

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 upon the 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 2003 U.S. Geological Survey (USGS) mineral production data published in this chapter are as of March 2005. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Specialist contact information may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

Because of inadequacies in the statistics available, some series deviate from the foregoing definition. For copper, gold, lead, silver, 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.

The total value of all nonfuel mineral production in the United States in 2003 increased to \$39.4 billion, which was an increase of almost 4.0% compared with that of 2002; metals increased to almost \$8.6 billion, which was an increase of almost 3.8%; and industrial minerals rose to \$30.8 billion, an increase of slightly more than 4.0%.

In 2003, the value of nonfuel mineral commodity production in the following eight commodities, in descending order of production value, was greater than \$1 billion: stone (crushed), cement (portland), sand and gravel (construction), gold, copper, lime, iron ore (usable), and salt. They accounted for more than 77% of the U.S. total production value (table 1).

In 2003, the value of nonfuel mineral commodity production in the following 13 States, in descending order of production value, was greater than \$1 billion: California, Nevada, Texas, Arizona, Florida, Georgia, Michigan, Utah, Missouri, Pennsylvania, Minnesota, Alaska, and Ohio. They accounted for almost 60% 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	2001		2002		2003		
	Quantity	Value	Quantity	Value	Quantity	Value	
Metals:							
Beryllium concentrates	metric tons	2,480	3	1,970	2	2,100	2
Copper ³		1,340	2,270,000	1,140	1,910,000	1,120	2,100,000
Gold ³	kilograms	335,000	2,930,000	298,000	2,980,000	277,000	3,250,000
Iron ore, usable		50,600	1,210,000	51,500	1,340,000	44,500	1,200,000
Iron oxide pigments, crude	metric tons	61,500	3,460	53,200 ^r	1,070	50,900	814
Lead ³	do.	454,000	437,000	440,000	423,000	449,000	433,000
Molybdenum concentrate ⁴	do.	37,600	198,000	32,300 ^r	232,000 ^r	33,600	324,000
Palladium ⁴	kilograms	12,100	237,000	14,800	162,000	14,000	91,400
Platinum ⁴	do.	3,610	61,900	4,390	76,500	4,170	93,100
Silver ³	do.	1,740,000	245,000	1,420,000	211,000	1,240,000	196,000
Zinc ³	metric tons	799,000	774,000	780,000	664,000	738,000	661,000
Combined values of magnesium metal, rare-earth concentrates, titanium concentrates, zirconium concentrates		XX	277,000	XX	258,000	XX	233,000
Total		XX	8,650,000	XX	8,260,000 ^r	XX	8,570,000
Industrial minerals, excluding fuels:							
Asbestos	metric tons	5,260	W	2,720	1,380	--	--
Barite		400	11,000	420	12,200	468	13,900
Boron		1,050	506,000	1,050	513,000	1,150	591,000
Bromine	metric tons	212,000	159,000	222,000	166,000	216,000	155,000
Cement:							
Masonry		4,450	477,000 ^e	4,450	480,000 ^e	4,740	468,000
Portland		84,500	6,350,000 ^e	85,300	6,350,000 ^e	88,100	6,460,000
Clays:							
Ball		1,100	45,200	1,120	47,000	1,310	56,200
Bentonite		4,290	187,000	3,970	180,000	3,940	177,000
Common		23,200	129,000	23,000	148,000	23,100	131,000
Fire		383	5,970	446	10,500	400	10,200
Fuller's earth		2,890	233,000	2,730	246,000	3,600	332,000
Kaolin		8,110	867,000	8,010	951,000	7,680	939,000
Diatomite		644	174,000	624	159,000	620	160,000
Feldspar	metric tons	800,000	44,100	790,000	42,800	800,000	43,400
Garnet, industrial	do.	52,700	6,430	38,500	4,500	29,200	3,170
Gemstones, natural		NA	14,900	NA	12,600	NA	12,500
Gypsum, crude		16,300	119,000	15,700	108,000	16,700	114,000
Helium:							
Crude	million cubic meters	46	50,200	50	63,600	49	67,000
Grade-A	do.	132	262,000	127	293,000	122	282,000
Iodine, crude	metric tons	1,290	18,400	1,420	21,600	1,090	15,900
Kyanite ^e		90	13,400	90	13,400	90	13,400
Lime		18,900	1,160,000	17,900	1,120,000	W	W
Mica, crude		98	7,990	81	7,340	79	16,700
Peat		820 ^r	21,100 ^r	728 ^r	21,000 ^r	632	18,800
Perlite, crude	metric tons	588,000	21,300	521,000	19,000	493,000	18,800
Phosphate rock, marketable		31,900	856,000	36,100	993,000	35,000	946,000
Potash		2,400	260,000	2,600	280,000	2,500	280,000
Pumice and pumicite	metric tons	618,000	18,000	950,000	22,900	870,000	21,900
Salt		42,200	1,110,000	37,700	1,010,000	41,100	1,130,000
Sand and gravel:							
Construction		1,130,000	5,670,000	1,130,000	5,750,000	1,160,000	5,990,000
Industrial		27,900	576,000	27,200	572,000	27,500	609,000
Silica stone ⁵	metric tons	393	4,040	386	3,740	513	3,630
Soda ash		10,300	773,000	10,500	784,000	10,600	765,000
Stone, crushed ⁶		1,600,000	8,920,000	1,520,000	8,690,000	1,530,000	9,160,000
Tripoli	metric tons	60,500	15,100	66,600	16,600	68,800	17,700
Zeolites	do.	W	NA	W	NA	W	NA

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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
Industrial minerals, excluding fuels--Continued:						
Combined values of brucite, emery (2002), greensand marl, lithium carbonate, magnesite, magnesium compounds, olivine, pyrophyllite (crude), staurolite, stone (dimension), talc (crude), vermiculite (crude), wollastonite, and values indicated by symbol W	XX	584,000	XX	523,000	XX	1,800,000
Total	XX	29,700,000 ^r	XX	29,600,000 ^r	XX	30,800,000
Grand total	XX	38,300,000 ^r	XX	37,900,000 ^r	XX	39,400,000

^eEstimated. ^rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined value" data. XX Not applicable. -- Zero.

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

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

³Recoverable content of ores, etc.

⁴Content of ore and concentrate.

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

⁶Excludes 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 2003

(Principal States based upon quantity unless otherwise noted)

Mineral	Principal States	Other States (alphabetical order)
Asbestos	(1)	
Barite	NV and GA	
Beryllium concentrates	UT	
Boron	CA	
Bromine	AR and MI	
Brucite	NV and TX	
Cement:		
Masonry	FL, CA, AL, SC, IN	AZ, AR, CO, GA, IA, KS, KY, ME, MD, MI, MO, MT, NE, NM, NY, OH, OK, PA, TN, TX, VA, WV.
Portland	CA, TX, PA, MI, MO	All other States, except AK, CT, DE, HI, 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.
Common	NC, TX, AL, OH, GA	All other States, except AK, DE, HI, ID, NV, NH, RI, VT, WI.
Fire	MO, SC, OH	
Fuller's earth	GA, MS, MO, VA, IL	CA, FL, KS, NV, TN, TX.
Kaolin	GA, AL, SC, CA, AR	FL, NV, NC, TN, TX.
Copper ²	AZ, UT, NM, MO, MT	ID.
Diatomite	NV, CA, OR, WA	
Emery	(3)	
Feldspar	NC, VA, CA, GA, OK	ID and SD.
Garnet, industrial	NY and ID	
Gemstones, natural ⁴	TN, AZ, OR, CA, NV	All other States.
Gold ²	NV, AK, UT, MT, CO	AZ, CA, ID, SD.
Greensand marl	NJ	
Gypsum, crude	NV, OK, IA, CA, TX	AZ, AR, CO, IN, KS, LA, MI, NM, SD, UT, WY.
Helium:		
Crude	KS and TX	
Grade-A	KS, WY, CO, OK, UT	NM and TX.
Iodine	OK	
Iron ore, usable	MN, MI, CA	
Iron oxide pigments, crude	GA, MI, AL, VA	
Kyanite	VA	
Lead ²	MO, AK, ID, MT	
Lime	MO, AL, KY, OH, TX	All other States, except AK, CT, DE, FL, HI, KS, ME, MD, MS, NH, NJ, NY, NC, RI, SC, VT.
Lithium carbonate	NV	
Magnesite	NV	
Magnesium compounds	MI, UT, FL, DE, CA	
Magnesium metal	UT	
Mica, crude	NC, NM, GA, SC, SD	
Molybdenum, concentrates	AZ, CO, UT, ID, NM	MT.
Olivine	WA and NC	
Palladium ²	MT	
Peat	FL, MI, MN, IL, IN	IA, ME, MT, NJ, NY, OH, PA, WA, WV, WI.
Perlite, crude	NM, OR, AZ, UT, CA	NV and ID.
Phosphate rock	FL, ID, NC, UT	
Platinum ²	MT	
Potash	NM, UT, MI	
Pumice and pumicite	AZ, OR, NM, CA, ID	KS.
Pyrophyllite, crude	NC and CA	
Rare-earth metal concentrates	(3)	
Salt	LA, TX, NY, OH, KS	AL, AZ, CA, MI, NV, NM, OK, TN, UT, WV.
Sand and gravel:		
Construction	CA, TX, MI, AZ, MN	All other States.
Industrial	IL, MI, TX, WI, CA	All other States, except AK, CT, DE, HI, KY, ME, MA, MT, NH, NM, OR, SD, UT, VT, WY.
Silica stone ⁵	AR	
Silver ²	AK, NV, ID, UT, AZ	CA, CO, MO, MT.
Soda ash	WY, CA, CO	
Staurolite	FL	
Stone:		
Crushed	TX, PA, FL, IL, GA	All other States, except DE.
Dimension	IN, GA, VT, WI, TX	All other States, except AK, DE, FL, HI, IL, IA, KY, LA, MS, NE, NV, NJ, ND, OR, RI, WY.
Talc, crude	MT, TX, VT, NY, OR	

See footnotes at end of table.

TABLE 2--Continued
 NONFUEL MINERALS PRODUCED IN THE UNITED STATES, BY COMMODITY AND STATES IN 2002

(Principal States based upon quantity unless otherwise noted)

Mineral	Principal States	Other States (alphabetical order)
Titanium concentrates:		
Ilmenite	FL and VA	
Rutile	FL	
Tripoli	IL, OK, AR, PA	
Vermiculite, crude	SC and VA	
Wollastonite	NY	
Zeolites	NM, TX, OR, ID, NV	AZ and CA.
Zinc ²	AK, MO, TN, MT, ID	
Zirconium concentrates	FL and VA	

¹Discontinued, no further production expected.

²Content of ores, etc.

³No production.

⁴Principal producing States based on value.

⁵Grindstones, 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 2003¹

State	Value (thousands)	Rank	Percentage of U.S. total	Principal minerals, in decending order of value
Alabama	\$900,000	17	2.28	Stone (crushed), cement (portland), lime, sand and gravel (construction), cement (masonry).
Alaska	1,080,000	12	2.74	Zinc, gold, lead, silver, sand and gravel (construction).
Arizona	2,180,000	4	5.53	Copper, sand and gravel (construction), cement (portland), molybdenum concentrates, stone (crushed).
Arkansas	455,000	30	1.16	Bromine, stone (crushed), cement (portland), sand and gravel (construction), gypsum (crude).
California	3,430,000	1	8.71	Sand and gravel (construction), cement (portland), boron minerals, stone (crushed), diatomite.
Colorado	673,000	22	1.71	Sand and gravel (construction), cement (portland), gold, molybdenum concentrates, stone (crushed).
Connecticut ²	133,000	42	0.34	Stone (crushed), sand and gravel (construction), stone (dimension), clays (common), gemstones (natural).
Delaware ²	17,900	50	0.05	Sand and gravel (construction), magnesium compounds, gemstones (natural).
Florida	2,070,000	5	5.27	Phosphate rock, stone (crushed), cement (portland), sand and gravel (construction), cement (masonry).
Georgia	1,740,000	6	4.40	Clays (kaolin), stone (crushed), clays (fuller's earth), cement (portland), sand and gravel (construction).
Hawaii ²	73,100	45	0.19	Stone (crushed), sand and gravel (construction), cement (masonry), gemstones (natural).
Idaho	269,000	37	0.68	Phosphate rock, sand and gravel (construction), molybdenum concentrates, silver, cement (portland).
Illinois	971,000	16	2.47	Stone (crushed), cement (portland), sand and gravel (construction), sand and gravel (industrial), lime.
Indiana	715,000	20	1.81	Stone (crushed), cement (portland), sand and gravel (construction), lime, cement (masonry).
Iowa	504,000	27	1.28	Stone (crushed), cement (portland), sand and gravel (construction), gypsum (crude), lime.
Kansas	696,000	21	1.77	Helium (Grade-A), cement (portland), salt, stone (crushed), helium (crude).
Kentucky	602,000	24	1.53	Stone (crushed), lime, cement (portland), sand and gravel (construction), clays (ball).
Louisiana	367,000	34	0.93	Salt, sand and gravel (construction), stone (crushed), sand and gravel (industrial), lime.
Maine	108,000	43	0.27	Sand and gravel (construction), cement (portland), stone (crushed), stone (dimension), cement (masonry).
Maryland	427,000	32	1.08	Stone (crushed), cement (portland), sand and gravel (construction), cement (masonry), stone (dimension).
Massachusetts ²	204,000	38	0.52	Stone (crushed), sand and gravel (construction), lime, stone (dimension), clays (common).
Michigan	1,410,000	7	3.58	Cement (portland), iron ore (usable), sand and gravel (construction), salt, stone (crushed).
Minnesota ²	1,200,000	11	3.04	Iron ore (usable), sand and gravel (construction), stone (crushed), sand and gravel (industrial), stone (dimension).
Mississippi	188,000	40	0.48	Sand and gravel (construction), clays (fuller's earth), stone (crushed), cement (portland), clays (ball).
Missouri	1,350,000	9	3.42	Stone (crushed), cement (portland), lead, lime, sand and gravel (construction).
Montana	493,000	28	1.25	Gold, platinum metal, palladium metal, sand and gravel (construction), cement (portland).
Nebraska ²	95,300	44	0.24	Cement (portland), stone (crushed), sand and gravel (construction), lime, cement (masonry).
Nevada	3,190,000	2	8.10	Gold, sand and gravel (construction), lime, silver, stone (crushed).
New Hampshire ²	62,500	47	0.16	Sand and gravel (construction), stone (crushed), stone (dimension), gemstones (natural).
New Jersey	312,000	36	0.79	Stone (crushed), sand and gravel (construction), sand and gravel (industrial), greensand marl, peat.
New Mexico	569,000	25	1.44	Potash, copper, sand and gravel (construction), cement (portland), stone (crushed).
New York	998,000	14	2.53	Stone (crushed), salt, cement (portland), sand and gravel (construction), wollastonite.
North Carolina	754,000	19	1.91	Stone (crushed), phosphate rock, sand and gravel (construction), sand and gravel (industrial), feldspar.
North Dakota	46,500	48	0.12	Sand and gravel (construction), lime, stone (crushed), clays (common), sand and gravel (industrial).
Ohio	1,000,000	13	2.55	Stone (crushed), sand and gravel (construction), salt, lime, cement (portland).
Oklahoma	470,000	29	1.19	Stone (crushed), cement (portland), sand and gravel (construction), sand and gravel (industrial), iodine (crude).
Oregon	322,000	35	0.82	Stone (crushed), sand and gravel (construction), cement (portland), diatomite, lime.
Pennsylvania ²	1,270,000	10	3.23	Stone (crushed), cement (portland), sand and gravel (construction), lime, cement (masonry).
Rhode Island ²	35,900	49	0.09	Sand and gravel (construction), stone (crushed), sand and gravel (industrial), gemstones (natural).
South Carolina	508,000	26	1.29	Cement (portland), stone (crushed), cement (masonry), sand and gravel (construction), clays (kaolin).
South Dakota	199,000	39	0.51	Cement (portland), sand and gravel (construction), gold, stone (crushed), stone (dimension).
Tennessee	623,000	23	1.58	Stone (crushed), cement (portland), sand and gravel (construction), clays (ball), zinc.
Texas	2,240,000	3	5.68	Cement (portland), stone (crushed), sand and gravel (construction), salt, lime.
Utah	1,350,000	8	3.43	Copper, cement (portland), gold, salt, sand and gravel (construction).
Vermont ²	70,500	46	0.18	Stone (dimension), stone (crushed), sand and gravel (construction), talc (crude), gemstones (natural).
Virginia	790,000	18	2.01	Stone (crushed), cement (portland), sand and gravel (construction), lime, clays (fuller's earth).
Washington	396,000	33	1.00	Sand and gravel (construction), cement (portland), stone (crushed), diatomite, sand and gravel (industrial).
West Virginia	164,000	41	0.42	Stone (crushed), cement (portland), sand and gravel (industrial), lime, salt.
Wisconsin ²	452,000	31	1.15	Stone (crushed), sand and gravel (construction), lime, sand and gravel (industrial), stone (dimension).
Wyoming	998,000	15	2.53	Soda ash, clays (bentonite), helium (Grade-A), cement (portland), sand and gravel (construction).
Undistributed	223,000	XX	0.57	
Total	39,400,000	XX	100.00	

XX Not applicable.

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

²Partial total; excludes values that are concealed to avoid disclosing company proprietary data. Concealed values included in "Undistributed."

TABLE 4
VALUE OF NONFUEL MINERAL PRODUCTION PER CAPITA AND PER SQUARE KILOMETER IN 2003 BY STATE¹

State	Area (square kilometers)	Population (thousands)	Total value (thousands)	Per capita		Per square kilometer	
				Value	Rank	Value	Rank
Alabama	134,000	4,530	\$900,000	\$199	12	\$6,720	18
Alaska	1,530,000	655	1,080,000	1,650	2	706	48
Arizona	295,000	5,740	2,180,000	379	6	7,370	17
Arkansas	138,000	2,750	455,000	165	16	3,310	30
California	411,000	35,900	3,430,000	96	29	8,350	12
Colorado	270,000	4,600	673,000	146	17	2,500	39
Connecticut	13,000	3,500	133,000 ²	38	46	10,200	8
Delaware	5,290	830	17,900 ²	22	50	3,390	29
Florida	152,000	17,400	2,070,000	119	22	13,700	3
Georgia	153,000	8,830	1,740,000	197	13	11,400	5
Hawaii	16,800	1,260	73,100 ²	58	42	4,360	26
Idaho	216,000	1,390	269,000	193	14	1,240	46
Illinois	146,000	12,700	971,000	76	38	6,660	19
Indiana	93,700	6,240	715,000	115	23	7,620	14
Iowa	146,000	2,950	504,000	171	15	3,460	28
Kansas	213,000	2,740	696,000	255	9	3,270	31
Kentucky	105,000	4,150	602,000	145	18	5,760	22
Louisiana	124,000	4,520	367,000	81	36	2,970	34
Maine	86,200	1,320	108,000	82	35	1,250	45
Maryland	27,100	5,560	427,000	77	37	15,700	1
Massachusetts	21,500	6,420	204,000 ²	32	49	9,500	9
Michigan	152,000	10,100	1,410,000	140	19	9,310	11
Minnesota	219,000	5,100	1,200,000 ²	235	10	5,480	25
Mississippi	124,000	2,900	188,000	65	40	1,520	42
Missouri	181,000	5,750	1,350,000	234	11	7,470	16
Montana	381,000	927	493,000	532	5	1,290	43
Nebraska	200,000	1,750	95,300 ²	55	43	475	49
Nevada	286,000	2,330	3,190,000	1,370	3	11,100	6
New Hampshire	24,000	1,300	62,500 ²	48	45	2,600	37
New Jersey	20,200	8,700	312,000	36	47	15,500	2
New Mexico	315,000	1,900	569,000	299	7	1,810	41
New York	127,000	19,200	998,000	52	44	7,850	13
North Carolina	136,000	8,540	754,000	88	32	5,520	24
North Dakota	183,000	634	46,500	73	39	254	50
Ohio	107,000	11,500	1,000,000	88	33	9,370	10
Oklahoma	181,000	3,520	470,000	134	20	2,600	38
Oregon	251,000	3,590	322,000	90	31	1,280	44
Pennsylvania	117,000	12,400	1,270,000 ²	103	27	10,800	7
Rhode Island	3,140	1,080	35,900 ²	33	48	11,400	4
South Carolina	80,600	4,200	508,000	121	21	6,310	20
South Dakota	200,000	771	199,000	258	8	997	47
Tennessee	109,000	5,900	623,000	106	26	5,710	23
Texas	691,000	22,500	2,240,000	100	28	3,240	32
Utah	220,000	2,390	1,350,000	566	4	6,150	21
Vermont	24,900	621	70,500 ²	113	24	2,830	35
Virginia	106,000	7,460	790,000	106	25	7,490	15
Washington	176,000	6,200	396,000	64	41	2,240	40
West Virginia	62,800	1,820	164,000	90	30	2,610	36
Wisconsin	145,000	5,510	452,000 ²	82	34	3,110	33
Wyoming	253,000	507	998,000	1,970	1	3,940	27
Undistributed	XX	XX	223,000	XX	XX	XX	XX
Total or average	9,370,000 ³	293,000 ³	39,400,000	134	XX	4,200	XX

XX Not applicable.

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

²Partial total; excludes values that are concealed to avoid disclosing company proprietary data. Concealed values included in "Undistributed."

³Excludes Washington, DC (which has no mineral production), with an area of 179 square kilometers and a population of 554,000.

Sources: U.S. Geological Survey and Population Division, 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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
Alabama:						
Cement:						
Masonry	380	38,900 ^e	380	42,000 ^e	565	55,700 ^e
Portland	4,480	352,000 ^e	4,540	298,000 ^e	4,330	273,000 ^e
Clays:						
Bentonite	132	4,010	125	3,810	125	3,810
Common	2,050	24,800	2,020	24,600	1,920	24,000
Kaolin	W	W	531	14,600	W	W
Gemstones, natural	NA	108	NA	356	NA	356
Lime	2,040	127,000	2,040	127,000	2,290	151,000
Sand and gravel:						
Construction	13,600	60,200	12,500	56,700	14,500	67,600
Industrial	743	9,420	722	8,990	723	9,180
Stone, crushed	49,400	308,000	43,400	262,000	49,300	286,000
Combined values of iron oxide pigments (crude), salt, stone (dimension marble and sandstone), and values indicated by symbol W	XX	20,100	XX	8,850	XX	30,000
Total	XX	945,000	XX	847,000	XX	900,000
Alaska:						
Gemstones, natural	NA	12	NA	12	NA	12
Gold ^{3,4} kilograms	16,700	146,000	16,900	170,000	W	W
Sand and gravel, construction	11,300	65,600	16,300	93,400	9,980	55,700
Silver ³ kilograms	W	W	559,000	83,100	W	W
Stone, crushed ⁵	1,450 ^r	8,000 ^r	1,280	6,960	2,640	15,300
Combined values of copper (2001), lead, stone [crushed dolomite and limestone (2001-02), crushed granite and shell (2003)], zinc, and values indicated by symbol W	XX	763,000	XX	695,000	XX	1,010,000
Total	XX	983,000	XX	1,050,000	XX	1,080,000
Arizona:						
Copper ⁴	879	1,490,000	767	1,280,000	741	1,390,000
Gemstones, natural	NA	1,610	NA	1,670	NA	1,440
Sand and gravel, construction	52,900	288,000	53,800	294,000	62,600	340,000
Stone, crushed	8,320	49,600	8,450	51,800	9,950	49,100
Zeolites metric tons	W	NA	W	NA	W	NA
Combined values of cement, clays (bentonite, common), gold, gypsum (crude), lime, mica (2002), molybdenum concentrates, perlite (crude), pumice and pumicite, salt, sand and gravel (industrial), silver, stone (dimension sandstone)	XX	343,000	XX	318,000	XX	394,000
Total	XX	2,170,000	XX	1,950,000	XX	2,180,000
Arkansas:						
Clays, common	989	1,440	922	2,280	897	1,410
Gemstones, natural	NA	686	NA	637	NA	477
Sand and gravel, construction	11,600	57,600	8,810	45,600	9,720	52,100
Silica stone ⁶ metric tons	393	4,040	386	3,740	513	3,630
Stone, crushed	33,700	169,000	30,800	159,000	30,000	146,000
Combined values of bromine, cement, clays (kaolin), gypsum (crude), lime, sand and gravel (industrial), stone [dimension limestone, marble, sandstone (2001), dimension limestone and sandstone (2002-03)], tripoli	XX	246,000	XX	247,000	XX	252,000
Total	XX	479,000	XX	458,000	XX	455,000

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	2001		2002		2003		
	Quantity	Value	Quantity	Value	Quantity	Value	
California:							
Asbestos	metric tons	5,260	W	2,770	1,380	--	--
Boron minerals		1,050	506,000	1,050	513,000	1,150	591,000
Cement:							
Masonry		564	51,400 ^e	W	W	W	W
Portland		10,100	778,000 ^e	11,200	853,000 ^e	11,600	887,000 ^e
Clays:							
Bentonite		W	W	26	2,830	23	2,560
Common		885	18,300	1,030	21,400	1,240	19,100
Gemstones, natural		NA	1,280	NA	1,040	NA	1,080
Gold ³	kilograms	13,800	121,000	9,180	91,900	4,270	50,100
Sand and gravel:							
Construction		149,000	1,080,000	151,000	1,110,000	152,000	1,150,000
Industrial		1,840	47,700	1,800	48,000	1,790	50,100
Silver ³	kilograms	7,590	1,070	3,400	506	957	151
Stone:							
Crushed		61,600	396,000	67,400	423,000	55,500	366,000
Dimension		40	9,540	41	9,870	40	9,920
Zeolites	metric tons	W	NA	W	NA	W	NA
Combined values of clays [fire (2001-02), fuller's earth, kaolin], diatomite, feldspar, gypsum (crude), iron ore (usable), lime, magnesium compounds, perlite (crude), pumice and pumicite, pyrophyllite [crude (2003)], rare-earth metal concentrates (2001-02), salt, soda ash, and values indicated by symbol W							
		XX	297,000 ^r	XX	340,000 ^r	XX	308,000
Total		XX	3,310,000 ^r	XX	3,410,000 ^r	XX	3,430,000
Colorado:							
Clays, common		254	1,500	214	1,260	259	1,580
Gemstones, natural		NA	269	NA	269	NA	281
Gold ³	kilograms	6,660	58,300	W	W	W	W
Lime		33	2,000	20	1,250	26	2,330
Sand and gravel:							
Construction		37,300	194,000	40,700	222,000	37,500	213,000
Industrial		W	W	61	W	70	W
Silver ³	kilograms	2,830	399	W	W	W	W
Stone:							
Crushed		13,800 ^r	88,300 ^r	15,000	96,000	10,400	64,100
Dimension		11	2,130	18	2,400	5	1,610
Combined values of cement, clays (bentonite), gypsum (crude), helium (Grade-A), molybdenum concentrates, soda ash, and values indicated by symbol W							
		XX	193,000	XX	312,000 ^r	XX	391,000
Total		XX	540,000	XX	634,000	XX	673,000
Connecticut:							
Clays, common		55 ^e	183 ^e	55	183	52	143
Gemstones, natural		NA	6	NA	6	NA	6
Sand and gravel, construction		7,670	44,700	8,140	48,800	8,150	51,200
Stone:							
Crushed		9,870	83,200	10,200	85,300	10,400	81,800
Dimension		W	(7)	W	(7)	W	(7)
Total		XX	128,000	XX	134,000	XX	133,000
Delaware:							
Gemstones, natural		NA	1	NA	1	NA	1
Magnesium compounds	metric tons	W	(7)	W	(7)	W	(7)
Sand and gravel, construction		3,370	19,300	2,190	17,300	2,550	17,900
Total		XX	19,300	XX	17,300	XX	17,900

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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
Florida:						
Cement:						
Masonry	556	62,600 ^e	591	64,000 ^e	674	82,900 ^e
Portland	4,060	294,000 ^e	3,950	297,000 ^e	4,190	323,000 ^e
Clays:						
Common	94 ^e	1,280 ^e	W	W	94 ^e	1,280 ^e
Fuller's earth	334 ^e	22,200 ^e	W	W	W	W
Kaolin	32	3,380	32	3,370	31	3,250
Gemstones, natural	NA	1	NA	1	NA	1
Peat	544	11,300	559	11,500	373	7,440
Sand and gravel:						
Construction	24,800	109,000	26,400	114,000	30,900	141,000
Industrial	598	7,510	645	8,640	624	7,270
Stone, crushed	95,100	515,000	97,700	573,000	97,500	592,000
Combined values of magnesium compounds, phosphate rock, staurolite, titanium concentrates, zirconium concentrate, and values indicated by symbol W	XX	770,000	XX	963,000	XX	918,000
Total	XX	1,800,000	XX	2,030,000	XX	2,070,000
Georgia:						
Clays:						
Common	1,360	4,580	1,310	5,500	1,280	4,430
Fuller's earth	879	80,600	979	93,800	1,570	145,000
Kaolin	7,020	816,000	6,830	893,000	6,610	884,000
Gemstones, natural	NA	8	NA	8	NA	8
Sand and gravel:						
Construction	7,060	28,800	6,600	27,200	7,690	31,800
Industrial	W	W	606	12,200	590	11,900
Stone:						
Crushed	76,900 ^{r,5}	465,000 ^{r,5}	69,100 ⁵	454,000 ⁵	75,200	519,000
Dimension	108	26,500	111	18,200	114	22,700
Combined values of barite, cement, clays [bentonite (2001-02)], feldspar, iron oxide pigments (crude), lime, mica (crude), stone [crushed marble (2001-02)], and value indicated by symbol W	XX	150,000	XX	138,000	XX	117,000
Total	XX	1,570,000	XX	1,640,000	XX	1,740,000
Hawaii:						
Cement:						
Masonry	W	(7)	W	(7)	W	(7)
Portland	112	15,100 ^e	--	--	--	--
Gemstones, natural	NA	85	NA	109	NA	119
Sand and gravel, construction	534	6,270	610	7,010	809	9,560
Stone, crushed	6,640 ^r	64,300 ^r	6,380	65,100	5,690	63,400
Total	XX	85,700 ^r	XX	72,300	XX	73,100
Idaho:						
Gemstones, natural	NA	665	NA	460	NA	477
Sand and gravel, construction	15,000	52,400	15,700	57,700	16,500	59,300
Stone, crushed	5,250	22,500	3,420	15,800	3,160	15,700
Zeolites metric tons	W	NA	W	NA	W	NA
Combined values of cement (portland), copper, feldspar, garnet (industrial), gold, lead, lime, molybdenum concentrates, perlite (crude), phosphate rock, pumice and pumicite, sand and gravel (industrial), silver, stone [dimension granite, quartz, sandstone (2002), dimension quartzite and sandstone (2001), quartzite and sandstone (2003)], zinc	XX	213,000	XX	197,000	XX	193,000
Total	XX	288,000	XX	271,000	XX	269,000

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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
Illinois:						
Cement, portland	2,870	214,000 ^e	2,770	204,000 ^e	2,930	210,000 ^e
Clays:						
Common	198	972	181	856	179	1,010
Fuller's earth	367	34,200	W	W	W	W
Gemstones, natural	NA	8	NA	28	NA	28
Sand and gravel:						
Construction	35,000	156,000	32,000	146,000	34,600	161,000
Industrial	4,460	72,100	4,510	72,800	4,440	72,600
Stone, crushed ⁵	80,700	459,000	75,200	431,000	76,000	453,000
Combined values of lime, peat, stone (crushed sandstone), tripoli, and values indicated by symbol W	XX	57,400	XX	62,100	XX	74,000
Total	XX	993,000	XX	917,000	XX	971,000
Indiana:						
Cement, portland	2,900	195,000 ^e	2,940	197,000 ^e	2,930	203,000 ^e
Clays, common	575	1,470	429	1,240	385	767
Gemstones, natural	NA	3	NA	4	NA	4
Sand and gravel, construction	29,000	124,000	27,600	122,000	32,900	129,000
Stone:						
Crushed	58,200	278,000	55,500	268,000	50,500	235,000
Dimension	184	35,300	237	39,500	242	42,100
Combined values of cement (masonry), gypsum (crude), lime, peat, sand and gravel (industrial)	XX	103,000 ^r	XX	104,000 ^r	XX	104,000
Total	XX	737,000 ^r	XX	733,000	XX	715,000
Iowa:						
Clays, common	274	836	256	763	256	763
Gemstones, natural	NA	2	NA	2	NA	2
Sand and gravel:						
Construction	14,200	63,800	14,600	62,300	13,400	61,000
Industrial	35	1,590	W	W	W	W
Stone, crushed	35,600	189,000	35,900	194,000	35,600	207,000
Combined values of cement, gypsum (crude), lime, peat, and values indicated by symbol W	XX	211,000	XX	231,000	XX	235,000
Total	XX	466,000	XX	488,000	XX	504,000
Kansas:						
Cement:						
Masonry	25	2,460 ^e	W	W	W	W
Portland	1,830	140,000 ^e	2,350	181,000 ^e	2,270	173,000 ^e
Clays, common	635	4,280	642	4,280	632	10,000
Gemstones, natural	NA	3	NA	1	NA	1
Helium:						
Crude	million cubic meters	36	39,400	W	W	W
Grade-A	do.	82	163,000	78	181,000	77
Salt		3,130	122,000	2,630	119,000	2,770
Sand and gravel, construction		10,200	29,100	9,560	28,700	10,700
Stone:						
Crushed		22,800	110,000	21,700	107,000	20,600
Dimension		13	4,780	15	1,900	15
Combined values of clays (fuller's earth), gypsum (crude), pumice and pumicite, sand and gravel (industrial), and values indicated by symbol W		XX	14,300	XX	64,800 ^r	XX
Total		XX	629,000	XX	688,000	XX
Kentucky:						
Clays, common		1,010	4,230	925	4,740	983
Gemstones, natural		NA	64	NA	64	NA
Sand and gravel, construction		10,100	40,400	9,530	37,900	10,000
Stone, crushed		58,700 ^r	324,000 ^r	50,600	302,000	53,600
Combined values of cement, clays (ball), lime		XX	213,000	XX	197,000	XX
Total		XX	581,000 ^r	XX	542,000	XX

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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
Louisiana:						
Clays, common	663	1,670	667	1,680	670	1,690
Gemstones, natural	NA	6	NA	6	NA	6
Salt	13,100	139,000	12,000	129,000	12,600	152,000
Sand and gravel:						
Construction	18,100	85,100	17,900	96,800	21,200	105,000
Industrial	637	11,900	541	12,000	499	17,200
Combined values of gypsum (crude), lime, stone (crushed limestone, sandstone, miscellaneous)	XX	57,800 ^r	XX	72,400	XX	91,000
Total	XX	296,000 ^r	XX	312,000	XX	367,000
Maine:						
Clays, common ^e	49	125	49	125	49	125
Gemstones, natural	NA	245	NA	257	NA	262
Sand and gravel, construction	11,200	44,900	9,680	40,400	10,400	47,600
Stone, crushed	4,210	24,200	4,010	23,400	3,620	23,100
Combined values of cement, peat, stone (dimension granite)	XX	32,600	XX	35,400	XX	36,700
Total	XX	102,000	XX	99,700	XX	108,000
Maryland:						
Cement:						
Masonry	77	7,070 ^e	W	W	W	W
Portland	1,720	124,000 ^e	1,880	140,000 ^e	2,200	147,000 ^e
Clays, common	266	560	268	550	269	550
Gemstones, natural	NA	1	NA	1	NA	1
Sand and gravel, construction	12,500	84,800	12,200	83,500	11,800	79,900
Stone:						
Crushed ⁶	22,800	136,000	22,300	141,000	26,200	165,000
Dimension	28	3,440	21	2,120	24	2,700
Combined values of sand and gravel (industrial) and stone (crushed marble, shell, traprock) and values indicated by symbol W	XX	(8)	XX	33,500	XX	31,700
Total	XX	356,000	XX	400,000	XX	427,000
Massachusetts:						
Clays, common	36 ^e	321 ^e	36	321	36	321
Gemstones, natural	NA	1	NA	1	NA	1
Lime	W	(7)	W	(7)	W	(7)
Sand and gravel, construction	14,000	89,300	12,200	75,300 ^r	12,900	80,900
Stone:						
Crushed	14,500	121,000	13,800	107,000	13,000	111,000
Dimension	81	11,400	81	11,300	81	11,300
Total	XX	221,000	XX	194,000	XX	204,000
Michigan:						
Cement:						
Masonry	290	28,900 ^e	292	30,000 ^e	237	24,300 ^e
Portland	5,920	456,000 ^e	W	W	W	W
Clays, common	595	2,280	499	884	588	3,050
Gemstones, natural	NA	1	NA	1	NA	1
Gypsum, crude	929	10,600	1,020	10,800	500	6,130
Peat	208	4,750	131 ^r	3,790 ^r	125	3,460
Sand and gravel:						
Construction	76,300	266,000	77,300	267,000	71,000	253,000
Industrial	2,530	30,000	2,210	31,000	2,130	31,400
Stone, crushed ⁵	43,200	160,000	41,100	170,000	33,600	124,000
Combined values of bromine, iron ore (usable), iron oxide pigments (crude), lime, magnesium compounds, potash, salt, stone (crushed marl and miscellaneous, dimension dolomite and sandstone), and values indicated by symbol W	XX	669,000	XX	962,000	XX	966,000
Total	XX	1,630,000	XX	1,480,000	XX	1,410,000

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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
Minnesota:						
Clays, common	14	15	14	15	20	22
Gemstones, natural	NA	6	NA	6	NA	6
Iron ore, usable	37,300	856,000	39,600	1,050,000	32,400	907,000
Lime	W	(7)	W	(7)	W	(7)
Peat	83	4,430	64	5,320	60	5,070
Sand and gravel:						
Construction	39,800	155,000	43,700	175,000	48,900	212,000
Industrial	W	(7)	W	(7)	W	(7)
Stone:						
Crushed	9,730	57,000	9,960	57,600	9,880	61,800
Dimension	16	11,800	22	12,400	16	11,900
Total	XX	1,080,000	XX	1,300,000	XX	1,200,000
Mississippi:						
Clays:						
Bentonite	155 ^e	4,900 ^e	W	W	W	W
Common	461	2,040	496	2,210	524	2,050
Fuller's earth	385	32,100	411	29,900	534	42,700
Gemstones, natural	NA	1	NA	1	NA	1
Sand and gravel, construction	13,700	70,100	13,600	73,200	14,600	82,500
Stone, crushed	1,920 ^{r,5}	18,800 ^{r,5}	2,620	27,900	2,770	29,300
Combined values of cement (portland), clays (ball), sand and gravel (industrial), stone [crushed marl (2001)], and values indicated by symbol W	XX	46,300	XX	44,600	XX	31,400
Total	XX	174,000	XX	178,000	XX	188,000
Missouri:						
Cement:						
Masonry	111	9,680 ^e	W	W	W	W
Portland	4,720	346,000 ^e	4,820	333,000 ^e	5,180	352,000 ^e
Clays:						
Common	1,030	3,420	1,050	3,930	970	3,660
Fire	289	3,610	340	7,360	307	7,230
Copper ³	4	7,490	W	W	W	W
Lead ³ metric tons	281,000	270,000	W	W	W	W
Sand and gravel:						
Construction	10,900	45,800	10,000	42,300	10,600	49,400
Industrial	W	W	W	W	586	12,800
Silver ³ kilograms	144,000	20,300	W	W	W	W
Stone, crushed	81,700 ^r	410,000 ^r	74,100	380,000	72,200	436,000
Zinc ³ metric tons	43,600	42,300	W	W	W	W
Combined values of clays (fuller's earth), gemstones (natural), iron oxide pigments [crude (2001)], lime, stone (dimension granite), and values indicated by symbol W	XX	165,000	XX	494,000	XX	488,000
Total	XX	1,320,000	XX	1,260,000	XX	1,350,000

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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
Montana:						
Clays, bentonite	252	16,200	181	14,900	181	14,900
Gemstones, natural	NA	320	NA	424	NA	707
Lead ³ metric tons	7,290	7,020	W	W	W	W
Palladium ³ kilograms	12,100	237,000	14,800	162,000	14,000	91,400
Platinum ³ do.	3,610	61,900	4,390	76,500	4,170	93,100
Sand and gravel, construction	14,600	67,200	16,700	76,000	15,200	74,200
Stone:						
Crushed	3,070	12,400	2,370	10,000	3,060	11,500
Dimension	9	2,400	12	2,620	14	2,590
Zinc ³ metric tons	22,600	21,900	W	W	W	W
Combined values of cement, clays (common), copper (2003), garnet [industrial (2001-02)], gold, lime, molybdenum concentrates (2003), peat, silver, talc (crude), and values indicated by symbol W	XX	149,000	XX	129,000	XX	205,000
Total	XX	575,000	XX	471,000	XX	493,000
Nebraska:						
Cement:						
Masonry	W	(7)	W	(7)	W	(7)
Portland	W	(7)	W	(7)	W	(7)
Clays, common ^c	133	338	133	338	133	338
Gemstones, natural	NA	3	NA	4	NA	4
Lime	15	1,330	8	692	8	692
Sand and gravel:						
Construction	13,000	43,000	12,900	44,200	13,300	45,000
Industrial	W	(7)	W	(7)	W	(7)
Stone, crushed	6,360	45,800	7,220	53,200	6,960	49,200
Total	XX	90,400	XX	98,400	XX	95,300
Nevada:						
Clays:						
Bentonite	5	758	6	W	6	817
Fuller's earth	28	3,870	28	3,870	28	3,870
Gold ³ kilograms	253,000	2,220,000	240,000	2,410,000	227,000	2,660,000
Sand and gravel:						
Construction	34,000	173,000	35,400	159,000	37,100	174,000
Industrial	609	W	615	11,000	W	W
Silver ³ kilograms	544,000	76,800	424,000	63,000	322,000	50,900
Stone, crushed	7,720 ^r	37,600 ^r	8,010	41,900	7,830	48,500
Zeolites metric tons	W	NA	W	NA	W	NA
Combined values of barite, brucite, cement (portland), clays (kaolin), copper (2001), diatomite, gemstones (natural), gypsum (crude), lead (2001-02), lime, lithium carbonate, magnesite, perlite (crude), salt, and values indicated by symbol W	XX	248,000	XX	228,000	XX	252,000
Total	XX	2,760,000	XX	2,910,000	XX	3,190,000
New Hampshire:						
Gemstones, natural	NA	8	NA	6	NA	6
Sand and gravel, construction	8,630	43,300	8,640	41,600	8,470	41,200
Stone:						
Crushed	5,030	22,100	4,810	24,500	4,110	21,400
Dimension, granite	W	(7)	W	(7)	W	(7)
Total	XX	65,400	XX	66,100	XX	62,500

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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
New Jersey:						
Gemstones, natural	NA	1	NA	1	NA	1
Sand and gravel:						
Construction	16,800	98,000	16,000	96,300	18,200	105,000
Industrial	1,580	34,800	1,420	32,700	1,570	32,700
Stone, crushed	26,400	184,000	20,500	127,000	24,800	170,000
Combined values of clays (common), greensand marl, peat	XX	4,170	XX	3,910	XX	4,190
Total	XX	321,000	XX	260,000	XX	312,000
New Mexico:						
Clays, common	35	205	33	175	36	209
Copper ³	141	239,000	112	187,000	88	165,000
Gemstones, natural	NA	33	NA	19	NA	20
Sand and gravel, construction	10,600	54,500	12,800	62,600	13,300	65,300
Stone:						
Crushed	4,230	26,100	3,680 ^r	23,300	3,760	26,100
Dimension	36	1,320	20	1,370	57	2,590
Zeolites metric tons	W	NA	W	NA	W	NA
Combined values of cement, gold (2001), gypsum (crude), helium [Grade-A (2002-03)], iron ore [usable (2001-02)], lime, mica [crude (2001, 2003)], molybdenum concentrates, perlite (crude), potash, pumice and pumicite, salt, sand and gravel [industrial (2001)], silver (2001)	XX	276,000	XX	282,000 ^r	XX	310,000
Total	XX	597,000	XX	557,000 ^r	XX	569,000
New York:						
Clays, common	647	7,960	641	7,990	644	8,050
Gemstones, natural	NA	64	NA	65	NA	65
Salt	5,570	215,000	4,610	185,000	5,230	225,000
Sand and gravel, construction	30,900	160,000	29,800	158,000	30,200	172,000
Stone:						
Crushed	53,700	353,000	56,500	391,000	53,700	352,000
Dimension	47	9,040	46	5,990	65	6,110
Zinc ⁴ metric tons	23,300	22,600	--	--	--	--
Combined values of cement, garnet (industrial), gypsum [crude (2001)], peat, sand and gravel (industrial), talc (crude), wollastonite	XX	259,000	XX	243,000	XX	235,000
Total	XX	1,030,000	XX	991,000	XX	998,000
North Carolina:						
Clays:						
Common	2,340	11,100	2,420	11,900	2,190	10,900
Kaolin	47 ^e	6,190 ^e	W	W	W	4,500
Feldspar metric tons	344,000	19,400	330,000	17,100	362,000	18,900
Gemstones, natural	NA	284	NA	280	NA	279
Gypsum, crude	71	788	--	--	--	--
Mica, crude	51	3,890	40	3,100	39	9,580
Sand and gravel:						
Construction	12,400	61,500	10,000	50,700	10,500	55,600
Industrial	1,300	26,000	1,320	25,600	1,530	26,700
Stone:						
Crushed	69,300	485,000	62,900	451,000	67,100	524,000
Dimension	42	18,200	41	17,900	47	18,700
Combined values of olivine, peat (2001), phosphate rock, pyrophyllite (crude), and value indicated by symbol W	XX	106,000	XX	111,000	XX	84,500
Total	XX	739,000 ^r	XX	689,000	XX	754,000

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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
North Dakota:						
Clays, common	68	W	57	W	W	W
Gemstones, natural	NA	3	NA	4	NA	4
Lime	184	6,360	W	W	W	W
Sand and gravel, construction	10,300	26,300	10,700	27,900	13,500	35,900
Combined values of sand and gravel (industrial), stone [crushed granite, limestone, volcanic cinder, miscellaneous (2002), crushed limestone, volcanic cinder, miscellaneous (2001, 2003)], and values indicated by symbol W	XX	623	XX	8,540	XX	10,600
Total	XX	33,300	XX	36,500	XX	46,500
Ohio:						
Cement:						
Masonry	74	9,000 ^e	W	W	W	W
Portland	1,040	80,400 ^e	1,020	78,000 ^e	1,030	82,200 ^e
Clays, common	1,320	7,410	1,310	7,820	1,440	7,430
Gemstones, natural	NA	3	NA	4	NA	4
Lime	1,900	114,000	1,630	98,100	1,880	114,000
Sand and gravel:						
Construction	50,400	256,000	48,700	250,000	47,300	242,000
Industrial	1,120	30,700	1,000	28,900	1,120	32,100
Stone:						
Crushed	75,900	339,000	72,600	329,000	70,500	331,000
Dimension	31	5,150	30	4,990	30	5,090
Combined values of clays (fire), gypsum [crude (2001-02)], peat, salt, and values indicated by symbol W	XX	198,000	XX	176,000	XX	188,000
Total	XX	1,040,000	XX	973,000	XX	1,000,000
Oklahoma:						
Clays, common	783	1,910	1,030	2,250	1,160	2,390
Gemstones, natural	NA	197	NA	197	NA	197
Gypsum, crude	2,630	21,300	2,520	18,500	2,250	14,100
Iodine, crude metric tons	1,290	18,400	1,420	21,600	1,090	15,900
Sand and gravel:						
Construction	11,000	43,700	10,200	41,300	11,000	48,500
Industrial	1,360	28,200	1,320	28,400	1,360	29,700
Stone:						
Crushed	41,600	179,000	45,000	196,000	40,200	193,000
Dimension	17	2,190	17	2,100	17	2,100
Tripoli metric tons	11,700	2,100	12,700	2,290	10,600	1,960
Combined values of cement, feldspar, helium [crude (2001-02), Grade-A], lime, salt	XX	181,000	XX	160,000	XX	163,000
Total	XX	478,000	XX	473,000	XX	470,000
Oregon:						
Clays, common	237	662	237	662	W	W
Gemstones, natural	NA	1,170	NA	1,340	NA	1,200
Sand and gravel, construction	17,300	99,200	19,500	116,000	18,500	110,000
Stone, crushed	20,500 ^r	99,500 ^r	19,800	101,000	22,100	118,000
Zeolites metric tons	W	NA	W	NA	W	NA
Combined values of cement (portland), clays (bentonite), diatomite, emery (2002), lime, perlite (crude), pumice and pumicite, talc (crude), and value indicated by symbol W	XX	103,000	XX	101,000	XX	92,700
Total	XX	304,000	XX	320,000	XX	322,000

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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
Pennsylvania:						
Cement:						
Masonry	329	38,500 ^e	341	38,000 ^e	342	35,900 ^e
Portland	6,540	464,000 ^e	6,130	456,000 ^e	5,720	421,000 ^e
Clays, common	758	2,320	779	2,560	750	2,240
Gemstones, natural	NA	1	NA	1	NA	1
Lime	1,280	86,500	1,230	87,600	1,190	90,100
Peat	9	206	3	132	8	219
Sand and gravel:						
Construction	20,200	128,000	18,100	115,000	18,400	115,000
Industrial	W	(7)	W	(7)	W	(7)
Stone:						
Crushed	100,000	560,000	102,000	580,000	105,000	597,000
Dimension	50	11,600	37	11,900	32	10,400
Tripoli	W	(7)	W	(7)	W	(7)
Total	XX	1,290,000	XX	1,290,000	XX	1,270,000
Rhode Island:						
Gemstones, natural	NA	1	NA	1	NA	1
Sand and gravel:						
Construction	1,200	9,220	1,760	14,100	2,990	25,100
Industrial	138	(7)	157	(7)	W	(7)
Stone, crushed	1,930	11,100	1,780	11,400	1,340	10,700
Total	XX	20,300	XX	25,500	XX	35,900
South Carolina:						
Cement:						
Masonry	487	52,600 ^e	426	41,000 ^e	425	43,700 ^e
Portland	2,560	165,000 ^e	2,510	176,000 ^e	3,150	194,000 ^e
Clays:						
Common	1,050	4,150	1,020	3,360	1,060	2,660
Fire	42	510 ^r	53	739	W	W
Kaolin	377	22,800	374	21,400	355	21,700
Gemstones, natural	NA	1	NA	1	NA	1
Sand and gravel:						
Construction	10,500	36,900	10,300	35,500	10,100	34,700
Industrial	694	15,900	831	16,400	655	16,700
Stone:						
Crushed	26,700	161,000	25,700	165,000	27,300	184,000
Dimension	9	855	9	850	9	850
Combined values of mica (crude) and vermiculite (crude), and value indicated by symbol W	XX	(7)	XX	(7)	XX	10,100
Total	XX	460,000 ^r	XX	460,000	XX	508,000
South Dakota:						
Clays, common	200	W	208	W	213	W
Sand and gravel, construction	11,200	41,500	11,900	47,500	11,800	44,800
Stone, crushed	5,730 ^r	26,700 ^r	6,780	33,600	6,880	24,700
Combined values of cement (portland), feldspar, gemstones (natural), gold, gypsum (crude), iron ore [usable (2001-02)], lime, mica (crude), silver (2001-02), stone (dimension granite), and values indicated by symbol W	XX	200,000	XX	135,000	XX	130,000
Total	XX	268,000	XX	216,000	XX	199,000

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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
Tennessee:						
Clays:						
Ball	680	28,800	660	28,100	766	33,400
Common	304	1,820 ^r	262	1,540	304	585
Fuller's earth	W	W	W	W	92 ^c	5,000 ^c
Sand and gravel:						
Construction	8,350	46,400	9,220	51,900	7,550	44,100
Industrial	W	22,900	1,070	25,700	961	21,800
Stone, crushed	58,600	344,000	54,900	330,000	55,100	354,000
Combined values of barite (2001), cement, clays (kaolin), gemstones (natural), lead (2001), lime, salt, silver (2001), stone (dimension marble), zinc, and values indicated by symbol W						
	XX	266,000	XX	212,000	XX	164,000
Total	XX	711,000 ^r	XX	648,000	XX	623,000
Texas:						
Cement:						
Masonry	291	32,700 ^c	294	36,000 ^c	307	36,100 ^c
Portland	10,400	745,000 ^c	10,500	740,000 ^c	11,100	747,000 ^c
Clays:						
Common	2,120	8,750	2,160	21,200	2,110	8,890
Fuller's earth	29 ^c	2,270 ^c	W	W	27	2,400
Kaolin	W	W	39	8,420	33	7,150
Gemstones, natural	NA	12	NA	12	NA	201
Gypsum, crude	W	W	2,060	13,400	1,810	12,300
Helium, crude	9	9,320	W	W	W	W
Lime	1,610	108,000	1,530	98,400	1,630	110,000
Salt	9,370	104,000	9,100	103,000	9,640	116,000
Sand and gravel:						
Construction	82,900	405,000	82,600	413,000	85,200	425,000
Industrial	1,850	70,000	1,670	62,200	1,930	81,700
Stone:						
Crushed	126,000 ^r	606,000 ^r	113,000	543,000	126,000	642,000
Dimension	86	12,600	65	12,200	87	16,400
Talc, crude	224	4,070	W	W	246	W
Zeolites	W	NA	W	NA	W	NA
Combined values of brucite, clays (ball, bentonite), helium (Grade-A), and values indicated by symbol W						
	XX	35,100	XX	40,900 ^r	XX	33,300
Total	XX	2,140,000 ^r	XX	2,090,000	XX	2,240,000
Utah:						
Beryllium concentrates	2,480	3	1,970	2	2,100	2
Clays:						
Bentonite	51	W	W	W	W	W
Common	360	5,490	349	5,010	300	3,270
Gemstones, natural	NA	1,020	NA	230	NA	233
Salt	2,300	121,000	2,090	113,000	2,200	119,000
Sand and gravel, construction	28,400	109,000	27,600	104,000	27,400	113,000
Stone, crushed	8,430	40,500	7,640	38,100	7,820	36,200
Combined values of cement (portland), copper, gold, gypsum (crude), helium (Grade-A), lime, magnesium compounds, magnesium metal, molybdenum concentrates, perlite (crude), phosphate rock, potash, silver, stone (dimension sandstone), and values indicated symbol W						
	XX	1,090,000	XX	980,000	XX	1,080,000
Total	XX	1,360,000	XX	1,240,000	XX	1,350,000

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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
Vermont:						
Gemstones, natural	NA	1	NA	1	NA	1
Sand and gravel, construction	4,570	20,000	4,990	22,200	4,520	21,100
Stone:						
Crushed	4,950	24,300	4,360	21,300	4,290	22,600
Dimension	98	26,500	101	27,000	102	26,700
Talc, crude	metric tons	W (7)	W (7)	W (7)	W (7)	W (7)
Total	XX	70,800	XX	70,600	XX	70,500
Virginia:						
Clays, common	937	1,840	827	3,320	958	2,530
Kyanite ^c	90	13,400	90	13,400	90	13,400
Sand and gravel, construction	11,800	64,400	10,500	60,000	11,300	65,500
Stone:						
Crushed	69,100	446,000	58,900	395,000	67,200	486,000
Dimension	6	626	6	651	6	651
Combined values of cement, clays (fuller's earth), feldspar, gemstones (natural), iron oxide pigments (crude), lime, sand and gravel (industrial), titanium concentrates (ilmenite), vermiculite (crude), zirconium concentrates	XX	206,000	XX	218,000	XX	223,000
Total	XX	732,000	XX	690,000	XX	790,000
Washington:						
Clays, common	89	258	89	169	83	204
Gemstones, natural	NA	25	NA	29	NA	44
Gold ³	kilograms	1,700	14,900	980	9,810	--
Sand and gravel, construction	41,400	220,000	43,200	223,000	40,700	216,000
Silver ³	kilograms	--	--	729	108	--
Stone, crushed	14,100	84,300	13,700	79,900	12,000	73,500
Combined values of cement (portland), diatomite, lime, magnesium metal (2001), olivine, peat, sand and gravel (industrial), stone (dimension miscellaneous)	XX	178,000	XX	124,000	XX	107,000
Total	XX	498,000	XX	437,000	XX	396,000
West Virginia:						
Clays, common	167	462	151	407	142	376
Gemstones, natural	NA	1	NA	1	NA	1
Sand and gravel, construction	1,820	9,260	1,700	8,450	971	4,750
Stone, crushed	15,300	65,700	14,400	63,400	14,100	68,700
Combined values of cement, lime, peat, salt, sand and gravel (industrial), stone (dimension sandstone)	XX	102,000	XX	94,900	XX	90,100
Total	XX	177,000	XX	167,000	XX	164,000
Wisconsin:						
Cement, portland	--	--	W (7)	(7)	W (7)	(7)
Gemstones, natural	NA	6	NA	6	NA	6
Lime	617	36,900	603	35,600	757	46,000
Peat	W (7)	(7)	W (7)	(7)	W (7)	(7)
Sand and gravel:						
Construction	41,600	159,000	39,000	154,000	38,500	150,000
Industrial	1,710	(7)	1,740	32,700	1,930	40,200
Stone:						
Crushed	36,600	150,000	36,200	151,000	36,600	196,000
Dimension	99	18,900	100	19,300	101	19,700
Total	XX	365,000	XX	392,000	XX	452,000

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	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
Wyoming:						
Clays:						
Bentonite	3,580	153,000	3,340	145,000	3,420	148,000
Common	11 ^e	47 ^e	33	446	25	55
Gemstones, natural	NA	12	NA	12	NA	13
Sand and gravel, construction	7,200	35,100	7,710	32,100	8,290	36,400
Stone, crushed	4,370	20,400	4,890	23,300	5,030	24,800
Combined values of cement (portland), gypsum (crude), helium (Grade-A), lime, soda ash	XX	806,000	XX	806,000	XX	789,000
Total	XX	1,010,000	XX	1,010,000	XX	998,000
Undistributed, Connecticut, Delaware, Hawaii, Maryland (2001), Massachusetts, Minnesota, Nebraska, New Hampshire, Pennsylvania, Rhode Island, South Carolina (2001-02), Vermont, Wisconsin, undistributed (2002-03)	XX	230,000 ^f	XX	202,000 ^f	XX	223,000

^eEstimated. ^fRevised. NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined values" data for each State. XX Not applicable. -- Zero.

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

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

³Recoverable content of ores, etc.

⁴Data collected by State.

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

⁶Grindstones, pulpstones, and sharpening stones; excludes mill liners and grinding pebbles.

⁷Withheld to avoid disclosing company proprietary data; values included in "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)

Mineral	2001		2002		2003	
	Quantity	Value	Quantity	Value	Quantity	Value
Puerto Rico:						
Cement, portland	1,550	W	1,530	(3)	1,490	(3)
Clays, common	132	351	114 ^r	585	114	585
Lime	11	2,250	W	(3)	W	(3)
Salt	45	1,500	45	1,500	45	1,500
Sand and gravel, industrial	32	1,200	W	(3)	W	(3)
Stone:						
Crushed	8,000	38,000	7,940	40,600	9,130	60,000
Dimension, marble	W	W	W	(3)	W	(3)
Total	XX	43,300	XX	187,000	XX	181,000
Administered Islands:						
American Samoa, stone, crushed, traprock	--	--	W	W	W	W
Guam, stone, crushed	477	1,900 ^e	846	8,370	728	7,670
Virgin Islands, stone, crushed limestone and traprock	W	W	W	W	W	W
Total	XX	1,900	XX	8,370	XX	7,670

^eEstimated. ^rRevised. W Withheld to avoid disclosing company proprietary data. XX Not applicable. -- Zero.

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

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

³Withheld to avoid disclosing company proprietary data; values included in "Total."

TABLE 7
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS¹

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	2002		2003		
	Quantity	Value	Quantity	Value	
Metals:					
Aluminum:					
Crude and semicrude	metric tons	1,590,000	3,160,000	1,540,000	3,220,000
Manufactures	do.	100,000	330,000	115,000	365,000
Antimony:					
Metal, alloys, waste and scrap	do.	992	2,500	771	3,010
Oxide, antimony content	do.	3,260	10,900	2,910	11,600
Arsenic metal, arsenic content	do.	100	11,100	173	15,200
Bauxite and alumina:					
Alumina, calcined equivalent		1,270	362,000	1,090	368,000
Bauxite:					
Calcined, refractory and other grade		15	2,130	22	3,420
Crude and dried		27	2,900	55	8,270
Speciality aluminum compounds, sulfate, chloride, fluoride-based	metric tons	28,900	20,900	36,200	27,200
Beryllium, alloys, wrought or unwrought, and waste and scrap	kilograms	165,000	9,210	269,000	18,800
Bismuth, metal, alloys, waste and scrap, bismuth content	do.	131,000	1,320	108,000	3,130
Cadmium:					
Metal, includes cadmium in alloys and scrap	do.	168,000 ^r	1,270 ^r	558,000	1,060
Sulfide, gross weight	do.	25,400	13	184,000	97
Chromium:					
Chemicals:					
Oxides, trioxides and other	metric tons	10,800	23,400	10,100	20,600
Salts of oxometallic or peroxometallic acids, zinc and lead chromate, sodium dichromate, potassium dichromate, other	do.	13,300	14,600	12,200	8,590
Sulfates	do.	93	365	5	62
Metals and alloys:					
Ferroalloys, high-carbon, low-carbon, ferrochromium-silicon	do.	15,900	10,100	4,890	5,240
Metal, unwrought powders, waste and scrap, other	do.	745	7,450	941	11,900
Ores and concentrate	do.	24,300	4,070	103,000	7,410
Pigments and preparations	do.	824	7,650	867	4,610
Cobalt:					
Acetates and chlorides	do.	383	1,430	616	3,370
Oxides and hydroxides	do.	558	7,040	375	6,110
Metal:					
Unwrought, powders, waste and scrap, mattes, other intermediate products of metallurgy	do.	1,600	34,800	2,290	48,600
Wrought and cobalt articles	do.	923	26,600	1,010	31,300
Columbium (niobium) and tantalum:					
Columbium (niobium):					
Ferrocolumbium	do.	126	1,500	143	1,430
Ores and concentrates	do.	64	435	170	1,270
Tantalum:					
Ores and concentrates, includes synthetic	do.	306	2,010	365	4,360
Unwrought, alloys, metal, powders, waste and scrap	do.	263	119,000	348	163,000
Wrought	do.	190	96,200	119	62,200
Copper:					
Scrap, alloyed and unalloyed	do.	511,000	508,000	689,000	664,000
Semimanufactures	do.	191,000	541,000 ^r	189,000	537,000
Unmanufactured, does not include unalloyed scrap, copper content	do.	99,600	157,000	145,000	265,000
Ferroalloys not listed elsewhere:					
Ferrophosphorous	do.	1,250	860	787	511
Other	do.	7,650	7,430	1,350	2,470
Gold:					
Bullion, refined	kilograms	185,000	1,830,000	220,000	2,500,000
Compounds	do.	417,000	8,550	565,000	10,600
Dore and precipitates	do.	71,700	720,000	131,000	1,550,000
Metal powder	do.	10,900	107,000	874	9,590
Ores and concentrates	do.	556	4,020	826	7,870
Waste and scrap	do.	85,800	507,000	159,000	559,000
Indium ^e	metric tons	10	730	10	1,740

See footnotes at end of table.

TABLE 7--Continued
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS¹

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	2002		2003	
	Quantity	Value	Quantity	Value
Metals--Continued:				
Iron and steel:				
Cast iron and steel products	228	475,000	206	374,000
Fabricated steel products	873 ^r	2,950,000	963	3,170,000
Steel mill products	5,450	4,500,000	7,460	5,490,000
Iron and steel scrap:				
Direct-reduced iron, steelmaking grade	4 ^r	2,160 ^r	7	2,090
Ferrous, includes tinplate and ternplate, excludes used rails for rerolling and other uses, ships, boats, other vessels for scrapping	8,200 ^r	1,170,000 ^r	9,770	1,760,000
Pig iron, all grades	25 ^r	3,830 ^r	75	7,610
Ships, boats, and other vessels for scrapping	40	3,230	48	2,580
Used rails for rerolling and other uses, includes mixed (new plus used) rails	12	4,680	49	16,100
Iron ore	6,750	249,000	6,770	248,000
Lead:				
Base bullion, Pb content	metric tons	256	387	593
Ore and concentrates, Pb content	do.	241,000	87,200	253,000
Scrap, gross weight	do.	106,000	23,300	92,800
Unwrought and alloys, Pb content	do.	31,400	19,700	92,100
Wrought and alloys, Pb content	do.	11,700	24,300	30,500
Magnesium:				
Alloys, gross weight	do.	4,210	14,000	2,330
Metal, Mg content	do.	11,300	21,800	8,770
Powder, sheets, tubing, ribbons, wire, other forms, gross weight	do.	4,010	27,400	4,260
Waste and scrap, Mg content	do.	5,850	14,700	5,030
Manganese, gross weight:				
Ferromanganese, all grades	do.	9,230	6,300	10,600
Metal, including alloys, and waste and scrap	do.	2,200 ^r	6,000 ^r	2,340
Ores and concentrates with 20% or more manganese	do.	15,000	4,100	18,200
Silicomanganese	do.	523	439	606
Mercury	do.	201	1,050 ^r	287
Molybdenum:				
Chemicals:				
Oxides and hydroxides, gross weight	do.	1,670	11,800	2,580
Molybdates, all, gross weight	do.	1,350	8,910	2,270
Ferromolybdenum, Mo content	do.	676	6,970	617
Ore and concentrates, including roasted and other, Mo content	do.	19,500	112,000	29,500
Other, includes powders, unwrought, bars and rods, waste and scrap, wire, other, gross weight	do.	854 ^r	24,400 ^r	1,060
Nickel, Ni content:				
Alloyed, unwrought ingot, bars, rods, profiles, wire, sheets, strip, foil, tubes, pipes, other alloyed articles	do.	29,100	460,000	25,900
Primary, chemicals and unwrought	do.	6,520	102,000	6,330
Secondary, stainless steel scrap and waste and scrap	do.	39,400	304,000	47,300
Wrought, not alloyed, bars, rods, profiles, wire, sheets, strip, foil, tubes, pipes	do.	2,570	33,100	2,890
Platinum-group metals:				
Iridium, osmium, ruthenium, gross weight	kilograms	94 ^r	1,360 ^r	145
Palladium, Pd content	do.	42,700	350,000	22,300
Platinum, includes waste and scrap, Pt content	do.	45,500	578,000	45,900
Rhodium, Rh content	do.	349 ^r	12,500	479
Rare earths, estimated rare-earth oxide content:				
Cerium compounds	do.	2,740,000 ^r	13,900 ^r	1,910,000
Compounds, inorganic and organic	do.	1,340,000 ^r	21,200 ^r	1,790,000
Ferrocerium and other pyrophoric alloys	do.	2,830,000 ^r	8,860 ^r	2,880,000
Metals, including scandium and yttrium	do.	1,310,000	5,900 ^r	730,000
Selenium, metal, waste and scrap, Se content	do.	86,700 ^r	744 ^r	243,000
Silicon, gross weight:				
Ferrosilicon	metric tons	12,700	10,600	11,600
Metal	do.	15,200	305,000	20,100

See footnotes at end of table.

TABLE 7--Continued
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS¹

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	2002		2003		
	Quantity	Value	Quantity	Value	
Metals--Continued:					
Silver:					
Bullion, Ag content	kilograms	624,000	97,900	135,000	20,700
Dore, Ag content	do.	22,700	3,360	19,800	3,190
Metal powder, gross weight	do.	360,000	63,600	473,000	81,500
Nitrate, gross weight	do.	81,200	9,560	69,200	9,120
Ores and concentrates, Ag content	do.	230,000	56,600	57,900	16,200
Semimanufactured forms containing 99.5% or more by weight of silver, gross weight	do.	290,000	50,300	344,000	59,400
Waste and scrap, gross weight	do.	2,380,000	555,000	2,020,000	410,000
Unwrought, other, gross weight	do.	32,700	9,960	26,000	5,470
Thallium, unwrought powders, waste and scrap, others	do.	651	167	2,090	203
Thorium and thorium-bearing materials, thorium ore, monazite concentrate, compounds	do.	1,930 ^r	374 ^r	24,900	2,910
Tin:					
Ingots and pigs	metric tons	2,940	14,800	3,690	18,500
Tin scrap and other tin-bearing material, except tinplate scrap, includes rods, profiles, wire, powders, flakes, tubes, pipes	do.	24,500	32,200	24,500	32,600
Tinplate and terneplate	do.	219,000	129,000	263,000	154,000
Titanium:					
Ferrotitanium and ferrosilicon titanium	do.	834	2,340	967	2,930
Metal, wrought and unwrought	do.	17,600	338,000	18,500	379,000
Ores and concentrates	do.	3,810	2,260	10,300	2,720
Pigment, dioxide and oxide	do.	540,000	823,000	584,000	958,000
Tungsten, W content:					
Ammonium paratungstate	do.	69	596	99	543
Carbide powder	do.	1,250	20,400	1,690	19,700
Metal powders	do.	496	19,000	1,130	24,100
Miscellaneous tungsten-bearing materials, ferrotungsten, ferrosilicon tungsten, unwrought, waste and scrap, wrought, compounds	do.	1,400	28,600	2,150	34,700
Ores and concentrates	do.	94	2,990	20	630
Vanadium:					
Aluminum-vanadium master alloy, gross weight	kilograms	529,000	11,700	9,590,000	22,800
Ferrovandium, V content	do.	142,000	1,580	424,000	5,740
Metal, including waste and scrap, gross weight	do.	49,200	898	201,000	3,910
Pentoxide, anhydride, V content	do.	453,000	2,070	791,000	4,720
Other oxides and hydroxides, V content	do.	443,000	3,710	438,000	3,810
Zinc:					
Compounds, chloride, compounds, n.s.p.f., oxide, sulfate	metric tons	21,500	27,000	22,600	27,900
Ores and concentrates, Zn content	do.	822,000	322,000	841,000	377,000
Rolled	do.	7,200	8,980	9,430	9,880
Slab	do.	1,160	1,210	1,680	1,760
Zirconium:					
Ferrozirconium	do.	868	1,370	1,930	2,030
Ores and concentrates	do.	47,100	24,600	70,600	37,600
Oxide, includes germanium oxides and zirconium dioxides	do.	1,950	17,600	1,520	15,900
Unwrought powders	do.	109	2,290	101	2,400
Waste and scrap	do.	1,530	89,100	1,590	94,000
Total		XX	23,400,000 ^r	XX	27,300,000
Industrial minerals:					
Abrasives, manufactured:					
Aluminum oxide, crude	do.	10,300	31,400	11,800	34,600
Metallic abrasives	do.	18,800	12,900	22,000	14,600
Silicon carbide, crude, ground and refined	do.	13,700	12,300	13,200	12,100
Asbestos, includes reexports:					
Manufactured		NA	203,000 ^r	NA	290,000
Unmanufactured	metric tons	6,550	2,020	2,820	920
Barite, natural barium sulfate	do.	47,200	4,230	44,400	4,620
Boron minerals and compounds:					
Boric acid, includes orthoboric and anhydrous		84	44,600	70	36,400
Sodium borates		150	63,100	131	55,400
Bromine:					
Compounds, includes methyl bromine and ethylene dibromide, Br content	metric tons	6,750	13,600	6,040	11,800
Elemental, gross weight	do.	6,070	4,680	2,280	3,090

See footnotes at end of table.

TABLE 7--Continued
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS¹

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	2002		2003		
	Quantity	Value	Quantity	Value	
Industrial minerals--Continued:					
Cement, hydraulic and clinker	843	57,700	837	61,600	
Clays:					
Ball	127	7,050	139	8,430	
Bentonite	722	87,600	721	88,100	
Fire	251	22,800	285	27,400	
Fuller's earth	60	8,670	48	8,830	
Kaolin	3,350	536,000	3,520	574,000	
Other, n.e.c., includes chamotte or dinas earth, activated clays and earths, artificially activated clays	449	156,000	416	153,000	
Diamond:					
Gemstones, natural, including reexports	thousand carats	14,300	4,400,000	16,500	5,020,000
Industrial including exports and reexports:					
Powder, dust and grit, natural and synthetic	do.	89,700	58,900	81,100	46,700
Unworked	do.	2,430	19,800	2,710	23,100
Diatomite		128	40,400	136	43,300
Feldspar	metric tons	9,590	1,370	8,950	1,310
Fluorspar	do.	24,300	3,540	30,700	4,610
Garnet, industrial ^c		10	8,600	11	7,460
Graphite, natural and artificial ²	metric tons	81,700	99,600	91,900	97,500
Gypsum and gypsum products:					
Boards		61	33,700	50	39,300
Crude		341	16,500	166	18,600
Plasters		186	31,400	161	31,000
Other		XX	20,200	XX	21,800
Helium, Grade-A	million cubic meters	40	73,400	41	78,200
Iodine:					
Crude/resublimed	metric tons	1,580 ^r	19,700 ^r	1,590	19,600
Potassium iodide	do.	84 ^r	1,180 ^r	51	1,010
Iron oxide pigments and hydroxides:					
Pigment grade	do.	6,270	12,100	4,500	11,000
Other grade	do.	44,400	45,100	48,800	32,700
Lime		106	13,100	98	13,700
Lithium chemicals:					
Carbonate	metric tons	3,870	12,600	2,980	9,910
Hydroxide	do.	5,400	20,600	5,830	21,400
Magnesium compounds:					
Compounds, chlorides, hydroxide and peroxide, sulfates	do.	29,900	17,400	31,300	17,000
Magnesite, crude and processed:					
Caustic-calcined magnesia	do.	5,540	3,390	4,060	2,330
Crude	do.	19,100	2,310	18,000	2,030
Dead-burned and fused magnesia	do.	72,700	22,900	56,500	20,900
Other magnesia	do.	31,900	22,000	27,500	18,800
Mica:					
Scrap and flake:					
Powder	do.	7,760	4,060	8,020	5,190
Waste	do.	2,050	686	2,350	794
Sheet:					
Unworked	do.	38	108	34	99
Worked	do.	685	12,400	821	12,300
Peat		32	2,990	29	3,090
Perlite, crude and expanded ^c	metric tons	42,000	1,530	37,000	1,410
Pumice and pumicite		30	11,000	26	11,000
Salt		689	31,600	718	37,500
Sand and gravel:					
Construction:					
Gravel		596	4,230	593	4,180
Sand		2,640	19,200	1,180	20,700
Industrial		1,410	145,000	2,620	155,000
Silica, special stone products		NA	7,300	NA	7,800
Soda ash		4,250	500,000	4,450	515,000

See footnotes at end of table.

TABLE 7--Continued
 U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS¹

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	2002		2003	
	Quantity	Value	Quantity	Value
Industrial minerals--Continued:				
Stone:				
Crushed	2,560	54,000	1,010	45,600
Dimension	XX	64,000	XX	63,500
Strontium:				
Carbonate, precipitated	metric tons	115	244	375
Oxide, hydroxide, peroxide	do.	377	219	653
Sulfur:				
Elemental		687	40,000	742
Sulfuric acid, 100% H ₂ SO ₄	metric tons	147,000	12,800	205,000
Talc, excludes powders, talcum (in package), face, compact		166	35,700	192
Vermiculite ^c		10	1,300	15
Wollastonite ^c		4,750	1,900	4,000
Zeolites ^c	metric tons	150	30	1,000
Total		XX	7,220,000 ^r	XX
Grand total		XX	30,600,000 ^r	XX

^cEstimated. ^rRevised. NA Not available. XX Not applicable.

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

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

TABLE 8
U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS¹

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	2002		2003		
	Quantity	Value	Quantity	Value	
Metals:					
Aluminum:					
Crude and semicrude	metric tons	4,060,000	6,490,000 ^r	4,130,000	6,840,000
Manufactures	do.	227,000	541,000	271,000	642,000
Antimony:					
Metal	do.	4,050	6,870	4,670	10,800
Ore and concentrate, antimony content	do.	1,310	3,050	412	1,010
Oxide, antimony content	do.	23,200	46,700	21,600	54,400
Arsenic:					
Acid	do.	1	4	--	--
Metal	do.	879	3,390	990	3,040
Sulfide	do.	--	--	1	6
Trioxide	do.	24,700	12,600	27,300	13,800
Bauxite and alumina:					
Alumina, calcined equivalent		3,010	633,000	2,310	571,000
Bauxite:					
Calcined, refractory and other grade		237	20,300	307	25,700
Crude and dried		7,340	147,000	8,390	137,000
Speciality aluminum compounds, sulfate, chloride, fluoride-based	metric tons	23,500	15,000	16,300	9,360
Beryllium, ore, metal, and compounds	kilograms	507,000	3,420	410,000	3,260
Bismuth, metallic	do.	1,930,000	12,200	2,320,000	14,400
Cadmium:					
Metal	do.	24,700	978	18,000	383
Sulfide, gross weight	do.	6,710	88	7,470	53
Chromium:					
Chemicals:					
Carbide	metric tons	261	2,760	203	2,340
Oxides, trioxides and other	do.	19,400	34,100	16,600	26,500
Salts of oxometallic or peroxometallic acids, zinc and lead chromate, sodium dichromate potassium dichromate, other	do.	19,400	10,700	3,650	2,750
Sulfates	do.	76	90	162	194
Chromite ore	do.	112,000	6,720 ^r	173,000	9,290
Metals and alloys:					
Ferroalloys, high-carbon, low-carbon, ferrochromium-silicon	do.	345,000	135,000	430,000	214,000
Metal, unwrought powders, waste and scrap, other	do.	7,430	42,900	8,570	45,200
Pigments and preparations based on chromium	do.	9,130	23,700	8,290	21,700
Cobalt:					
Metal:					
Alloys, articles, matte, wrought, waste and scrap	do.	526	14,700	678	15,400
Unwrought, excluding alloys and waste and scrap, includes cathode and metal powder; may include intermediate products of cobalt metallurgy	do.	6,800	114,000	6,700	135,000
Oxide and hydroxides	do.	1,300	20,000	1,370	23,000
Other forms, includes acetates, carbonates, chlorides, sulfates	do.	2,580	10,500	1,350	8,350
Columbium (niobium) and tantalum:					
Columbium:					
Ferrocolumbium	do.	6,200	52,500	6,280	54,700
Ores and concentrates	do.	22	326	23	610
Oxide	do.	935	14,600	837	12,200
Unwrought, alloys, metals, powder	do.	673	19,000	743	16,400
Tantalum:					
Ores and concentrates, includes synthetic concentrates	do.	2,400	83,500	1,580	60,100
Unwrought, alloys, metal, powders, waste and scrap	do.	500	51,000	441	57,700
Wrought	do.	51	10,900	32	7,760
Copper:					
Scrap, alloyed and unalloyed	do.	80,300	128,000	71,100	124,000
Semimanufactures	do.	453,000 ^r	929,000 ^r	427,000	939,000
Unmanufactured, does not include unalloyed scrap, copper content	do.	1,150,000	1,960,000	1,070,000	1,990,000
Ferroalloys not listed elsewhere:					
Ferrophosphorus	do.	9,470	1,670	11,700	2,250
Other	do.	20,700	24,500	16,200	19,000

See footnotes at end of table.

TABLE 8--Continued
U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS¹

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	2002		2003		
	Quantity	Value	Quantity	Value	
Metals--Continued:					
Gallium:					
Gallium arsenide wafers, doped and undoped	kilograms	120,000	93,900	142,000	118,000
Unwrought and waste and scrap	do.	13,100	3,550	14,300	3,520
Germanium, wrought, unwrought, waste and scrap, gross weight	do.	13,100	6,410	8,380	6,310
Gold:					
Bullion, refined	do.	172,000	1,740,000	152,000	1,810,000
Compounds	do.	18,100	952	31,800	785
Dore and precipitates	do.	42,200	334,000	95,200	832,000
Metal powder	do.	10,700	93,500	4,080	43,000
Ores and concentrates	do.	2,720	27,700	1,960	23,300
Waste and scrap	do.	11,900	74,400	15,000	133,000
Indium, unwrought and waste and scrap	do.	112,000	7,750	123,000	16,600
Iron and steel:					
Cast iron and steel products		569	445,000	545	445,000
Fabricated steel products		4,240	6,160,000	4,300	6,770,000
Stainless steel	metric tons	609,000	1,500,000 ^r	526,000	2,040,000
Steel mill products		29,600	12,100,000	21,000	10,400,000
Iron and steel scrap:					
Direct-reduced iron, steelmaking grade		1,850 ^r	182,000 ^r	1,760	221,000
Ferrous, includes tinplate and terplate, excludes used rails for rerolling and other uses, ships, boats, other vessels for scrapping		2,840 ^r	341,000 ^r	3,160	463,000
Pig iron, all grades		4,060 ^r	463,000 ^r	3,530	518,000
Ships, boats, and other vessels for scrapping		(2)	5	3	583
Used rails for rerolling and other uses, includes mixed (new plus used), rails		195	26,900	207	45,600
Iron ore		12,500	313,000	12,600	328,000
Lead:					
Ores and concentrates, Pb content	metric tons	6	8	--	--
Pigments and compounds, Pb content	do.	33,300	44,200	36,000	50,100
Pigs and bars, Pb content	do.	210,000	107,000	175,000	92,400
Scrap, reclaimed, includes ash and residues, Pb content	do.	2,570	1,740	4,150	2,360
Wrought, all forms, including wire and powders, gross weight	do.	7,990	16,200	7,780	17,800
Magnesium:					
Alloys, Mg content	do.	41,900	109,000	38,800	98,900
Metal, gross weight	do.	29,900	63,900	27,300	53,600
Powder, sheets, tubing, ribbons, wire, other forms, Mg content	do.	2,090	12,200	1,160	10,400
Waste and scrap, gross weight	do.	14,100	20,900	16,200	22,000
Manganese:					
Chemicals, manganese dioxide and potassium permanganate, gross weight	do.	38,200	53,500	50,900	64,700
Ferromanganese, all grades, Mn content	do.	218,000	124,000	187,000	117,000
Metal, unwrought, waste and scrap, other, gross weight	do.	29,600	27,100	19,800	20,800
Ores and concentrates with 20% or manganese, all grades, Mn content	do.	214,000	29,200	175,000	27,000
Silicomanganese, Mn content	do.	165,000	111,000	182,000	133,000
Mercury	do.	209	889	46	914
Molybdenum:					
Chemicals, gross weight:					
Oxides and hydroxides	do.	1,210	7,500	1,300	9,600
Molybdates, all	do.	2,170	12,500	1,940	12,600
Orange	do.	1,300	5,330	987	4,310
Ferromolybdenum, Mo content	do.	3,590	30,900	3,690	37,500
Ores and concentrates, including roasted and other, Mo content	do.	4,710	36,700	5,190	51,400
Other, includes powders, unwrought, bars and rods, waste and scrap, wire, other, gross weight	do.	879	16,000	712	15,400
Nickel, Ni content:					
Alloyed, unwrought ingot, bars, rods, profiles, wire, sheets, strip, foil, tubes, pipes, other alloyed articles	do.	18,800	241,000	18,300	277,000
Primary, chemicals and unwrought	do.	121,000	864,000	125,000	1,150,000
Secondary, stainless steel scrap and waste and scrap	do.	9,110	67,400	11,500	108,000
Wrought, not alloyed, bars, rods, profiles, wire, sheets, strip, foil, tubes, pipes	do.	879	14,800	659	13,400

See footnotes at end of table.

TABLE 8--Continued
U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS¹

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	2002		2003		
	Quantity	Value	Quantity	Value	
Metals--Continued:					
Platinum-group metals, metal content:					
Iridium, unwrought and other forms	kilograms	2,100	20,100	2,200	6,090
Osmium, unwrought	do.	36	294	53	430
Palladium, unwrought and other	do.	117,000	1,160,000	105,000	663,000
Platinum, grains and nuggets, sponge, other unwrought, other, waste and scrap, coins	do.	84,800 ^r	1,400,000	88,400	1,770,000
Rhodium, unwrought and other forms	do.	8,630	288,000	12,000	202,000
Ruthenium, unwrought	do.	9,890	21,400	15,900	16,700
Rare earths, estimated rare-earth oxide content:					
Cerium compounds, including oxides, hydroxides, nitrates, sulfate chlorides, oxalates	do.	2,540,000	19,100	2,430,000	15,100
Compounds, including oxides, hydroxides, nitrates, other compounds except chlorides	do.	7,260,000	49,200	9,580,000	55,500
Ferrocerium and other pyrophoric alloys	do.	89,500	1,220	102,000	1,650
Metals, whether intermixed or alloyed	do.	1,450,000 ^r	9,990	84,000	5,140
Mixtures of rare-earth chlorides, except cerium chloride	do.	1,800,000	5,600	1,910,000	6,210
Mixtures of rare-earth oxides except cerium oxide	do.	1,040,000	4,510	1,710,000	6,100
Yttrium compounds content by weight greater than 19% but less than 85% oxide equivalent	do.	44,000	3,870	51,900	4,330
Rhenium:					
Ammonium perrhenate	do.	3,330	2,720	1,990	1,560
Metal	do.	14,300	14,700	13,200	14,400
Selenium and tellurium:					
Selenium, Se content:					
Selenium dioxide	do.	12,200 ^r	129 ^r	14,500	169
Unwrought and waste and scrap	do.	410,000 ^r	3,310 ^r	353,000	4,410
Tellurium, unwrought waste and scrap, gross weight	do.	28,100 ^r	1,770 ^r	48,900	1,610
Silicon, gross weight:					
Ferrosilicon	metric tons	207,000	120,000	270,000	183,000
Metal	do.	146,000	237,000	128,000	220,000
Silver:					
Ash and residues, Ag content	kilograms	63,500	11,600	1,340	266
Bullion, Ag content	do.	4,020,000	593,000	4,000,000	630,000
Dore, Ag content	do.	16,600	4,430	233,000	72,200
Metal powder, gross weight	do.	12,100	2,540	20,800	4,160
Nitrate, gross weight	do.	572	103	661	96
Ores and concentrates, Ag content	do.	61,000	13,100	2,540	1,370
Semimanufactured forms containing 99.5% or more by weight of silver, gross weight	do.	70,800 ^r	10,400 ^r	17,000	2,700
Waste and scrap, gross weight	do.	816,000	117,000	886,000	107,000
Unwrought, other, gross weight	do.	263,000	38,700	281,000	42,200
Thallium, unwrought powders, waste and scrap, other	do.	307	76	81	20
Thorium and thorium-bearing materials, compounds	do.	650	22	4,140	149
Tin, gross weight:					
Compounds	metric tons	449	3,230	443	3,000
Dross, skimmings, scrap, residues, alloys, n.s.p.f.	do.	2,280	7,170	3,290	10,500
Metal, unwrought	do.	42,200	167,000	37,000	169,000
Miscellaneous, includes tin foil, tin powder, flitters, metallics, manufactures, n.s.p.f.	do.	NA	1,510	NA	3,510
Tinplate and terneplate	do.	254,000	143,000	282,000	173,000
Tinplate scrap	do.	12,800	1,820	20,100	3,390
Titanium:					
Concentrate:					
Ilmenite	metric tons	395,000	41,300	395,000	39,500
Rutile, natural and synthetic	do.	390,000	149,000	427,000	162,000
Ferrotitanium and ferrosilicon titanium	do.	3,700	9,960	3,160	9,670
Metal:					
Unwrought:					
Ingots and billets	do.	1,210	17,800	759	10,400
Other, includes blooms, sheet, bars, slabs, other unwrought	do.	392	1,560	687	3,560
Powder	do.	75	1,120	129	1,890
Sponge	do.	10,700	72,200	9,590	63,500
Waste and scrap	do.	6,270	17,800	5,550	19,700

See footnotes at end of table.

TABLE 8--Continued
U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS¹

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	2002		2003		
	Quantity	Value	Quantity	Value	
Metals--Continued:					
Titanium--Continued:					
Metal--Continued:					
Wrought products and castings, includes bar, castings, foil, pipe, plate, profile, rod, sheet, strip, tube, wire, other	metric tons	2,680	62,500	3,640	82,600
Pigment, dioxide and oxide	do.	231,000	376,000 ^r	240,000	397,000
Titaniferous iron ore	do.	36,600	3,330	18,900	1,390
Titaniferous slag	do.	445,000	194,000	409,000	163,000
Tungsten, W content:					
Ammonium paratungstate	do.	2,400	16,300	2,640	16,300
Ferrotungsten and ferrosilicon tungsten	do.	480	2,930	377	2,380
Miscellaneous tungsten-bearing materials, metal powders, carbide powder, unwrought, waste and scrap, wrought, oxides, calcium tungstate, other tungstates, other compounds	do.	3,630	56,700	4,600	64,100
Ores and concentrates	do.	4,090	24,500	4,690	26,200
Vanadium:					
Aluminum-vanadium master alloy, gross weight	kilograms	97,500	206	232,000	425
Ferrovandium, V content	do.	2,520,000	19,400	1,690,000	14,300
Metal, including waste and scrap, gross weight	do.	32,300	1,270	186,000	2,850
Miscellaneous chemicals, sulfates and vanadates, V content	do.	62,200	845	72,900	902
Pentoxide, anhydride, V content	do.	406,000	1,990	453,000	3,610
Vanadium-bearing ash, residues, slag from the manufacture of iron and steel, V ₂ O ₅ content	do.	3,330,000	2,080	3,960,000	5,760
Other oxides and hydroxides, V content	do.	65,800 ^r	560	74,300	769
Zinc:					
Compounds, lithopone, chloride, compounds n.s.p.f., hydrosulfite, oxide, sulfate oxide, sulfate	metric tons	91,600	69,800	126,000	85,800
Ores and concentrates, Zn content	do.	122,000	44,600	164,000	60,000
Rolled	do.	1,640	4,810	1,790	5,500
Slab, refined	do.	874,000	716,000	785,000	647,000
Zirconium and hafnium:					
Hafnium, unwrought, including powders	do.	5	668	5	911
Zirconium:					
Ferrozirconium	do.	167	295	154	245
Ores and concentrates	do.	35,300	14,000	37,400	14,800
Oxide, includes germanium oxides and zirconium oxides	do.	2,900	31,700	2,350	22,300
Unwrought powder	do.	48	1,850	52	2,260
Waste and scrap	do.	508	37,100	491	42,200
Total		XX	44,000,000 ^r	XX	45,100,000
Industrial minerals:					
Abrasives, manufactured:					
Aluminum oxide, crude, ground and refined	metric tons	179,000 ^r	67,700	164,000	67,000
Metallic abrasives	do.	12,400	8,120	16,500	9,650
Silicon carbide, crude, ground and refined	do.	165,000	79,700	170,000	78,900
Asbestos:					
Chrysotile and other unspecified type	do.	6,850	1,770	4,650	5,840
Products with basis of asbestos, cellulose, or other minerals		NA	NA	NA	577,000
Barite:					
Chemicals; chloride, oxide, hydroxide, peroxide, nitrate, precipitated carbonate	metric tons	30,800	17,000	18,300	16,000
Crude	do.	1,510,000	63,100	1,620,000	68,200
Ground	do.	5,170	594	174	15
Other sulfates	do.	31,200	17,700	32,800	17,300
Boron minerals and compounds:					
Borax		(2)	94	(2)	19
Boric acid		49	18,500 ^r	47	19,000
Colemanite		32	8,960	24	6,960
Ulexite		125	25,000	80	16,000
Bromine:					
Compounds, contained bromine	metric tons	4,700	22,500	7,900	49,500
Elemental	do.	2,020	1,530	1,920	1,450

See footnotes at end of table.

TABLE 8--Continued
U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS¹

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	2002		2003	
	Quantity	Value	Quantity	Value
Industrial minerals--Continued:				
Cement, hydraulic and clinker	24,200	939,000	23,200	913,000
Clays:				
Artificially activated clay and activated earth	metric tons	26,800	11,300	21,000
Bentonite	do.	29,100	3,350	12,700
Chamotte or dina's earth	do.	--	--	3
China clay or kaolin	do.	158,000	22,400	224,000
Common blue clay and other ball clay	do.	407	142	13,300
Decolorizing earths and fuller's earth	do.	205	48	2,590
Fire clay	do.	218	116	482
Other clay	do.	3,070	2,130	5,060
Diamond, industrial:				
Diamond stones, natural and miners'	thousand carats	2,050 ^r	12,500	1,820
Powder, dust and grit, natural and synthetic	do.	185,000	61,900	250,000
Diatomite	metric tons	528	456	1,710
Feldspar and nepheline syenite:				
Feldspar	do.	5,450	775	7,980
Nepheline syenite	do.	333,000	26,100	307,000
Fluorspar:				
Aluminum fluoride	do.	17,000	13,000	10,100
Cryolite	do.	7,950	5,810	8,120
Fluorspar	do.	494,000	62,000	567,000
Hydrofluoric acid, HF	do.	115,000	119,000	111,000
Garnet, industrial ^e		23	2,770	31
Gemstones		XX	12,900,000	XX
Graphite:				
Natural	metric tons	45,100	22,300	52,300
Electric furnace electrodes	do.	67,300	114,000	85,300
Gypsum:				
Boards		471	55,800	484
Crude		7,970	69,000	8,300
Plasters		11	4,740	6
Other		XX	66,200	XX
Iodine:				
Crude	metric tons	6,190	77,700 ^r	5,750
Potassium iodide	do.	633	7,930 ^r	862
Iron oxide pigments:				
Natural	do.	6,020	2,680	4,000
Synthetic	do.	126,000	93,600	136,000
Kyanite, andalusite, sillimanite	do.	4,620	952	4,480
Lime		157	19,700	202
Lithium chemicals:				
Carbonate	metric tons	9,830	15,600	11,600
Hydroxide	do.	432	1,290	111
Magnesium compounds:				
Compounds, chlorides, hydroxide, peroxide, sulfates	do.	68,300	17,600	112,000
Magnesite, crude and processed:				
Caustic-calcined magnesia	do.	148,000	24,400	150,000
Crude	do.	11,600	1,740	14,300
Dead-burned and fused magnesia	do.	394,000	70,100	379,000
Other magnesia	do.	17,600	13,600	21,000
Mica:				
Scrap and flake:				
Powder	metric tons	20,800	9,310	20,600
Waste	do.	14,100	2,860	14,300
Sheet:				
Unworked, excludes unworked sheet mica valued at less than \$1 per kilogram	do.	670	439	134
Worked	do.	913	9,750	1,000
Nitrogen, major compounds, gross weight		13,000	1,800,000	16,300
Peat moss	metric tons	763,000	149,000	767,000

See footnotes at end of table.

TABLE 8--Continued
 U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS¹

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral or product	2002		2003	
	Quantity	Value	Quantity	Value
Industrial minerals--Continued:				
Perlite, processed crude do.	224,000	8,160	245,000	9,310
Phosphate rock and phosphatic materials	2,950	218,000	2,680	176,000
Potash, chloride, sulfate, nitrate, sodium nitrate mixtures metric tons	7,630,000	615,000	7,810,000	646,000
Pumice:				
Crude or unmanufactured	359	22,800	366	32,800
Wholly or partially manufactured	1	3,200	1	3,460
Salt	8,160	129,000	12,900	196,000
Sand and gravel:				
Construction	4,310	53,900	4,410	57,700
Industrial	250	8,650	440	9,210
Silica, special stone products	NA	4,500	NA	6,300
Soda ash	9	2,000	5	1,510
Stone:				
Crushed, chips, calcium carbonate fines, excludes precipitated carbonates	14,300	124,000 ^r	15,300	143,000
Dimension	NA	1,190,000	NA	1,390,000
Strontium:				
Carbonate metric tons	42,000	23,200	38,200	18,200
Celestite do.	2,580	155	2,320	135
Metal do.	156	615	283	1,090
Nitrate do.	771	2,050	705	2,080
Oxide, hydroxide, peroxide do.	73	74	--	--
Sulfur:				
Elemental	2,560 ^e	26,800	2,870 ^e	70,600
Sulfuric acid, 100% H ₂ SO ₄ metric tons	1,060,000	46,400	908,000	39,200
Talc	232	52,700	237	53,500
Vermiculite ^e	56	10,400	37	6,200
Wollastonite ^e	2,750	413	3,500	525
Total	XX	19,700,000	XX	22,600,000
Grand total	XX	63,700,000 ^r	XX	67,700,000

^eEstimated. ^rRevised. NA Not available. XX Not applicable. -- Zero.

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

²Less than 1/2 unit.

TABLE 9
WORLD AND U.S. PRODUCTION OF SELECTED NONFUEL MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Mineral or product	World total					United States	
	1999	2000	2001	2002	2003	2003	Percentage of world
Metals:							
Aluminum ²	23,600	24,300 ^r	24,300	26,000 ^r	27,700	2,700	9.8
Antimony	metric tons	107,000	126,000 ^r	157,000 ^r	113,000 ^r	82,000	--
Arsenic trioxide ³	do.	41,800	38,800	35,900 ^r	35,000	35,100	--
Bauxite ^{3,4,5}		129,000	136,000	138,000 ^r	143,000 ^r	146,000	NA
Beryl ³	metric tons	6,210	5,660 ^r	3,610	3,150 ^r	3,300	63.6
Bismuth, refinery	do.	3,570 ^r	4,230 ^r	5,050	4,400 ^r	4,630	--
Cadmium	do.	20,000 ^r	20,800 ^r	18,800 ^r	16,800 ^r	16,900	4.0
Chromite ³		14,200 ^r	14,800 ^r	12,100 ^r	14,200 ^r	15,500	--
Cobalt, Co content:							
Mine	metric tons	32,700 ^r	38,300 ^r	47,800 ^r	50,300 ^r	48,400	--
Refinery	do.	33,100	35,000	38,800 ^r	40,800 ^r	40,200	--
Columbium (niobium)-tantalum conce	do.	59,900 ^r	61,100 ^r	76,600 ^r	81,600 ^r	80,600	--
Copper:							
Mine		12,800	13,200	13,700	13,600	13,600	1,120
Refinery		14,600	14,900 ^r	15,700	15,500	15,200	1,310
Gold	metric tons	2,570	2,590	2,600	2,580 ^r	2,590	277
Iron ore ³	million metric tons	1,020	1,080 ^r	1,050	1,100	1,160	46
Iron and steel:							
Direct-reduced iron ²		38,200	42,400 ^r	39,300	43,400 ^r	44,100	210
Pig iron ²		539,000	573,000	585,000 ^r	608,000 ^r	647,000	40,600
Raw steel		790,000 ^r	850,000 ^r	852,000 ^r	906,000 ^r	962,000	93,700
Lead:							
Mine		3,060 ^r	3,170 ^r	3,090 ^r	2,880 ^r	2,950	460
Refinery		6,280 ^r	6,660 ^r	6,580 ^r	6,630 ^r	6,820	1,390
Magnesium	metric tons	341,000	428,000	429,000 ^r	450,000 ^r	508,000	W
Manganese ore ³		17,800	19,600	20,800	22,200 ^r	23,200	--
Mercury ⁵	metric tons	1,320 ^r	1,360 ^r	1,500 ^r	1,510 ^r	1,530	NA
Molybdenum, Mo content	do.	129,000	134,000 ^r	133,000 ^r	121,000 ^r	125,000	33,500
Nickel, Ni content:							
Mine		1,170 ^r	1,290 ^r	1,350 ^r	1,350 ^r	1,400	--
Refinery		1,050	1,120 ^r	1,160 ^r	1,190 ^r	1,240	--
Platinum-group metals	kilograms	366,000 ^r	364,000 ^r	395,000 ^r	414,000 ^r	453,000	18,000
Selenium ^{2,5}	metric tons	1,410	1,460	1,460 ^r	1,460 ^r	1,430	W
Silver	do.	17,100 ^r	17,800 ^r	18,500 ^r	18,800 ^r	18,700	1,240
Tellurium ^{2,5}	kilograms	116,000	111,000	109,000	94,000 ^r	93,000	W
Tin:							
Mine	metric tons	246,000 ^r	277,000 ^r	281,000 ^r	241,000 ^r	209,000	--
Smelter ⁶	do.	267,000 ^r	288,000	300,000 ^r	280,000 ^r	279,000	5,420
Tungsten, W content	do.	37,700	44,000	45,300	58,800 ^r	62,100	--
Zinc:							
Mine		7,960 ^r	8,770 ^r	8,910 ^r	8,380 ^r	9,010	738
Smelter		8,550	9,090 ^r	9,340 ^r	9,650 ^r	9,880	303
Industrial minerals:							
Asbestos		1,940 ^r	2,110	2,040 ^r	2,050 ^r	2,160	--
Barite		16,160 ^r	6,490 ^r	6,590 ^r	6,020 ^r	6,520	468 ⁷
Boron minerals		4,470 ^r	4,550 ^r	4,730 ^r	4,550 ^r	4,800	1,150 ⁷
Bromine	thousand kilograms	547,000	542,000	523,000	540,000 ^r	548,000	216,000 ⁷
Celestite	metric tons	358,000 ^r	346,000 ^r	348,000 ^r	335,000 ^r	367,000	--
Cement, hydraulic	million metric tons	1,600	1,660 ^r	1,730	1,840 ^r	1,950	94 ⁸
Clays:							
Bentonite		10,500 ^r	10,300 ^r	10,400 ^r	10,300	10,200	3,940
Fuller's earth		3,560	3,920	4,000	3,890	4,750	3,600
Kaolin		41,400 ^r	42,800	42,900	41,100 ^r	41,000	7,680

See footnotes at end of table.

TABLE 9--Continued
WORLD AND U.S. PRODUCTION OF SELECTED NONFUEL MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Mineral or product		World total					United States	
		1999	2000	2001	2002	2003	2003	Percentage of world
Industrial minerals--Continued:								
Diamond, natural	thousand carats	118,000 ^r	117,000	121,000 ^r	134,000 ^r	150,000	--	--
Diatomite		2,010 ^r	2,020 ^r	2,010 ^r	1,950 ^r	1,950	620 ⁷	31.7
Feldspar		9,980	9,540 ^r	10,400 ^r	10,700 ^r	10,800	800	7.4
Fluorspar		4,300	4,440 ^r	4,580 ^r	4,430 ^r	4,740	--	--
Graphite, natural	metric tons	682,000 ^r	846,000 ^r	803,000 ^r	763,000 ^r	742,000	--	--
Gypsum		109,000	107,000 ^r	103,000 ^r	102,000 ^r	102,000	16,700	16.3
Iodine, crude	thousand kilograms	18,400	19,500	20,700	21,000 ^r	20,900	1,090	5.2
Lime		116,000	118,000	119,000 ^r	118,000 ^r	120,000	19,200 ^{7,8}	16.0
Magnesite, crude ⁵		9,800	12,700	11,100 ^r	12,700 ^r	11,900	W	NA
Mica, including scrap and flake ⁹	metric tons	278,000	329,000 ^r	369,000	270,000 ^r	275,000	78,600	28.6
Nitrogen, N content of ammonia		107,000	108,000	105,000	108,000 ^r	109,000	8,770 ¹⁰	8.0
Peat		27,000 ^r	24,700 ^r	25,700 ^r	27,400 ^r	26,100	634	2.4
Perlite		1,920 ^r	1,790	1,650 ^r	1,660 ^r	1,630	493 ⁷	30.3
Phosphate rock, gross weight		134,000	132,000	126,000	135,000	137,000	35,000	25.6
Potash, K ₂ O equivalent		27,300 ^r	27,000	26,300 ^r	26,400 ^r	28,500	1,100	3.9
Pumice		13,700 ^r	13,700 ^r	14,100 ^r	14,400 ^r	14,300	870 ⁷	6.1
Salt		207,000 ^r	209,000 ^r	214,000 ^r	208,000 ^r	210,000	43,700 ⁸	20.9
Sand and gravel, industrial, silica		111,000 ^r	111,000 ^r	111,000 ^r	110,000 ^r	110,000	27,500 ⁷	24.9
Soda ash, natural and manufactured		33,400 ^r	34,400 ^r	35,600 ^r	37,000 ^r	37,800	10,600 ¹¹	28.1
Sulfur, all forms		58,500 ^r	59,700 ^r	60,400 ^r	60,500 ^r	61,800	9,600	15.5
Talc and pyrophyllite ¹²		9,470	8,660 ^r	8,960 ^r	8,850 ^r	8,920	869	9.7
Titanium concentrates: ³								
Ilmenite and leucoxene		4,150	5,080 ^r	5,220 ^r	5,570 ^r	5,910	500 ¹³	8.5
Rutile ⁵		348	387	377	409 ^r	374	(14)	NA
Vermiculite	metric tons	541,000	513,000	299,000 ^r	377,000 ^r	347,000	NA	NA

^rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data; not included in "World" total. -- Zero.

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

²Primary.

³Gross weight.

⁴Individual 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.

⁵Does not include U.S. production.

⁶Includes tin content of alloys made directly from ore.

⁷Quantity sold or used by producers.

⁸Includes Puerto Rico.

⁹Excludes, if any, U.S. production of low-quality sericite and sheet mica.

¹⁰Synthetic anhydrous ammonia; excludes coke oven byproduct ammonia.

¹¹U.S. production is natural only.

¹²Data for the United States exclude proprietary pyrophyllite production.

¹³Includes rutile to avoid disclosing company proprietary data. Rounded to one significant digit.

¹⁴Included with ilmenite to avoid disclosing company proprietary data; not included in "Total."