000	XX	74,200	XX	67,200
Virginia:							
Clays, common		830	3,160	872	3,310	881	3,240
Kyanite		W	W	90 e/	13,200 e/	90 e/	12,700 e/
Lime		818	49,300	859	51,700	W	W
Sand and gravel, construction		10,700	52,700	11,900	54,800	11,300	53,800
Stone:							
Crushed		61,300 r/	377,000 r/	65,900	390,000	66,400	389,000
Dimension		W	W	5,430	600	5,640	624
Titanium, ilmenite	metric tons	--	--	W	W	139,000	13,900
Combine values of cement, clays (fuller's earth), feldspar, gemstones, gypsum (crude), iron oxide pigments (crude), sand and gravel (industrial), stone [dimension dolomite, granite, slate and traprock (1997)], talc and pyrophyllite (1997), vermiculite, zirconium concentrate (1998-99), and values indicated by symbol W		XX	109,000	XX	122,000	XX	176,000
Total		XX	591,000 r/	XX	636,000	XX	650,000
Washington:							
Cement, portland		1,210	92,400 e/	1,200	95,500 e/	W	W
Clays, common		165	715	178	W	110	W
Gemstones		NA	23	NA	24	NA	34
Gold 3/	kilograms	4,040	43,200	3,540	33,600	3,250	29,200
Gypsum, crude		12	549	--	--	W	W
Sand and gravel, construction		46,300 r/	180,000	45,700	214,000	43,800	227,000
Silver 3/	metric tons	2	285	1	102	W	W
Stone, crushed		14,700	92,200	19,400	111,000	19,500	146,000
Combined values of cement [masonry (1997-98)], diatomite, lime, magnesium metal, olivine, peat, sand and gravel (industrial), stone [dimension miscellaneous], and values indicated by symbol W		XX	146,000	XX	156,000	XX	260,000
Total		XX	555,000	XX	609,000	XX	662,000
West Virginia:							
Clays, common		151	323	231	515	336	813
Gemstones		NA	1	NA	1	NA	1
Sand and gravel, construction		1,670	8,010	1,650	8,050	1,850	9,030
Stone, crushed 5/		12,900	76,700	12,300	68,100	13,000	58,500

See footnotes at end of table.

TABLE 5--Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
West Virginia--Continued:						
Combined values of cement, lime, peat, salt, sand and gravel (industrial), stone [crushed dolomite, dimension sandstone]	XX	120,000	XX	93,000	XX	104,000
Total	XX	205,000	XX	170,000	XX	173,000
Wisconsin:						
Gemstones	NA	5	NA	5	NA	6
Lime	597	35,100	582	35,400	618	37,000
Peat	5	256	W	W	W	W
Sand and gravel:						
Construction	33,500	110,000	34,700	116,000	35,700	128,000
Industrial	1,710	33,800	1,750	34,500	1,730	32,000
Stone:						
Crushed	28,700	120,000	31,200	127,000	34,500	137,000
Dimension metric tons	100,000	13,100	77,100	10,800	85,500	13,400
Combined values of copper (1997), gold (1997), silica stone 7/ (1997), silver (1997), and values indicated by symbol W	XX	46,600	XX	(6/)	XX	(6/)
Total	XX	358,000	XX	323,000 9/	XX	348,000 9/
Wyoming:						
Clays, bentonite	3,340	140,000	3,150	145,000	3,370	146,000
Gemstones	NA	11	NA	14	NA	12
Sand and gravel, construction	3,090	12,300	4,770	18,100	4,410	17,200
Stone, crushed	5,010	30,700	5,580	31,600	6,970	27,600
Zeolites metric tons	(6/)	NA	(6/)	NA	--	--
Combined values of cement (portland), clays (common), gypsum (crude), helium (Grade-A), lime, soda ash	XX	938,000	XX	879,000	XX	814,000
Total	XX	1,120,000	XX	1,070,000	XX	1,000,000
Undistributed:						
Connecticut, stone (dimension quartz), and value indicated by symbol W; Delaware, magnesium compounds; Maryland, sand and gravel [industrial (1999)], stone [crushed marble, sehll, traprock (1999)], and values indicated by symbol W; Nebraska, cement (1997-98), sand and gravel [industrial (1997-98)], and value indicated by symbol W; New Hampshire, stone (crushed sandstone and dimension granite); New Jersey, greensand marl (1997), peat (1997), and values indicated by symbol W; Pennsylvania, sand and gravel [industrial (1999)] and tripolli (1999); Rhode Island, sand and gravel (industrial); Vermont, talc, and pyrophyllite; Wisconsin, peat (1998-99), silica stone 7/ (1998-99), and values indicated by symbol W; undistributed (1998)	XX	100,000 r/	XX	98,200	XX	64,300

e/ Estimated. r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data, value included with "Combined value." XX Not applicable. -- Zero.

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Data are rounded to no more than three significant digits; may not add to totals shown.

3/ Recoverable content of ores, etc.

4/ Data collected by State.

5/ Excludes certain stones; kind and value included with "Combined value."

6/ Withheld to avoid disclosing company proprietary data.

7/ Grindstones, pulpstones, and sharpening stones; excludes mill liners and grinding pebbles.

8/ Weight reported as B₂O₃ and is not comparable to prior years.

9/ Partial total, excludes values that must be concealed to avoid disclosing company proprietary data. Withheld values included with "Undistributed."

TABLE 6
NONFUEL RAW MINERAL PRODUCTION IN THE COMMONWEALTH OF PUERTO RICO AND ISLANDS ADMINISTERED
BY THE UNITED STATES 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999	
	Quantity	Value	Quantity	Value	Quantity	Value
Puerto Rico:						
Cement, portland	metric tons	W	(3/)	1,590	W	W
Clays, common		W	363	W	W	159
Lime		32	4,580	37	4,800	27
Salt		45	1,500	45	1,500	45
Stone, crushed		14,000	71,300	12,700	58,600	13,200
Combined values of other industrial minerals		XX	(3/)	XX	156,000	XX
Total		XX	77,700 4/	XX	221,000	XX
Administered Islands:						
Guam, stone, crushed		1,760	10,500	1,850	14,100	1,740

NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined values" data. XX Not applicable.

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Data are rounded to no more than three significant digits; may not add to totals shown.

3/ Withheld to avoid disclosing company proprietary data.

4/ Total does not include value of sand and gravel [industrial, (1997)] and stone [dimension marble (1997)] withheld.

TABLE 7
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1998		1999		
	Quantity	Value	Quantity	Value	
Metals:					
Aluminum:					
Crude and semicrude	metric tons	1,590,000	3,620,000	1,640,000	3,530,000
Manufactures	do.	106,000	369,000	106,000	374,000
Antimony:					
Metal, alloys, waste and scrap	do.	898	2,400	473	1,810
Oxide, antimony content	do.	3,270	11,100	3,190	10,000
Arsenic metal	do.	505	2,730	1,350	4,650
Bauxite and alumina:					
Alumina, calcined equivalent		1,280	488,000	1,230	435,000
Bauxite:					
Calcined, refractory and other grade		16	2,420	34	6,570
Crude and dried		83	9,350	115	10,100
Speciality aluminum compounds, sulfate, chloride, fluoride-based	metric tons	35,500	30,500	38,800	29,300
Beryllium, alloys, wrought or unwrought, waste and scrap	kilograms	57,700	9,940	39,600	6,770
Bismuth, metal, alloys, waste and scrap, bismuth content	do.	245,000	2,380	257,000	2,000
Cadmium:					
Metal	do.	180,000	966	20,400	523
Sulfide	do.	28,900	15	107,000	28
Chromium:					
Chemicals	metric tons	41,000	64,900	41,800	55,600
Chromite ore and concentrate	do.	121,000	9,230	110,000	8,580
Metals, alloys, ferroalloys	do.	7,650	19,700	8,160	22,100
Pigments and preparations	do.	2,310	8,170	1,470	6,200
Cobalt:					
Metal:					
Unwrought, powders, waste and scrap, mattes other intermediate products of metallurgy	do.	1,140	43,400	1,100	34,000
Wrought and cobalt articles	do.	667	33,900	546	26,400
Oxides and hydroxides	do.	533	11,300	521	8,140
Other forms, acetates and chlorides	do.	674	4,140	307	3,100
Columbium (niobium) and tantalum:					
Columbium:					
Ferrocolumbium	do.	23	206	166	1,110
Ores and concentrates	do.	20	181	12	566
Tantalum:					
Ores and concentrates, includes synthetic	do.	390	3,060	317	7,280
Unwrought, alloys, metal, powders, waste and scrap	do.	401	52,900	418	65,000
Wrought	do.	83	28,600	132	43,500
Copper:					
Scrap, alloyed and unalloyed	do.	307,000	401,000	315,000	366,000
Semimanufactures	do.	135,000 r/	481,000 r/	141,000	451,000
Unmanufactured, does not include unalloyed scrap, copper content	do.	172,000	278,000	131,000	199,000
Ferroalloys not listed elsewhere:					
Ferrophosphorous	do.	2,150	1,020	1,100	699
Ferrotitanium and ferrosilicon-titanium	do.	2,030	5,840	1,210	2,650
Ferrozirconium	do.	130	597	51	155
Ferroalloys, other	do.	2,110	3,260	3,370	6,030
Gold:					
Bullion, refined	kilograms	430,000	4,030,000	435,000	3,880,000
Compounds	do.	781,000	9,340	561,000	14,100
Doré and precipitates	do.	91,600	810,000	87,300	778,000
Metal powder	do.	196	2,060	270	2,800
Ores and concentrates	do.	401	3,460	117	1,180
Waste and scrap	do.	58,900	374,000	40,000	302,000
Indium	metric tons	--	--	25	5,500

See footnotes at end of table.

TABLE 7--Continued
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1998		1999		
	Quantity	Value	Quantity	Value	
Metals--Continued:					
Iron and steel:					
Cast iron and steel products	223	627,000	203	447,000	
Fabricated steel products	1,210	3,590,000	1,120	3,640,000	
Steel mill products	5,010	4,590,000	4,920	4,260,000	
Iron and steel scrap:					
Direct-reduced iron, steelmaking grade	5	487	3	302	
Ferrous, includes tinplate and template, excludes used rails for rerolling and other uses, ships boats, other vessels for scrapping	5,570	805,000	5,520	738,000	
Pig iron, all grades	87	11,700	83	11,100	
Ships, boats, other vessels for scrapping	3	925	7	2,610	
Used rails for rerolling and other uses, includes mixed (new plus used) rails	39	14,200	37	14,300	
Iron ore	6,000	245,000	6,120	243,000	
Lead, lead content:					
Ash and residues	metric tons	9,030	6,870	1,430	2,000
Base bullion	do.	51,600	77,800	64,100	76,200
Ore and concentrate	do.	72,400	27,600	93,500	33,400
Scrap, gross weight	do.	99,200	19,900	117,000	22,000
Unwrought lead and lead alloys	do.	24,100	20,600	23,400	17,700
Wrought lead and lead alloys	do.	15,400	41,300	13,900	38,500
Magnesium:					
Alloys, gross weight	do.	9,220 r/	29,800	2,760	11,300
Metal	do.	11,500	31,100	4,790	14,600
Powder, sheets, tubing, ribbons, wire, other forms, gross weight	do.	1,470	9,560	4,990	20,200
Waste and scrap	do.	13,200	30,100	16,500	46,500
Manganese:					
Ferromanganese, all grades	do.	13,800	8,450	11,600	6,510
Metal, including alloys, waste and scrap	do.	5,710	13,200	3,540	7,940
Ore and concentrates with 20% or more manganese	do.	8,210	1,330	4,170	651
Silicomanganese	do.	6,720	4,190	3,700	2,180
Mercury	do.	63	401	181	1,120
Molybdenum, molybdenum content:					
Ferromolybdenum	do.	1,390 r/	11,400	1,510	12,400
Ore and concentrates, including roasted and other	do.	41,700	211,000	27,900	129,000
Oxides and hydroxides, gross weight	do.	1,100	8,340	1,130	8,510
Molybdates, all	do.	1,590	11,400	1,300	7,050
Powder, gross weight	do.	321	8,650	362	7,540
Unwrought, gross weight	do.	181	3,200	167	2,430
Wire, gross weight	do.	212	11,000	200	13,900
Wrought, gross weight	do.	133	7,200	147	8,050
Nickel, nickel content:					
Alloyed, gross weight	do.	26,000	436,000	27,300	371,000
Unwrought:					
Primary and chemicals, enclues carbonate	do.	8,440	147,000	7,440	140,000
Secondary	do.	35,100	230,000	31,400	192,000
Wrought	do.	992	10,800	922	11,500
Platinum-group metals, metal content:					
Iridium, osmium, ruthenium	kilograms	905 r/	11,300 r/	851	11,200
Palladium	do.	36,700 r/	200,000 r/	44,000	272,000
Platinum	do.	20,900 r/	342,000 r/	27,100	520,000
Rhodium	do.	811 r/	15,600 r/	114	5,310
Rare-earths, estimated REO content:					
Cerium compounds	do.	4,640,000	39,600	3,960,000	18,400
Compounds	do.	1,630,000	16,600	1,690,000	19,600
Ferrocerium and other pyrophoric alloys	do.	2,460,000 r/	10,600 r/	2,360,000	10,700
Metals, including scandium and yttrium	do.	724,000 r/	3,750 r/	1,600,000	5,280
Selenium, metal, waste and scrap, selenium content	do.	151,000	2,130	233,000	1,900
Silicon, gross weight:					
Ferrosilicon	metric tons	44,800	35,900	46,600	40,100
Metal	do.	23,700	278,000	37,700	281,000

See footnotes at end of table.

TABLE 7--Continued
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1998		1999	
	Quantity	Value	Quantity	Value
Metals--Continued:				
Silver, silver content:				
Bullion kilograms	2,250,000	466,000	481,000	84,400
Doré do.	241,000	49,000	64,400	11,400
Metal powder, gross weight do.	290,000	45,200	324,000	55,100
Nitrate, gross weight do.	164,000	26,300	62,500	7,330
Ores and concentrates do.	6,540	1,480	70,800	14,200
Semimanufactured forms containing 99.5% or more by weight of silver, gross weight do.	154,000	31,600	122,000	28,700
Waste and scrap, gross weight do.	1,060,000	224,000	1,310,000	223,000
Unwrought, other, gross weight do.	39,900	8,050	75,100	14,400
Thorium and thorium-bearing materials, compounds do.	1,130	278	2,520	318
Tin:				
Ingots and pigs metric tons	5,020	29,200	6,770	38,100
Tin scrap and other tin bearing material, except tinplate scrap, includes rods, profiles, wire, powders, flakes, tubes, pipes do.	36,100	51,200	33,200	561,000
Tinplate and terneplate do.	262,000	162,000	290,000	172,000
Titanium:				
Metal:				
Wrought, bars, rods, other do.	5,790	283,000	5,260	239,000
Unwrought				
Sponge and waste and scrap do.	7,360	16,000	8,940	17,500
Other, billet, blooms, sheet bars, ingot do.	3,870	93,400	2,470	35,100
Ores and concentrates do.	59,700	5,180	9,380	5,350
Pigments, dioxide and oxides do.	398,000	633,000	384,000	627,000
Tungsten, tungsten content:				
Ammonium paratungstate do.	287	2,200	103	911
Carbide powder do.	1,240	25,200	701	16,900
Metal powders do.	851	25,700	711	19,000
Miscellaneous tungsten-bearing materials, ferrotungsten, ferrosilicon tungsten, unwrought, waste and scrap, wrought, other metal, compounds do.	1,260	33,000	1,340	33,900
Ores and concentrates do.	10	300	26	826
Vanadium:				
Aluminum-vanadium master alloy, gross weight kilograms	856,000	11,500	514,000	6,440
Ferrovandium, vanadium content do.	579,000	13,700	213,000	3,180
Metal, including waste and scrap, gross weight do.	346,000	7,160	177,000	3,200
Pentoxide, anhydride, vanadium content do.	681,000	6,850	747,000	4,270
Other oxides and hydroxides, vanadium content do.	232,000	2,830	69,700	656
Zinc:				
Compounds, chloride, compounds, n.s.p.f., oxide, sulfate metric tons	12,800 r/	16,500	16,100	20,100
Ores and concentrates, zinc content do.	552,000	248,000	531,000	317,000
Slab do.	2,330	2,750	1,880	2,220
Rolled do.	9,920	8,710	3,870	5,500
Zirconium:				
Ore and concentrates do.	41,000	22,100	69,500	27,300
Oxide, includes germanium oxides and zirconium oxides do.	1,540	14,300	1,680	14,100
Unwrought and waste and scrap do.	160 r/	3,450 r/	156	3,160
Total	XX	26,100,000	XX	25,100,000
Industrial minerals:				
Abrasives, manufactured:				
Boron carbide metric tons	25	980	17	652
Fused aluminum oxide do.	8,910	19,600	9,020	20,400
Metallic abrasives do.	25,800	15,700	26,600	17,900
Silicon carbide, crude, refined or ground do.	11,600	13,600	300	2,500
Asbestos, includes reexports:				
Manufactured	XX	194,000	XX	237,000
Unmanufactured metric tons	18,100	6,410	21,700	7,960
Barite, natural barium sulfate do.	14,700	2,310	21,800	2,750

See footnotes at end of table.

TABLE 7--Continued
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1998		1999		
	Quantity	Value	Quantity	Value	
Industrial minerals--Continued:					
Boron:					
Boric acid	106	54,600	107	56,700	
Sodium borates	453	146,000	370	180,000	
Bromine:					
Compounds, contained bromine	metric tons	8,550	18,000	8,020	16,000
Elemental	do.	1,490	3,440	2,110	2,430
Cement, hydraulic and clinker		743	56,600	694	55,200
Clays:					
Ball		140	9,860	107	6,080
Bentonite		818	82,400	719	75,300
Fire		168	19,400	189	16,500
Fuller's earth		121	19,500	152	24,600
Kaolin		3,550	573,000	3,310	567,000
Other, n.e.c., includes chamotte or dinas earth, activated clays and earths, artificially activated clays		432	139,000	329	133,000
Diamond, includes reexports, excludes industrial diamond	thousand carats	3,410	2,560,000	5,440	3,080,000
Diamond, industrial (exports and reexports):					
Industrial diamonds, unworked	do.	4,610	34,700	3,970	36,700
Powder, dust and grit, natural and synthetic	do.	108,000	88,900	101,000	68,100
Diatomite		138	43,800	123	39,700
Feldspar	metric tons	13,200	1,430	49,900	1,160
Fluorspar	do.	23,600 r/	3,890 r/	55,400	6,970
Graphite, natural and artificial 2/	do.	110,000	76,700 r/	102,000	82,800
Gypsum and gypsum products:					
Boards		65	24,500	52	22,900
Crude		166	11,700	112	11,000
Plasters		209	30,400	588	32,000
Other		XX	29,700	XX	27,400
Helium, Grade-A	million cubic meters	28	47,100	27	47,400
Iodine, crude/resublimed and potassium iodide	metric tons	2,790	26,100	1,130	18,000
Iron oxide pigments and hydroxides:					
Pigment grade	do.	14,600	18,200	13,800	15,200
Other grade	do.	27,500	47,400	30,100	59,800
Lime		56	9,110	59	8,020
Lithium chemicals:					
Carbonate	metric tons	3,280	12,300	2,710	9,670
Hydroxide	do.	4,360	17,900	4,940	21,200
Magnesium compounds:					
Compounds, chlorides, hydroxide and peroxide, sulfates	do.	27,800	14,800	28,900	12,300
Magnesite, crude and processed:					
Caustic-calcined magnesia	do.	5,430	2,410	3,190	1,680
Crude	do.	53,300	6,030	28,900	3,520
Dead-burned and fused magnesia	do.	63,200	23,700	66,700	25,200
Other magnesia	do.	13,300	11,600	15,800	13,300
Mica:					
Scrap and flake:					
Powder	do.	6,640	3,300	7,320	4,010
Waste	do.	1,410	464	3,950	1,290
Sheet:					
Unworked	do.	182 r/	1,660 r/	452	2,150
Worked	do.	671	10,700	840	16,600
Peat		30	3,180	40	4,310
Perlite, processed and expanded e/	metric tons	42,000	1,340	47,000	1,570
Phosphate rock, elemental phosphorous	do.	8,020	15,700	5,740	11,100
Pumice and pumicite		22	11,200	23	10,100
Salt		731	35,200	892	37,000
Sand and gravel:					
Construction:					
Gravel		482	7,480	378	7,080
Sand		1,860	30,300	1,270	20,800

See footnotes at end of table.

TABLE 7--Continued
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1998		1999	
	Quantity	Value	Quantity	Value
Industrial minerals--Continued:				
Sand and gravel--Continued:				
Industrial	2,400	148,000	1,670	133,000
Silica:				
Quartz crystal, cultured, electronic- and optical-grade metric tons	63	24,300	90	25,400
Special silica stone products	NA	5,900	NA	6,400
Soda ash	3,660	478,000	3,620	447,000
Stone:				
Crushed	4,370	41,500	4,120	30,800
Dimension	XX	59,600	XX	54,500
Strontium:				
Carbonate metric tons	686	655	3,860	2,470
Oxide, hydroxide, peroxide do.	639	373	854	470
Sulfur:				
Elemental	889	35,400	685	35,800
Sulfuric acid, 100% H ₂ SO ₄ metric tons	155,000	18,100	155,000	16,800
Talc, excludes powders, talcum in (package), face, compact	146	26,000	147	27,200
Vermiculite e/	11	1,040	7	882
Wollastonite e/	25,000	10,000	20,000	8,000
Zeolites e/	(3/)	(3/)	(3/)	100
Total	XX	5,490,000	XX	5,970,000
Grand total	XX	31,500,000	XX	31,000,000

e/ Estimated. r/ Revised. NA Not available. XX Not applicable. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Artificial graphite includes large amounts of materials made from petroleum coke.

3/ Less than 1/2 unit.

TABLE 8
U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1998		1999		
	Quantity	Value	Quantity	Value	
Metals:					
Aluminum:					
Crude and semicrude	metric tons	3,550,000	5,950,000	4,000,000	6,200,000
Manufactures	do.	155,000	387,000	191,000	452,000
Antimony:					
Metal	do.	13,500	18,900	14,800	18,500
Ore and concentrate, antimony content	do.	2,020	3,210	2,870	3,350
Oxide, antimony content	do.	19,100	35,500	19,100	28,900
Arsenic:					
Acid	do.	NA	5	4	24
Metal	do.	997	6,380	1,300	8,390
Trioxide	do.	38,600	18,800	29,100	14,700
Bauxite and alumina:					
Alumina, calcined equivalent		4,050	933,000	3,810	845,000
Bauxite:					
Calcined, refractory and other grade		393	29,300	299	28,000
Crude and dried		11,000	246,000	9,890	281,000
Speciality aluminum compounds, sulfate, chloride, fluoride-based	metric tons	55,100	28,200	51,200	31,500
Beryllium, ore, metal, compounds	kilograms	436,000	11,000	136,000	2,620
Bismuth, metallic	do.	2,720,000	19,200	2,110,000	15,300
Cadmium:					
Metal	do.	514,000 r/	837 r/	294,000	848
Sulfide	do.	9,460	187	18,400	95
Chromium:					
Chemicals	metric tons	20,100	35,500	22,900	39,600
Chromite ore	do.	358,000	26,200 r/	252,000	15,700
Ferrochromium, metals, alloys	do.	451,000	329,000	649,000	334,000
Pigments and preparations based on chromium	do.	9,500	30,200	9,590	30,000
Cobalt:					
Metal:					
Alloys, articles, matte, wrought, waste and scrap	do.	1,390	33,700	819	22,600
Unwrought, excluding alloys and waste and scrap	do.	6,450	284,000	6,800	229,000
Oxide and hydroxides	do.	1,210	41,500	1,260	33,700
Other forms	do.	1,310	13,600	1,610	12,400
Columbium (niobium) and tantalum:					
Columbium:					
Ferrocolumbium	do.	7,530	68,400	6,850	62,200
Ores and concentrates	do.	72	729	95	1,620
Oxide	do.	1,230	23,200	17,200	30,600
Unwrought, alloys, metals, powder	do.	563	14,600	468	13,500
Tantalum:					
Ores and concentrates, includes synthetic	do.	1,220	35,000	992	33,600
Unwrought, alloys, metal, powders, waste and scrap	do.	646	68,000	997	68,400
Wrought	do.	43	9,200	56	13,600
Copper:					
Scrap, alloyed and unalloyed	do.	135,000	234,000	108,000	167,000
Semimanufactures	do.	217,000	508,000	308,000	664,000
Unmanufactured, does not include unalloyed scrap, copper content	do.	1,050,000	1,830,000	1,170,000	1,910,000
Ferroalloys not listed elsewhere:					
Ferrophosphorus	do.	13,700	4,280	10,600	3,050
Ferrotitanium and ferrosilicon-titanium	do.	7,340	19,200	4,750	8,620
Ferrozirconium	do.	61	116	100	173
Ferroalloys, other	do.	34,800	55,500	32,000	46,600
Gallium, unwrought, and waste and scrap	kilograms	26,300	10,700	24,100	10,400
Germanium materials, gross weight	do.	14,600 r/	18,500 r/	12,400	10,400
Gold:					
Ash and residues	do.	4,670	4,930	133	1,760
Bullion, refined	do.	257,000	2,350,000	196,000	1,790,000
Compounds	do.	9,820	50,000	9,400	59,700

See footnotes at end of table.

TABLE 8--Continued
 U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1998		1999	
	Quantity	Value	Quantity	Value
Metals--Continued:				
Gold--Continued:				
Doré and precipitates kilograms	14,100	120,000	24,700	210,000
Metal powder do.	12,800	120,000	5,500	48,700
Ores and concentrates do.	2,540	22,300	117	1,130
Waste and scrap do.	16,700	102,000	30,500	94,100
Indium, unwrought and waste and scrap do.	75,000	18,600	77,400	14,500
Iron and steel:				
Cast iron and steel products	478	446,000	505	410,000
Fabricated steel products	3,480	5,380,000	4,020	5,780,000
Stainless steel metric tons	947,000 r/	1,770,000 r/	696,000	1,680,000
Steel mill products	37,700	16,300,000	32,400	12,600,000
Iron and steel scrap:				
Direct-reduced iron, steelmaking grade	939	118,000	950	86,500
Ferrous, includes tinplate and template, excludes used rails for rerolling and other uses, ships, boats, other vessels for scrapping	3,060	402,000	3,670	383,000
Pig iron, all grades	5,150	722,000	4,990	527,000
Ships, boats, other vessels for scrapping	--	--	(2/)	189
Used rails for rerolling and other uses, includes mixed (new plus used), rails	308	46,000	348	43,900
Iron ore	16,900 r/	517,000 r/	14,300	399,000
Lead, lead content:				
Base bullion metric tons	464	293	90	58
Ore and concentrates do.	32,700	6,560	12,300	3,100
Pigments and compounds, gross weight do.	40,600	58,300	37,700	56,100
Pigs and bars do.	267,000	166,000	311,000	175,000
Scrap, reclaimed, includes ash and residues do.	(2/)	3	--	--
Wrought lead, all forms, including wire and powders, gross weight do.	8,480	19,000	11,800	18,300
Magnesium:				
Alloys, magnesium content do.	49,600	167,000	56,500	180,000
Metal do.	26,500	75,700	26,900	78,000
Powder, sheets, tubing, ribbons, wire, other forms, gross weight do.	757	2,290	594	2,660
Waste and scrap do.	5,720	7,910	6,780	7,690
Manganese, manganese content:				
Chemicals, manganese dioxide and potassium permanganate, gross weight do.	34,300	50,000	42,600	61,200
Ferromanganese, all grades do.	266,000	162,000	245,000	149,000
Metal, unwrought, waste and scrap, other, gross weight do.	15,600	25,400	15,100	22,900
Ore and concentrates with 20% or manganese, all grades do.	160,000	27,800	224,000	34,200
Silicomanganese do.	231,000	159,000	202,000	121,000
Mercury do.	128	559	62	301
Molybdenum, molybdenum content:				
Ferromolybdenum do.	4,830	44,000	5,160	37,300
Molybdates, all do.	797	9,890 r/	813	7,380
Ore and concentrates, roasted and other do.	6,570	47,200 r/	6,390	35,700
Oxides and hydroxides, gross weight do.	1,180	9,400 r/	746	5,100
Powders do.	103	3,210	106	3,240
Unwrought do.	137	2,110	13	542
Wire, gross weight do.	6	500	8	638
Other, orange, mixtures of inorganic compounds, waste and scrap, other, gross weight do.	2,350	13,700	2,030	14,500
Nickel, nickel content:				
Alloyed, gross weight do.	12,100	183,000	13,300	184,000
Unwrought:				
Primary and chemicals, excludes carbonate do.	148,000	858,000	139,000	854,000
Secondary do.	8,500	50,500	9,480	54,800
Wrought do.	819	16,000	1,090	17,900

See footnotes at end of table.

TABLE 8--Continued
U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1998		1999		
	Quantity	Value	Quantity	Value	
Metals--Continued:					
Platinum-group metals, metal content:					
Iridium, unwrought and other forms	kilograms	1,950 r/	23,800 r/	2,270	25,100
Osmium, unwrought	do.	71 r/	814 r/	23	272
Palladium, unwrought and other	do.	176,000 r/	1,580,000 r/	189,000	2,090,000
Platinum	do.	101,000 r/	1,210,000 r/	129,000	1,150,000
Rhodium, unwrought and other forms	do.	13,500 r/	265,000 r/	10,500	276,000
Ruthenium, unwrought	do.	8,880 r/	12,700 r/	11,400	14,700
Rare-earths, estimated REO content:					
Cerium compounds, including oxides, hydroxides, nitrates, sulfate chlorides, oxalates	do.	4,940,000 r/	22,800	3,990,000	26,200
Compounds, including oxides, hydroxides, nitrates, other compounds except chlorides	do.	3,720,000 r/	69,100	7,760,000	71,600
Ferrocerium and other pyrophoric alloys	do.	117,000 r/	1,870 r/	120,000	1,920
Metals, whether intermixed or alloyed	do.	953,000 r/	14,000	178,000	18,500
Mixtures of rare-earth chlorides, except cerium chloride	do.	1,680,000 r/	8,860	1,530,000	6,960
Mixtures of rare-earth oxides except cerium oxide	do.	2,530,000	19,000	5,980,000	15,500
Yttrium compounds content by weight greater than 19% but less than 85% oxide equivalent	do.	64,400 r/	2,460	161,000	3,200
Rhenium:					
Ammonium perrhenate	do.	11,000	4,090	2,750	1,670
Metal	do.	14,200	13,600	12,800	14,000
Selenium and tellurium:					
Selenium, selenium content:					
Unwrought and waste and scrap	do.	325,000	4,290	311,000	3,110
Selenium dioxide	do.	14,400	285	15,700	160
Tellurium, unwrought, and waste and scrap, gross weight	do.	88,900	2,430	38,000	1,440
Silicon, gross weight:					
Ferrosilicon	metric tons	201,000	143,000	246,000	160,000
Metal	do.	105,000	223,000	116,000	235,000
Silver, silver content:					
Ash and residues	kilograms	47,200	8,760	101,000	8,970
Bullion	do.	2,800,000	509,000	2,660,000	453,000
Doré	do.	340,000	57,100	404,000	81,600
Metal powder, gross weight	do.	129,000	267,000	120,000	26,400
Nitrate, gross weight	do.	8,030	1,030	4,450	364
Ore and concentrates:					
Base metal	do.	14,200	2,390	2,750	440
Silver	do.	197,000 r/	34,500 r/	10,800	1,970
Semimanufactured forms containing 99.5% or more by weight of silver, gross weight	do.	181,000	35,700	139,000	24,000
Waste and scrap, gross weight	do.	1,800,000	97,500	1,640,000	121,000
Unwrought, other, gross weight	do.	102,000	18,400	126,000	22,200
Thallium, unwrought, waste and scrap, powders	do.	104	22	838	139
Thorium and thorium-bearing materials, compounds	do.	7,450	204	5,290	280
Tin, gross weight:					
Compounds	metric tons	482	3,610	411	3,550
Dross, skimmings, scrap, residues, tin alloys, n.s.p.f.	do.	4,600	4,590	3,870	7,840
Metal, unwrought	do.	44,000	244,000	47,500	255,000
Miscellaneous, includes tinfoil, tin powder, flitters, metallics, manufactures, n.s.p.f.	do.	NA	6,760	NA	4,830
Tinplate and terneplate	do.	291,000	186,000	449,000	255,000
Tinplate scrap	do.	72,100	6,380	58,000	5,270
Titanium:					
Concentrates:					
Ilmenite	do.	379,000	26,800	391,000	32,800
Slag	do.	626,000	239,000	678,000	265,000
Rutile, natural and synthetic	do.	387,000	155,000	344,000	140,000
Titaniferous iron ore	do.	24,000	2,850	10,700	2,620
Pigments, dioxides and oxides	do.	200,000	354,000	225,000	406,000

See footnotes at end of table.

TABLE 8--Continued
 U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1998		1999		
	Quantity	Value	Quantity	Value	
Metals--Continued:					
Titanium--Continued:					
Metal:					
Unwrought:					
Ingots and billets	metric tons	2,240	37,400	1,380	20,400
Other, includes blooms, sheet, bars, slabs, other unwrought	do.	264 r/	4,270 r/	10	423
Powder	do.	147	1,590	224	1,170
Sponge	do.	10,900	82,800	6,000	42,200
Waste and scrap	do.	9,770	34,600	6,870	19,500
Wrought products, bars, castings, foil, pipes, plates, profiles, rods, sheet, strip, tubes, wire, other	do.	3,900	89,700	2,910	74,100
Tungsten, tungsten content:					
Ammonium paratungstate	do.	1,920	11,100	1,920	10,200
Ferrotungsten and ferrosilicon tungsten	do.	599	3,890	669	3,760
Miscellaneous tungsten-bearing materials, metal powders, carbide powder, unwrought, waste and scrap, wrought wire, plate, sheet, strip, foil, other, oxides, calcium tungstate, other tungstates, other compounds	do.	5,950	73,200	5,650	62,700
Ores and concentrates	do.	4,750	21,900	2,870	12,400
Vanadium:					
Aluminum-vanadium master alloy, gross weight	kilograms	298,000	496	1,210,000	1,680
Ferrovandium, vanadium content	do.	1,620,000	39,300	1,930,000	20,700
Metal, including waste and scrap, gross weight	do.	12,200	491	30,400	779
Miscellaneous chemicals, sulfates and vanadates, vanadium content	do.	129,000	1,430	174,000	1,650
Pentoxide, anhydride, vanadium content	do.	847,000	12,300	208,000	1,920
Vanadium-bearing ash, residues, slag from the manufacture of iron and steel, vanadium pentoxide content	do.	4,280,000	20,500	2,950,000	8,680
Other oxides and hydroxides, vanadium content	do.	33,000	574	--	--
Zinc:					
Compounds, lithopone, chloride, compounds n.s.p.f., hydrosulfite, oxide, sulfate	metric tons	72,100	69,300	78,700	75,800
Ore and concentrates, zinc content	do.	46,300	23,700	74,600	40,500
Rolled	do.	16,900	19,400	22,600	26,200
Slab, refined	do.	879,000	956,000	966,000	966,000
Zirconium and hafnium:					
Hafnium, unwrought, and waste and scrap	do.	11	1,870 r/	9	1,770
Zirconium, ore and concentrates	do.	89,500	31,800	57,600	17,900
Zirconium oxide, includes germanium oxides and zirconium oxides	do.	3,900	35,600	3,140	27,800
Zirconium, unwrought and waste and scrap	do.	894	47,900	859	46,700
Total		XX	49,500,000 r/	XX	45,700,000
Industrial minerals:					
Abrasives, manufactured:					
Aluminum oxide, crude, ground and refined	metric tons	180,000	82,100	166,000	78,500
Boron carbide	do.	349	6,300	342	7,600
Metallic abrasives	do.	25,600	14,000	30,100	15,000
Silicon carbide, crude, ground and refined	do.	269,000	114,000	169,000	79,500
Asbestos, chrysotile, crocidolite, other unspecified fibers	do.	15,800	3,240	15,800	3,150
Barite:					
Chemicals	do.	47,200	40,400	48,800	36,800
Crude	do.	1,850,000	104,000	836,000	43,500
Ground	do.	--	--	17,200	1,250
Other sulfates of	do.	34,700	17,800	17,500	14,300
Boron, contained boric oxide:					
Borax		14	5,160	8	2,840
Boric acid		23	12,500	30	14,000
Colemanite		47	13,900	42	13,100
Ulexite		170	34,000	178	35,700

See footnotes at end of table.

TABLE 8--Continued
U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1998		1999		
	Quantity	Value	Quantity	Value	
Industrial minerals--Continued:					
Bromine:					
Compounds, contained bromine	metric tons	11,800	32,200	7,140	31,200
Elemental	do.	1,200	1,060	1,970	2,110
Cement, hydraulic and clinker		24,100	963,000	29,400	1,140,000
Clays:					
Artificially activated clay and activated earth	metric tons	18,900	9,630	17,500	7,530
Bentonite	do.	6,600	3,160	8,930	2,990
Chamotte or dina's earth	do.	1	2	--	--
China clay or kaolin	do.	52,900	12,600	57,200	10,600
Common blue clay and other ball clay	do.	2,670	563	827	199
Decolorizing earths and fuller's earth	do.	288	38	398	19
Fire clay	do.	2,150	184	260	93
Other clay	do.	2,900	1,610	5,250	1,560
Diamond, industrial:					
Diamond stones, natural and miners'	thousand carats	4,720	18,500	3,130	14,300
Powder, dust and grit, natural and synthetic	do.	221,000	96,400	208,000	92,300
Diatomite	metric tons	816	381	387	332
Feldspar and nepheline syenite:					
Feldspar	do.	6,560	601	6,840	757
Nepheline syenite	do.	320,000	24,100	311,000	23,200
Fluorspar:					
Aluminum fluoride	do.	22,400	19,300	19,300	16,700
Cryolite	do.	15,500 r/	9,320 r/	9,560	7,160
Fluorspar	do.	503,000	62,700	478,000	57,000
Hydrofluoric acid, HF	do.	124,000	114,000	120,000	120,000
Gemstones, excludes pearls		XX	9,250,000	XX	10,700,000
Graphite:					
Natural	metric tons	61,600	34,800	55,800	34,700
Electric furnace electrodes	do.	63,000	155,000	62,800	135,000
Gypsum:					
Boards		962	138,000	1,710	294,000
Crude		8,680	70,300	9,340	88,900
Plasters		12	2,570	14	3,470
Other		XX	50,800	XX	79,300
Helium, Grade-A	million cubic meters	(2/)	401	--	--
Iodine, crude and potassium iodide	metric tons	5,960	98,600	5,430	88,100
Iron oxide pigments:					
Natural	do.	4,910	2,380	7,450	3,710
Synthetic	do.	62,600	61,800	77,600	69,300
Kyanite and related materials, andalusite	do.	9,610	1,850	6,290	1,320
Lime		231	22,700	152	15,400
Lithium chemicals:					
Carbonate	metric tons	13,500	23,500	13,800	20,800
Hydroxide	do.	319	998	254	1,630
Magnesium compounds:					
Compounds, chlorides, hydroxide, peroxide, sulfates	do.	66,300	20,100	58,500	24,000
Magnesite, crude and processed:					
Caustic-calcined magnesia	do.	127,000	19,300	123,000	19,100
Crude	do.	4,590	1,840	7,900	1,720
Dead-burned and fused magnesia	do.	427,000	76,300	392,000	75,000
Other magnesia	do.	17,000	14,300	17,900	14,900
Mica:					
Scrap and flake:					
Powder	do.	15,500	9,120	20,600	11,300
Waste	do.	7,280	1,930	5,070	1,150
Sheet:					
Unworked	do.	3,060 r/	1,470 r/	2,770	1,520
Worked	do.	1,610	12,200	1,780	12,800
Nitrogen, major compounds, gross weight		10,100	1,470,000	10,600	1,410,000
Peat moss	metric tons	761,000	142,000	752,000	149,000

See footnotes at end of table.

TABLE 8--Continued
 U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS 1/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	1998		1999		
	Quantity	Value	Quantity	Value	
Industrial minerals--Continued:					
Perlite, processed	metric tons	150,000	4,790	144,000	4,820
Phosphate rock and phosphatic materials		2,040 r/	143,000 r/	2,390	162,000
Potash, chloride, nitrate, sodium nitrate mixtures, sulfate	metric tons	7,870,000	648,000	7,360,000	566,000
Pumice:					
Crude or unmanufactured		286	7,930	353	11,600
Wholly or partially manufactured		2	1,460	1	2,000
Salt		8,770	145,000	8,870	137,000
Sand and gravel:					
Construction		1,120	15,000	1,920	24,400
Industrial		44	2,750	211	5,590
Silica:					
Quartz crystal, cultured, electronic- and optical-grade	metric tons	47	12,200	26	11,000
Special silica stone products		NA	2,630	NA	6,200
Soda ash		83	10,800	92	11,100
Stone:					
Crushed, chips, calcium carbonate fines		13,600	116,000	12,300	106,000
Dimension		NA	698,000	NA	808,000
Strontium:					
Carbonate	metric tons	41,100	24,400	44,000	25,700
Metal	do.	318	2,260	315	1,770
Nitrate	do.	378	1,340	590	2,290
Oxide, hydroxide, peroxide	do.	132	314	267	600
Sulfate, celestite	do.	24,200	1,450	31,300	2,280
Sulfur:					
Elemental		2,270	58,400	2,580	51,600
Sulfuric acid, 100% H ₂ SO ₄		2,040	86,800	1,370	62,600
Talc, unmanufactured		165	23,300	208	35,300
Vermiculite e/		68	12,700	71	13,300
Wollastonite e/		5,000	1,250 r/	5,000	1,250
Zeolites e/	metric tons	(2/)	(2/)	200	40
Total		XX	15,500,000 r/	XX	17,200,000
Grand total		XX	65,000,000 r/	XX	62,800,000

e/ Estimated. r/ Revised. NA Not available. XX Not applicable. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

TABLE 9
COMPARISON OF WORLD AND U.S. PRODUCTION OF SELECTED NONFUEL MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Mineral or product	1998			1999			
	World	U.S.	U.S. percent of World	World	U.S.	U.S. percent of World	
Metals:							
Mine: 2/							
Antimony	metric tons	117,000 r/	498 r/	0.4 r/	122,000	449	0.4
Arsenic trioxide 3/	do.	40,000 r/	--	--	38,800	--	--
Bauxite 3/ 4/		122,000 5/	NA	NA	127,000 5/	NA	NA
Beryl 3/	metric tons	7,220	6,080	84.1 r/	6,210	5,070	81.7
Chromite 3/		13,500 r/	--	--	14,000	--	--
Cobalt	metric tons	35,300 r/	--	--	29,900	--	--
Columbium-tantalum concentrate 3/	do.	63,100 r/	--	--	57,100	--	--
Copper		12,200	1,860	15.2	12,600	1,600	12.7
Gold	kilograms	2,520,000 r/	366,000	14.6 r/	2,540,000	341,000	13.4
Iron ore 3/		1,060,000 r/	62,900	5.9 r/	990,000	57,700	5.8
Lead		3,080 r/	493	16.0 r/	3,020	520	17.2
Manganese ore 3/		20,200 r/	--	--	20,400	--	--
Mercury	metric tons	1,970 r/ 5/	NA	NA	1,800 e/ 5/	NA	NA
Molybdenum	do.	135,000	53,300	39.4 r/	123,000	43,000	35.1
Nickel	do.	1,140,000	--	--	1,120,000	--	--
Platinum-group metals	kilograms	348,000 r/	13,800	4.0 r/	379,000	12,700	3.4
Silver	metric tons	17,000 r/	2,060	12.1 r/	17,700	1,950	11.0
Tin	do.	208,000 r/	--	--	198,000	--	--
Titanium concentrates: 3/							
Ilmenite and leucoxene	do.	4,140,000 r/ 5/	W r/	NA r/	3,780,000 5/	W	NA
Rutile	do.	441,000 r/ 5/	W r/	NA	390,000 5/	W	NA
Tungsten	do.	32,000 r/	--	--	31,000	--	--
Vanadium	do.	44,700 r/ 5/	NA	NA	42,200 5/	NA	NA
Zinc		7,680 r/	755	9.8 r/	8,040	843	10.5
Refinery: 6/							
Aluminum 7/		22,500 r/	3,710	16.5 r/	23,100	3,780	16.4
Bismuth 7/	metric tons	4,080 r/	--	--	4,000	--	--
Cadmium	do.	19,100 r/	1,240 r/	6.5 r/	19,100	1,190	6.2
Cobalt 7/	do.	30,800 r/	--	--	31,200	--	--
Copper		14,100	2,490 r/	17.6	14,400	2,130	14.8
Iron and steel:							
Direct-reduced iron 7/		36,800 r/	1,600 r/	4.3 r/	38,500	1,670	4.3
Iron, pig 7/		539,000 r/	48,200	8.9	541,000	46,300	8.5
Steel, raw		776,000 r/	98,600	12.7 r/	786,000	97,400	12.4
Lead 8/		5,920 r/	1,450	24.5 r/	6,010	1,460	24.4
Magnesium	metric tons	472,000 r/	183,000 r/	38.8 r/	374,000	87,000 9/	23.3
Nickel 10/	do.	1,030,000 r/	4,290	0.4	1,050,000	--	--
Selenium 7/	kilograms	1,460,000 r/ 5/	W	NA	1,480,000 5/	W	NA
Tellurium 7/	do.	123,000 r/ 5/	W	NA	124,000 5/	W	NA
Tin, smelter 11/	metric tons	246,000 r/	16,300 r/	6.6 r/	269,000	16,300	6.1
Zinc, smelter		8,120 r/	368	4.5	8,400	371	4.4

See footnotes at end of table.

TABLE 9--Continued
COMPARISON OF WORLD AND U.S. PRODUCTION OF SELECTED NONFUEL MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Mineral or product	1998			1999			
	World	U.S.	U.S. percent of World	World	U.S.	U.S. percent of World	
Industrial minerals:							
Asbestos	metric tons	1,820,000 r/	5,760	0.3	1,930,000	7,190	0.4
Barite		6,500 r/	476 12/	7.3 r/	5,660	430 12/	7.6
Boron minerals		6,670 r/	1,170 r/ 12/	17.5 r/	6,370	1,220 12/	19.1
Bromine	metric tons	514,000	230,000 12/	44.7	526,000	239,000 12/	45.4
Celestite	do.	272,000 r/	--	--	269,000 e/	--	--
Cement, hydraulic		1,550,000 r/	85,500 13/	5.5 r/	1,610,000	87,800 13/	5.5
Clays:							
Bentonite		9,540 r/	3,820	40.1 r/	9,820	4,070	41.4
Fuller's earth		3,310 r/	2,350	71.0 r/	3,520	2,660	75.4
Kaolin		40,200 r/	9,450	23.5 r/	41,600	9,160	22.0
Diamond, natural	thousand carats	126,000 r/	--	--	12,000	--	--
Diatomite	metric tons	1,930,000 r/	725,000 12/	37.5 r/	1,960,000	747,000 12/	38.1
Feldspar		8,990 r/	820	9.1 r/	8,980	875	9.7
Fluorspar		4,460 r/	-- 14/	--	4,510	-- 14/	--
Graphite, natural	metric tons	683,000 r/	--	--	685,000	--	--
Gypsum		103,000 r/	19,000	18.4 r/	106,000	22,000	20.7
Iodine, crude	metric tons	18,400 r/	1,490	8.1 r/	19,300	1,620	8.4
Lime		144,000 r/	44,200 r/ 12/ 13/	30.8 r/	141,000	40,600 12/ 13/	28.7
Magnesite, crude		11,700 r/ 5/	W	NA	10,700 5/	W	NA
Mica, including scrap and flake 15/	metric tons	288,000	87,100	30.3 r/	304,000	104,000	34.1
Nitrogen, N content of ammonia		105,000 r/	13,800 r/ 16/	13.1 r/	109,000	14,100 16/	13.0
Peat 17/		23,000 r/	685 r/	3.0 r/	27,200	731	2.7
Perlite		1,770 r/	124 r/ 12/	7.0 r/	1,850	130 12/	7.0
Phosphate rock, gross weight		144,000 r/	44,200	30.8 r/	141,000	40,600	28.7
Potash, K ₂ O equivalent		25,700 r/	1,300	5.0 r/	25,700	1,200	4.7
Pumice		12,000 r/	583 12/	4.9 r/	11,600	643 12/	5.5
Salt		198,000 r/	41,300 13/	20.8 r/	209,000	45,000 13/	21.5
Sand and gravel, industrial, silica		108,000 r/	28,200 12/	26.0 r/	107,000	28,900 12/	27.0
Soda ash, natural and manufactured 18/		32,500 r/	10,100	31.2 r/	32,900	10,200	31.1
Sulfur, all forms		56,700 r/	11,600	20.5 r/	57,100	11,300	19.8
Talc and pyrophyllite 19/		9,430 r/	971 r/	10.3 r/	9,470	925	9.8
Vermiculite	metric tons	327,000 r/ 5/	W	NA	534,000	175,000	32.8

e/ Estimated. r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data. -- Zero.

1/ Data are rounded to no more than three significant digits.

2/ Content of ore and concentrate, unless otherwise specified.

3/ Gross weight.

4/ Individual country figures that are included in the world total represent dried bauxite equivalent of crude ore, but for some countries available data are insufficient to permit this adjustment.

5/ Does not include U.S. production.

6/ Primary and secondary, unless otherwise specified.

7/ Primary.

8/ Includes bullion.

9/ Secondary production only. U.S. primary production is withheld to avoid disclosing company proprietary data.

10/ Refined nickel plus nickel content of ferronickel, nickel oxide, and other nickel salts.

11/ Includes tin content of alloys made directly from ore.

TABLE 9--Continued
COMPARISON OF WORLD AND U.S. PRODUCTION OF SELECTED NONFUEL MINERAL COMMODITIES 1/

12/ Quantity sold or used by producers.

13/ Includes Puerto Rico.

14/ Shipments.

15/ Excludes U.S. production of low-quality sericite and sheet mica, if any.

16/ Synthetic anhydrous ammonia; excludes coke oven byproduct ammonia.

17/ Data for the United States exclude proprietary amounts of fuel peat.

18/ U.S. production is natural only.

19/ Data for the United States exclude proprietary pyrophyllite production.