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# 2015 Minerals Yearbook

## STATISTICAL SUMMARY [ADVANCE RELEASE]

U.S. Department of the Interior
U.S. Geological Survey

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# Statistical Summary

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**The world production table was prepared by Glenn J. Wallace, international data coordinator.**

This annual report summarizes data on nonfuel mineral production for the United States and the Commonwealth of Puerto Rico.

Although nonfuel mineral production[1] may be measured at any stage of extraction and processing, the stage of measurement used most commonly 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. Mine output as measured as sold or used by producers in a given year is primarily shown in the tables, because values can be assigned. Where sold or used is not available, actual mine output is used as the production measurement and value is estimated on the basis of the average price of the mineral commodity for that year.

For copper, gold, lead, palladium, platinum, silver, and zinc, the quantities listed 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 value of the mined material.

The total value of all nonfuel mineral production in the United States in 2015 decreased by 7.3% to $72.7 billion compared with $78.5 billion for 2014; metals decreased by 15.5% to $24.4 billion, and industrial minerals decreased by 2.5% to $48.3 billion (table 1).

In 2015, 12 mineral commodities had production values greater than $1 billion. They were, in descending order of value, crushed stone, portland cement, gold, copper, construction sand and gravel, industrial sand and gravel, iron ore, salt, lime, marketable phosphate rock, soda ash, and zinc. The production of these mineral commodities accounted for 88.5% of the U.S. total production value (table 1).

In 2015, the top 10 States, in descending order of value of nonfuel mineral production, were Nevada, Arizona, Texas, Minnesota, California, Alaska, Florida, Michigan, Missouri, and Wyoming. The mineral production of these States accounted for 54.4% of the U.S. total production value (table 3).

[1]The 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 2015 U.S. Geological Survey (USGS) mineral production data published in this chapter are as of June 2018. 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 is available at https://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). Minerals Yearbook chapters (for mineral commodities, States, and countries) and Mineral Industry Surveys are also available on the internet at https://minerals.usgs.gov/minerals.

TABLE 1

NONFUEL MINERAL PRODUCTION IN THE UNITED STATES[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value | Quantity | Value |
| Metals: | | | | | | | |
| Beryllium[4] | metric tons | 235 | W | 270 | W | 205 | W |
| Cobalt[e, 5] | do. | -- | -- | 120 | W | 760 | W |
| Copper[6] | | 1,250 | 9,360,000 | 1,360 | 9,510,000 | 1,380 | 7,810,000 |
| Gold[6] | kilograms | 230,000 | 10,400,000 | 210,000 | 8,570,000 | 214,000 | 8,000,000 |
| Iron ore[7] | | 52,800 | 4,610,000 | 56,100 | 4,730,000 | 46,100 | 3,750,000 |
| Lead[6] | metric tons | 331,000 | 837,000 | 367,000 [r] | 860,000 | 360,000 | 724,000 |
| Molybdenum concentrates[6] | do. | 61,000 | 1,320,000 [r] | 68,200 | 1,610,000 [r] | 47,400 | 700,000 |
| Nickel[8] | do. | -- | -- | 4,300 | W | 27,200 | W |
| Palladium[6] | kilograms | 12,600 | 295,000 | 12,400 | 324,000 | 12,500 | 280,000 |
| Platinum[6] | do. | 3,720 | 178,000 | 3,660 | 163,000 | 3,670 | 125,000 |
| Rare earths[e, 9] | metric tons | 5,500 | W | 5,400 | W | 5,900 | W |
| Rhenium[10] | kilograms | 7,110 | NA | 8,510 | NA | 7,900 | NA |
| Silver[6] | do. | 1,050,000 [r] | 801,000 [r] | 1,180,000 | 737,000 | 1,090,000 | 551,000 |
| Vanadium[6] | metric tons | 591 | 7,870 | -- | -- | -- | -- |
| Zinc[6] | do. | 758,000 | 1,600,000 | 803,000 | 1,900,000 | 797,000 | 1,680,000 |
| Zirconium mineral concentrates, zircon | do. | (11) | W | (11) | W | 80,000 [12] | W |
| Combined values of cadmium, magnesium metal, titanium mineral concentrates, tungsten, and values indicated by symbol W | | XX | 456,000 | XX | 496,000 | XX | 802,000 |
| Total | | XX | 29,900,000 [r] | XX | 28,900,000 [r] | XX | 24,400,000 |
| Industrial minerals, excluding fuels:[13] | | | | | | | |
| Barite | | 723 | 81,857 [e] | 663 | 88,602 [e] | 425 | 56,337 [e] |
| Cement:[7] | | | | | | | |
| Masonry | | 2,116 | 303,000 [e] | 2,220 [r] | 323,000 [r, e] | 2,311 | 350,000 [e] |
| Portland | | 74,689 | 6,980,000 [e] | 80,315 | 7,980,000 [e] | 82,094 | 8,640,000 [e] |
| Clay: | | | | | | | |
| Ball | | 1,000 | 42,800 | 1,030 | 45,200 | 1,030 | 47,500 |
| Bentonite | | 4,350 | 282,000 | 4,800 | 323,000 [r] | 4,040 | 298,000 |
| Common | | 11,000 | 128,000 | 11,400 [r] | 126,000 [r] | 12,200 | 164,000 |
| Fire | | 194 | 3,460 | 222 | 3,880 | 225 | 3,190 |
| Fuller's earth, montmorillonite | | 1,990 | 175,000 | 1,980 | 169,000 | 1,930 | 205,000 |
| Kaolin | | 6,140 | 896,000 | 6,250 | 901,000 | 5,990 | 776,000 |
| Diatomite | | 782 | 229,000 | 901 | 269,000 | 832 | 242,000 |
| Feldspar[e, 7] | metric tons | 550,000 [14] | 40,100 | 530,000 [14] | 34,800 | 520,000 [14] | 38,200 |
| Garnet, industrial[7, 15] | do. | 51,600 | 7,500 | 44,200 | 6,540 | 55,600 | 8,450 |
| Gemstones, natural[e, 7] | | NA | 9,570 | NA | 9,490 | NA | 8,540 |
| Gypsum, crude[7] | | 14,400 [r] | 128,000 [r] | 14,900 [r] | 132,000 [r] | 15,200 | 135,000 |
| Helium: | | | | | | | |
| Crude | million cubic meters | 28 | 85,100 | 27 | 93,100 | 25 | 85,900 |
| Grade-A | do. | 118 | 807,000 | 102 | 904,000 | 91 | 648,000 |
| Kyanite[16] | metric tons | 110,000 [r] | 38,000 [r, e] | 89,000 [r] | 29,000 [r, e] | 108,000 | 37,000 [e] |
| Lime[17] | | 19,200 | 2,320,000 | 19,500 | 2,390,000 [r] | 18,300 | 2,290,000 |
| Lithium carbonate | metric tons | 870 [18] | 11,200 | (11) | W | (11) | W |
| Mica, crude | do. | 48,100 | 5,940 | 48,200 [r] | 5,640 [r] | 32,600 | 4,640 |
| Peat | do. | 453,000 | 11,500 | 479,000 | 12,000 | 458,000 | 13,000 |
| Perlite, crude | do. | 419,000 | 23,100 | 462,000 [r] | 25,500 [r] | 459,000 | 27,900 |
| Phosphate rock, marketable[7] | | 31,200 | 2,850,000 | 25,300 | 1,990,000 | 27,400 | 1,980,000 |
| Potash[14] | | 2,000 | 630,000 | 2,000 | 680,000 | 1,500 | 550,000 |
| Pumice and pumicite | metric tons | 269,000 | 9,320 | 269,000 [r] | 10,400 [r] | 310,000 | 10,100 |
| Salt | | 43,100 | 1,980,000 | 46,000 | 2,180,000 [r] | 42,800 | 2,290,000 |

See footnotes at end of table.

TABLE 1—Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value | Quantity | Value |
| Industrial minerals, excluding fuels:[13]—Continued | | | | | | | |
| Sand and gravel: | | | | | | | |
| Construction | | 824,000 r | 6,400,000 r | 831,000 r | 6,670,000 r | 885,000 | 7,280,000 |
| Industrial | | 62,100 | 3,470,000 | 110,000 | 8,240,000 r | 103,000 | 4,850,000 |
| Silica stone, special | metric tons | 146 | 36 | 146 e | 36 e | 205 | 49 |
| Soda ash[7] | | 11,500 | 1,660,000 r | 11,700 | 1,730,000 r | 11,600 | 1,800,000 |
| Stone: | | | | | | | |
| Crushed[19] | | 1,200,000 r | 11,900,000 r | 1,250,000 | 12,800,000 r | 1,330,000 | 14,000,000 |
| Dimension | | 2,280 | 459,000 | 2,470 | 470,000 | 2,630 e | 461,000 e |
| Talc, crude[7] | metric tons | 542,000 | 20,800 | 608,000 r | 16,700 r, e | 687,000 | 19,400 e |
| Silica, tripoli[7] | do. | 110,000 | 17,600 | 93,100 | 19,500 | 70,500 | 19,400 |
| Vermiculite, concentrates[e] | | 100 [20] | W | 100 [20] | W | 100 [20] | W |
| Zeolites[7] | metric tons | 69,500 | W | 62,800 r | W | 75,100 | W |
| Combined values of andalusite, bauxite,[21] boron minerals, bromine, clay (fuller's earth, attapulgite), emery (2013–14), iodine (crude), iron oxide pigments (crude), magnesite, magnesium compounds, pyrophyllite (crude), staurolite, wollastonite, and values indicated by symbol W | | XX | 1,150,000 | XX | 899,000 r | XX | 958,000 |
| Total | | XX | 43,100,000 r | XX | 49,600,000 r | XX | 48,300,000 |
| Grand total | | XX | 73,100,000 r | XX | 78,500,000 r | XX | 72,700,000 |

[e]Estimated. [r]Revised. do. Ditto. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined values." XX Not applicable. -- Zero.

[1]Summary data from the commodity chapters published in the Minerals Yearbook as they were completed and released through June 2018.

[2]Production as measured by mine output, mine shipments, sales, or marketable production (including consumption by producers). Gross weight unless otherwise specified. Mine output as measured as sold or used by producers in a given year is primarily shown in the tables, because values can be assigned. Where sold or used data are not available, actual mine output is used as the production measurement and value is estimated on the basis of the average price of the mineral commodity for that year.

[3]Data are rounded to no more than three significant digits, unless otherwise specified; may not add to totals shown.

[4]Mine shipments of beryllium-containing ores. Calculated based on 4% metal content.

[5]Cobalt content of concentrates.

[6]Recoverable content of ores and concentrates. The values assigned to the quantities are based on the average selling price of refined metal, not the value of the mined material, except for molybdenum and vanadium where the value is based on the metal oxide content.

[7]Production, mine output.

[8]Recoverable content of nickel sulfide concentrates.

[9]Rare-earth-oxide (REO) basis.

[10]Based on 80% recovery of estimated rhenium contained in molybdenum disulfide concentrates.

[11]Withheld to avoid disclosing company proprietary data.

[12]Data rounded to no more than one significant digit to avoid disclosing company proprietary data.

[13]Sold or used unless otherwise specified.

[14]Data are rounded to no more than two significant digits.

[15]Crude garnet production. Refer to the Minerals Yearbook garnet chapter for refined garnet production.

[16]Production based on publicly available data; refer to the Minerals Yearbook kyanite chapter.

[17]Includes Puerto Rico.

[18]Contained lithium. Source: Rockwood Holdings, Inc., 2014, 2013 annual report: Rockwood Holdings, Inc., p. 16.

[19]Excludes abrasive stone.

[20]Rounded to the nearest 100,000 metric tons.

[21]Domestic bauxite production was used in nonmetallurgical products, such as abrasives, cement, chemicals, proppants, and refractories.

TABLE 2

NONFUEL MINERALS PRODUCED IN THE UNITED STATES, BY COMMODITY AND STATES IN 2015[1]

(Principal States based on quantity unless otherwise noted)

| Commodity[2] | Principal States[3] | Other States[3] |
|---|---|---|
| Andalusite | NC | |
| Barite | GA and NV | |
| Beryllium concentrates | UT | |
| Boron minerals | CA | |
| Bromine | AR | |
| Cement: | | |
| Masonry | AL, CA, FL, IN, TX | AR, AZ, CO, GA, KS, MD, ME, MI, MO, MT, NM, NY, OH, OK, PA, SC, TN, VA, WV. |
| Portland | AL, CA, FL, MO, TX | All other States, except AK, CT, DE, HI, ID, LA, MA, MN, MS, NC, ND, NH, NJ, RI, VT, WI. |
| Clay: | | |
| Ball | IN, KY, MS, TN, TX | |
| Bentonite | AL, CA, MT, UT, WY | AZ, MS, NV, OR, TX. |
| Common | AL, NC, OK, OR, TX | All other States, except AK, DE, FL, HI, ID, ME, MN, NH, NJ, NV, RI, VT, WI. |
| Fire | CO, MO, OH, TX | |
| Fuller's earth: | | |
| Attapulgite | FL and GA | |
| Montmorillonite | CA, GA, MO, MS, VA | IL, KS, TN, TX. |
| Kaolin | AL, AR, GA, NV, SC | CA, FL, TX. |
| Cobalt | MI | |
| Copper[4] | AZ, MT, NM, NV, UT | ID, MI, MO. |
| Diatomite | CA, NV, OR, WA | |
| Feldspar | CA, ID, NC, SD, VA | OK. |
| Garnet, industrial | ID, MT, NY | |
| Gemstones, natural[5] | AZ, CA, ID, MT, OR | All other States. |
| Gold[4] | AK, CA, CO, NV, UT | AZ, ID, MT, NM, SD, WA. |
| Gypsum, crude | AR, KS, NV, OK, TX | AZ, CA, CO, IA, IN, LA, MI, NM, SD, UT, WY. |
| Helium: | | |
| Crude | CO, KS, OK, TX, UT | |
| Grade-A | CO, KS, OK, UT, WY | |
| Iodine, crude | OK and TX | |
| Iron ore | MI and MN | |
| Iron oxide pigments, crude | AL and UT | |
| Kyanite | VA | |
| Lead[4] | AK, ID, MO, WA | |
| Lime | AL, KY, MO, OH, TX | All other States, except AK, CT, DE, HI, IL, KS, MD, ME, MS, NC, NH, NJ, NM, NY, RI, SC, VT. |
| Lithium carbonate | NV | |
| Magnesite | NV | |
| Magnesium compounds | CA, DE, MI, UT | |
| Magnesium metal | UT | |
| Mica, crude | GA, NC, SD, VA | |
| Molybdenum concentrates | AZ, CO, MT, NV, UT | |
| Nickel[4] | MI | |
| Palladium[4] | MT | |
| Peat | FL, IL, ME, MI, MN | IA, IN, NJ, NY, OH, PA, WA. |
| Perlite, crude | AZ, ID, NM, NV, OR | |
| Phosphate rock | FL, ID, NC, UT | |
| Platinum[4] | MT | |
| Potash | NM and UT | |
| Pumice and pumicite | CA, ID, KS, NM, OR | |
| Pyrophyllite, crude | NC | |
| Rare earths[6] | CA | |
| Salt | KS, LA, NY, OH, TX | AL, AZ, CA, MI, NM, NV, OK, TN, UT, VA, WV. |
| Sand and gravel: | | |
| Construction | AZ, CA, MI, MN, TX | All other States. |
| Industrial | IL, MN, MO, TX, WI | All other States, except AK, CT, DE, HI, ID, KS, MA, MD, ME, MT, NH, NM, UT, VT, WY. |
| Silica stone, special[7] | AR | |
| Silica, tripoli | AR, IL, MO | |

See footnotes at end of table.

TABLE 2—Continued

NONFUEL MINERALS PRODUCED IN THE UNITED STATES, BY COMMODITY AND STATES IN 2015[1]

(Principal States based on quantity unless otherwise noted)

| Commodity[2] | Principal States[3] | Other States[3] |
|---|---|---|
| Silver[4] | AK, AZ, ID, NV, UT | CA, CO, MO, MT, NM, SD. |
| Soda ash | CA and WY | |
| Staurolite | FL and VA | |
| Stone: | | |
| Crushed | FL, MO, OH, PA, TX | All other States. |
| Dimension | GA, IN, MA, TX, WI | All other States, except AK, DE, FL, HI, IA, KY, LA, MS, ND, NE, NJ, OR, RI, WV, WY. |
| Talc, crude | MT, TX, VT | |
| Titanium mineral concentrates, ilmenite | FL, GA, VA | |
| Tungsten | CA | |
| Vermiculite, crude | SC and VA | |
| Wollastonite | NY | |
| Zeolites | AZ, CA, ID, NM, TX | OR. |
| Zinc[4] | AK, ID, MO, TN, WA | |
| Zirconium mineral concentrates, zircon | FL, GA, VA | |

[1]Includes data available through June 2018.

[2]In addition to the commodities listed, bauxite was produced in Alabama, Arkansas, and Georgia; cadmium was recovered as a byproduct from zinc concentrates in Tennessee; and rhenium was recovered as a byproduct from molybdenite concentrates in Arizona, Montana, New Mexico, and Utah.

[3]Listed in alphabetical order by abbreviation.

[4]Recoverable content of ores and concentrates.

[5]Principal States according to value.

[6]Rare-earth-oxide (REO) basis.

[7]Grindstones, pulpstones, and sharpening stones; does not include mill liners and grinding pebbles.

TABLE 3

VALUE OF NONFUEL MINERAL PRODUCTION IN THE UNITED STATES AND PRINCIPAL NONFUEL MINERALS PRODUCED IN 2015[1, 2]

| State | Value (thousands) | Rank[3] | Percent of U.S. total | Principal commodities[4] |
|---|---|---|---|---|
| Alabama | $1,370,000 | 19 | 1.88 | Cement (masonry), cement (portland), lime, sand and gravel (construction), stone (crushed). |
| Alaska | 3,030,000 | 6 | 4.17 | Gold, lead, sand and gravel (construction), silver, zinc. |
| Arizona | 6,470,000 | 2 | 8.89 | Cement (portland), copper, molybdenum concentrates, sand and gravel (construction), stone (crushed). |
| Arkansas | 849,000 | 29 | 1.17 | Bromine, cement (portland), sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| California | 3,380,000 | 5 | 4.65 | Boron minerals, cement (portland), gold, sand and gravel (construction), stone (crushed). |
| Colorado | 1,280,000 | 20 | 1.76 | Cement (portland), gold, molybdenum concentrates, sand and gravel (construction), stone (crushed). |
| Connecticut[5] | 194,000 | 42 | 0.27 | Clay (common), sand and gravel (construction), stone (crushed), stone (dimension). |
| Delaware[5] | 19,800 | 50 | 0.03 | Magnesium compounds, sand and gravel (construction), stone (crushed). |
| Florida | 3,010,000 | 7 | 4.14 | Cement (masonry), cement (portland), phosphate rock, sand and gravel (construction), stone (crushed). |
| Georgia | 1,650,000 | 15 | 2.26 | Cement (portland), clay (fuller's earth), clay (kaolin), sand and gravel (construction), stone (crushed). |
| Hawaii | 98,400 | 48 | 0.14 | Gemstones (natural), sand and gravel (construction), stone (crushed). |
| Idaho | 537,000 | 35 | 0.74 | Phosphate rock, lead, sand and gravel (construction), silver, stone (crushed). |
| Illinois[5] | 1,740,000 | 14 | 2.39 | Cement (portland), sand and gravel (construction), sand and gravel (industrial), silica (tripoli), stone (crushed). |
| Indiana | 969,000 | 26 | 1.33 | Cement (portland), lime, sand and gravel (construction), stone (crushed), stone (dimension). |
| Iowa[5] | 617,000 | 28 | 0.85 | Cement (portland), lime, sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| Kansas[5] | 630,000 | 25 | 0.87 | Cement (portland), helium (Grade-A), salt, sand and gravel (construction), stone (crushed). |
| Kentucky[5] | 546,000 | 27 | 0.75 | Cement (portland), lime, sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| Louisiana[5] | 587,000 | 33 | 0.81 | Lime, salt, sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| Maine[5] | 96,000 | 44 | 0.13 | Cement (portland), peat, sand and gravel (construction), stone (crushed), stone (dimension). |
| Maryland[5] | 341,000 | 34 | 0.47 | Cement (masonry), cement (portland), sand and gravel (construction), stone (crushed), stone (dimension). |
| Massachusetts[5] | 294,000 | 40 | 0.40 | Clay (common), lime, sand and gravel (construction), stone (crushed), stone (dimension). |
| Michigan | 2,750,000 | 8 | 3.79 | Cement (portland), iron ore, nickel, salt, sand and gravel (construction). |
| Minnesota[5] | 3,590,000 | 4 | 4.93 | Iron ore, sand and gravel (construction), sand and gravel (industrial), stone (crushed), stone (dimension). |
| Mississippi[5] | 139,000 | 43 | 0.19 | Clay (ball), clay (fuller's earth), sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| Missouri | 2,600,000 | 9 | 3.58 | Cement (portland), lead, lime, sand and gravel (industrial), stone (crushed). |
| Montana | 1,010,000 | 24 | 1.39 | Copper, gold, palladium, platinum, sand and gravel (construction). |
| Nebraska[5] | 185,000 | 38 | 0.25 | Cement (portland), lime, sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| Nevada | 7,260,000 | 1 | 9.98 | Copper, diatomite, gold, lime, silver. |
| New Hampshire[5] | 104,000 | 47 | 0.14 | Sand and gravel (construction), stone (crushed), stone (dimension). |
| New Jersey | 278,000 | 41 | 0.38 | Peat, sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| New Mexico | 1,630,000 | 16 | 2.24 | Copper, potash, salt, sand and gravel (construction), stone (crushed). |
| New York[5] | 1,430,000 | 17 | 1.96 | Cement (portland), salt, sand and gravel (construction), stone (crushed), wollastonite. |
| North Carolina[5] | 936,000 | 22 | 1.29 | Clay (common), phosphate rock, sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| North Dakota[5] | 122,000 | 45 | 0.17 | Clay (common), lime, sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| Ohio[5] | 1,200,000 | 18 | 1.65 | Cement (portland), lime, salt, sand and gravel (construction), stone (crushed). |
| Oklahoma | 780,000 | 31 | 1.07 | Cement (portland), gypsum (crude), sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| Oregon | 394,000 | 36 | 0.54 | Cement (portland), diatomite, perlite (crude), sand and gravel (construction), stone (crushed). |
| Pennsylvania[5] | 1,850,000 | 12 | 2.54 | Cement (portland), lime, sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| Rhode Island[5] | 53,400 | 49 | 0.07 | Sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| South Carolina[5] | 721,000 | 32 | 0.99 | Cement (masonry), cement (portland), clay (kaolin), sand and gravel (construction), stone (crushed). |
| South Dakota | 328,000 | 39 | 0.45 | Cement (portland), gold, lime, sand and gravel (construction), stone (crushed). |
| Tennessee | 1,050,000 | 23 | 1.44 | Cement (portland), sand and gravel (construction), sand and gravel (industrial), stone (crushed), zinc. |
| Texas | 4,950,000 | 3 | 6.81 | Cement (portland), salt, sand and gravel (construction), sand and gravel (industrial), stone (crushed). |
| Utah | 2,120,000 | 11 | 2.92 | Cement (portland), copper, magnesium metal, potash, sand and gravel (construction). |
| Vermont[5] | 133,000 | 46 | 0.18 | Sand and gravel (construction), stone (crushed), stone (dimension), talc (crude). |
| Virginia | 1,210,000 | 21 | 1.66 | Cement (portland), clay (fuller's earth), lime, sand and gravel (construction), stone (crushed). |

See footnotes at end of table.

TABLE 3—Continued

VALUE OF NONFUEL MINERAL PRODUCTION IN THE UNITED STATES AND PRINCIPAL NONFUEL MINERALS PRODUCED IN 2015[1, 2]

| State | Value (thousands) | Rank[3] | Percent of U.S. total | Principal commodities[4] |
|---|---|---|---|---|
| Washington | 801,000 | 30 | 1.10 | Cement (portland), gold, sand and gravel (construction), stone (crushed), zinc. |
| West Virginia[5] | 208,000 | 37 | 0.29 | Cement (masonry), cement (portland), lime, sand and gravel (industrial), stone (crushed). |
| Wisconsin[5] | 1,770,000 | 13 | 2.43 | Lime, sand and gravel (construction), sand and gravel (industrial), stone (crushed), stone (dimension). |
| Wyoming | 2,480,000 | 10 | 3.41 | Cement (portland), clay (bentonite), helium (Grade-A), sand and gravel (construction), soda ash. |
| Undistributed | 2,950,000 | XX | 4.05 | XX |
| Total | 72,700,000 | XX | 100.00 | XX |

XX Not applicable.

[1]Includes data available through June 2018.

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

[3]Rank based on total, unadjusted, State values.

[4]Listed in alphabetical order.

[5]Partial total; excludes values that must be withheld to avoid disclosing company proprietary data, which are included with “Undistributed.”

TABLE 4

VALUE OF NONFUEL MINERAL PRODUCTION PER CAPITA AND PER SQUARE KILOMETER IN 2015, BY STATE[1]

| State | Land area[2] (square kilometers) | Population[2] (thousands) | Value of nonfuel mineral production[3] | | | | |
|---|---|---|---|---|---|---|---|
| | | | Total (thousands) | Per capita | | Per square kilometer | |
| | | | | Dollars | Rank[4] | Dollars | Rank[4] |
| Alabama | 131,171 | 4,859 | $1,370,000 | 282 | 15 | 10,400 | 20 |
| Alaska | 1,477,953 | 738 | 3,030,000 | 4,110 | 2 | 2,050 | 44 |
| Arizona | 294,207 | 6,828 | 6,470,000 | 947 | 5 | 22,000 | 4 |
| Arkansas | 134,771 | 2,978 | 849,000 | 285 | 14 | 6,300 | 30 |
| California | 403,466 | 39,145 | 3,380,000 | 86 | 41 | 8,370 | 28 |
| Colorado | 268,431 | 5,457 | 1,280,000 | 235 | 18 | 4,780 | 37 |
| Connecticut | 12,542 | 3,591 | 194,000 [5] | 54 | 47 | 15,500 | 9 |
| Delaware | 5,047 | 946 | 19,800 [5] | 21 | 48 | 3,920 | 26 |
| Florida | 138,887 | 20,271 | 3,010,000 | 149 | 29 | 21,700 | 5 |
| Georgia | 148,959 | 10,215 | 1,650,000 | 161 | 26 | 11,100 | 18 |
| Hawaii | 16,635 | 1,432 | 98,400 | 69 | 44 | 5,920 | 33 |
| Idaho | 214,045 | 1,655 | 537,000 | 325 | 12 | 2,510 | 43 |
| Illinois | 143,793 | 12,860 | 1,740,000 [5] | 135 | 34 | 12,100 | 16 |
| Indiana | 92,789 | 6,620 | 969,000 | 146 | 31 | 10,400 | 19 |
| Iowa | 144,669 | 3,124 | 617,000 [5] | 198 | 17 | 4,270 | 34 |
| Kansas | 211,754 | 2,912 | 630,000 [5] | 217 | 11 | 2,980 | 40 |
| Kentucky | 102,269 | 4,425 | 546,000 [5] | 123 | 22 | 5,340 | 27 |
| Louisiana | 111,898 | 4,671 | 587,000 [5] | 126 | 32 | 5,250 | 32 |
| Maine | 79,883 | 1,329 | 96,000 [5] | 72 | 38 | 1,200 | 46 |
| Maryland | 25,142 | 6,006 | 341,000 [5] | 57 | 39 | 13,600 | 2 |
| Massachusetts | 20,202 | 6,794 | 294,000 [5] | 43 | 49 | 14,600 | 10 |
| Michigan | 146,435 | 9,923 | 2,750,000 | 278 | 16 | 18,800 | 6 |
| Minnesota | 206,232 | 5,490 | 3,590,000 [5] | 653 | 8 | 17,400 | 7 |
| Mississippi | 121,531 | 2,992 | 139,000 [5] | 46 | 45 | 1,140 | 49 |
| Missouri | 178,040 | 6,084 | 2,600,000 | 428 | 9 | 14,600 | 12 |
| Montana | 376,962 | 1,033 | 1,010,000 | 977 | 4 | 2,680 | 42 |
| Nebraska | 198,974 | 1,896 | 185,000 [5] | 97 | 21 | 929 | 45 |
| Nevada | 284,332 | 2,891 | 7,260,000 | 2,510 | 3 | 25,500 | 1 |
| New Hampshire | 23,187 | 1,331 | 104,000 [5] | 78 | 43 | 4,480 | 38 |
| New Jersey | 19,047 | 8,958 | 278,000 | 31 | 50 | 14,600 | 13 |
| New Mexico | 314,161 | 2,085 | 1,630,000 | 780 | 6 | 5,180 | 36 |
| New York | 122,057 | 19,796 | 1,430,000 [5] | 72 | 42 | 11,700 | 15 |
| North Carolina | 125,920 | 10,043 | 936,000 [5] | 93 | 36 | 7,440 | 24 |
| North Dakota | 178,711 | 757 | 122,000 [5] | 161 | 24 | 683 | 50 |
| Ohio | 105,829 | 11,613 | 1,200,000 [5] | 103 | 35 | 11,300 | 11 |
| Oklahoma | 177,660 | 3,911 | 780,000 | 199 | 23 | 4,390 | 41 |
| Oregon | 248,608 | 4,029 | 394,000 | 98 | 40 | 1,590 | 48 |
| Pennsylvania | 115,883 | 12,803 | 1,850,000 [5] | 144 | 30 | 16,000 | 8 |
| Rhode Island | 2,678 | 1,056 | 53,400 [5] | 51 | 46 | 19,900 | 3 |
| South Carolina | 77,857 | 4,896 | 721,000 [5] | 147 | 28 | 9,260 | 25 |
| South Dakota | 196,350 | 858 | 328,000 | 382 | 10 | 1,670 | 47 |
| Tennessee | 106,798 | 6,600 | 1,050,000 | 158 | 27 | 9,790 | 23 |
| Texas | 676,587 | 27,469 | 4,950,000 | 180 | 25 | 7,320 | 29 |
| Utah | 212,818 | 2,996 | 2,120,000 | 709 | 7 | 9,980 | 21 |
| Vermont | 23,871 | 626 | 133,000 [5] | 212 | 19 | 5,570 | 35 |
| Virginia | 102,279 | 8,383 | 1,210,000 | 144 | 33 | 11,800 | 17 |
| Washington | 172,119 | 7,170 | 801,000 | 112 | 37 | 4,660 | 39 |
| West Virginia | 62,259 | 1,844 | 208,000 [5] | 113 | 20 | 3,330 | 31 |
| Wisconsin | 140,268 | 5,771 | 1,770,000 [5] | 307 | 13 | 12,600 | 14 |
| Wyoming | 251,470 | 586 | 2,480,000 | 4,230 | 1 | 9,860 | 22 |
| Undistributed | XX | XX | 2,950,000 | XX | XX | XX | XX |
| Total or average | 9,147,436 [6] | 320,746 [6] | 72,700,000 | 227 | XX | 7,950 | XX |

See footnotes at end of table.

TABLE 4—Continued

VALUE OF NONFUEL MINERAL PRODUCTION PER CAPITA AND PER SQUARE KILOMETER IN 2015, BY STATE[1]

XX Not applicable.

[1]Includes data available through June 2018.

[2]Source: U.S. Census Bureau State and national total values.

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

[4]Rank based on total, unadjusted, State values.

[5]Partial total; excludes values that must be withheld to avoid disclosing company proprietary data, which are included with "Undistributed."

[6]Excludes Washington, DC (which has no mineral production), with an area of 158 square kilometers and a population of 672,228.

TABLE 5

NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value | Quantity | Value |
| Alabama: | | | | | | | |
| Clay, common | | 1,190 | 8,630 | 1,170 r | 5,340 r | 1,090 | 4,120 |
| Gemstones, natural[e] | | NA | 7 | NA | 7 | NA | 92 |
| Lime | | 2,270 | 289,000 | 2,280 | 294,000 | 2,340 | 302,000 |
| Sand and gravel: | | | | | | | |
| Construction | | 9,210 | 61,700 | 8,850 r | 61,000 r | 10,700 | 74,500 |
| Industrial | | 334 | 14,900 | 1,150 r | 33,800 r | 972 | 23,700 |
| Stone, crushed | | 36,400 | 362,000 r | 37,200 r | 396,000 r | 38,500 | 431,000 |
| Combined values of bauxite, cement, clay (bentonite and kaolin), iron oxide pigments (crude), salt, stone (dimension) | | XX | 365,000 | XX | 446,000 | XX | 534,000 |
| Total | | XX | 1,100,000 | XX | 1,240,000 | XX | 1,370,000 |
| Alaska: | | | | | | | |
| Gemstones, natural[e] | | NA | 70 | NA | 60 | NA | 73 |
| Gold[4] | kilograms | 32,200 | 1,470,000 | 31,400 | 1,280,000 | 28,000 | 1,050,000 |
| Lead[4] | metric tons | 143,000 | 362,000 | 166,000 | 388,000 | 161,000 | 324,000 |
| Sand and gravel, construction | | 10,100 r | 67,400 r | 8,360 r | 63,200 r | 8,900 | 77,500 |
| Silver[4] | kilograms | 485,000 r | 371,000 r | 481,000 | 299,000 | 490,000 | 248,000 |
| Stone, crushed | | 952 | 12,000 | 959 r | 12,400 r | 1,040 | 12,400 |
| Zinc[4] | metric tons | 609,000 | 1,280,000 | 660,000 r | 1,560,000 | 629,000 | 1,330,000 |
| Total | | XX | 3,560,000 r | XX | 3,600,000 | XX | 3,030,000 |
| Arizona: | | | | | | | |
| Copper[4] | | 795 | 5,960,000 | 893 | 6,260,000 | 961 | 5,430,000 |
| Gemstones, natural[e] | | NA | 2,360 | NA | 2,370 | NA | 1,420 |
| Sand and gravel, construction | | 35,300 r | 308,000 r | 36,200 r | 313,000 r | 38,700 | 345,000 |
| Silver | kilograms | 88,800 | 62,600 | 91,400 | 56,900 | 99,200 | 50,100 |
| Stone: | | | | | | | |
| Crushed | | 7,990 r | 70,600 r | 8,520 r | 67,900 r | 9,360 | 74,800 |
| Dimension | | 57 | 6,420 | 55 | 6,080 | 62 | 6,660 |
| Combined values of cement, clay [bentonite (2015) and common (2013–15)], gold, gypsum (crude), lime, molybdenum concentrates, perlite (crude), rhenium, salt, sand and gravel (industrial), zeolites | | XX | 648,000 r | XX | 738,000 r | XX | 559,000 |
| Total | | XX | 7,060,000 r | XX | 7,440,000 r | XX | 6,470,000 |
| Arkansas: | | | | | | | |
| Gemstones, natural[e] | | NA | 413 | NA | 429 | NA | 441 |
| Sand and gravel: | | | | | | | |
| Construction | | 8,030 r | 68,500 r | 8,080 r | 69,800 r | 7,510 | 66,000 |
| Industrial | | 2,130 | 133,000 | 3,180 | 248,000 | 1,990 | 146,000 |
| Silica stone, special | metric tons | 146 | 36 | 146 e | 36 e | 205 | 49 |
| Stone: | | | | | | | |
| Crushed | | 25,100 | 197,000 | 26,000 r | 212,000 r | 26,700 | 226,000 |
| Dimension | | 10 | 1,320 | 10 | 1,290 | 10 | 1,290 |
| Combined values of bauxite, bromine, cement, clay (common and kaolin), gypsum (crude), lime, silica (tripoli) | | XX | 302,000 | XX | 384,000 r | XX | 409,000 |
| Total | | XX | 702,000 | XX | 915,000 | XX | 849,000 |
| California: | | | | | | | |
| Cement: | | | | | | | |
| Masonry | | 178 | 19,600 e | 186 | 20,100 e | 188 | 20,800 e |
| Portland | | 9,260 | 714,000 e | 9,810 | 829,000 e | 9,770 | 887,000 e |
| Gemstones, natural[e] | | NA | 1,220 | NA | 1,210 | NA | 882 |
| Gypsum, crude | | 892 | 15,400 | 689 | 6,030 | 690 | 5,930 |
| Rare earths[e, 5] | metric tons | 5,500 | W | 5,400 | W | 5,900 | W |
| Sand and gravel: | | | | | | | |
| Construction | | 86,600 r | 964,000 r | 86,000 r | 1,000,000 r | 97,000 | 1,090,000 |
| Industrial | | 863 | 42,500 | 1,520 | 52,500 | 1,860 | 66,100 |

See footnotes at end of table.

TABLE 5—Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value | Quantity | Value |
| California:—Continued | | | | | | | |
| Stone: | | | | | | | |
| Crushed | | 34,500 r | 321,000 r | 37,500 r | 321,000 r | 38,400 | 331,000 |
| Dimension | | 24 | 9,210 | 23 | 9,170 | 21 | 7,780 |
| Combined values of boron minerals, clay (bentonite, common, fuller's earth, kaolin), diatomite, feldspar, gold, lime, magnesium compounds, perlite [crude (2013)], pumice and pumicite, salt, silver, soda ash, tungsten, zeolites, and values indicated by symbol W | | XX | 1,290,000 r | XX | 916,000 r | XX | 971,000 |
| Total | | XX | 3,370,000 r | XX | 3,160,000 r | XX | 3,380,000 |
| Colorado: | | | | | | | |
| Clay, common | | 187 | 4,820 | (6) | W | (6) | W |
| Gemstones, natural[e] | | NA | 447 | NA | 451 | NA | 326 |
| Sand and gravel, construction | | 31,200 | 222,000 | 34,200 r | 242,000 r | 33,800 | 260,000 |
| Stone: | | | | | | | |
| Crushed | | 10,400 | 81,200 | 12,700 r | 108,000 r | 12,900 | 114,000 |
| Dimension | | 18 | 7,270 | 17 | 6,230 | 20 | 9,570 |
| Combined values of cement, clay [bentonite (2013–14) and fire (2013–15)], gold, gypsum (crude), helium [crude (2015) and Grade-A (2013–15)], lime, molybdenum concentrates, sand and gravel (industrial), silver, and values indicated by symbol W | | XX | 1,090,000 r | XX | 1,230,000 r | XX | 899,000 |
| Total | | XX | 1,400,000 r | XX | 1,590,000 r | XX | 1,280,000 |
| Connecticut: | | | | | | | |
| Clay, common | | (6) | (7) | (6) | (7) | (6) | (7) |
| Gemstones, natural[e] | | NA | 7 | NA | 7 | NA | 8 |
| Sand and gravel, construction | | 5,100 | 47,200 | 5,360 | 55,300 r | 5,120 | 49,900 |
| Stone: | | | | | | | |
| Crushed | | 8,740 | 129,000 | 9,220 r | 144,000 r | 9,360 | 142,000 |
| Dimension | | (6) | (7) | (6) | (7) | 12 | 2,360 |
| Total | | XX | 176,000 | XX | 200,000 r | XX | 194,000 |
| Delaware: | | | | | | | |
| Gemstones, natural[e] | | NA | 1 | NA | 1 | NA | 2 |
| Magnesium compounds | | (6) | (7) | (6) | (7) | (6) | (7) |
| Sand and gravel, construction | | 1,600 r | 12,600 r | 1,500 r | 15,100 r | 2,370 | 19,800 |
| Stone, crushed | | (6) | (7) | (6) | (7) | (6) | (7) |
| Total | | XX | 12,600 r | XX | 15,100 r | XX | 19,800 |
| Florida: | | | | | | | |
| Cement: | | | | | | | |
| Masonry | | 342 | 42,500 e | 365 | 47,700 e | 400 | 51,900 e |
| Portland | | 4,680 | 402,000 e | 4,990 | 453,000 e | 5,500 | 551,000 e |
| Gemstones, natural[e] | | NA | 1 | NA | 2 | NA | 2 |
| Peat | metric tons | 338,000 | 6,800 | 370,000 | 7,340 | 317,000 | 7,110 |
| Sand and gravel: | | | | | | | |
| Construction | | 14,700 | 133,000 | 16,000 | 152,000 | 17,200 | 176,000 |
| Industrial | | 200 | 10,300 | 219 | 12,100 | 485 | 32,100 |
| Stone, crushed | | 53,800 r | 631,000 r | 57,700 r | 681,000 | 61,600 | 701,000 |
| Combined values of clay (fuller's earth and kaolin), lime, phosphate rock, staurolite, titanium mineral concentrates (ilmenite), zirconium mineral concentrates (zircon) | | XX | 2,370,000 | XX | 1,540,000 | XX | 1,490,000 |
| Total | | XX | 3,590,000 | XX | 2,890,000 | XX | 3,010,000 |
| Georgia: | | | | | | | |
| Barite | | 7 | 1,350 e | 14 | 2,800 e | 15 | 2,970 e |
| Clay, kaolin | | 5,580 | 852,000 | 5,660 | 853,000 | 5,390 | 727,000 |
| Gemstones, natural[e] | | NA | 103 | NA | 103 | NA | 24 |

See footnotes at end of table.

TABLE 5—Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Georgia:—Continued | | | | | | |
| Sand and gravel: | | | | | | |
| Construction | 5,090 | 33,000 | 5,490 | 37,000 r | 5,810 | 41,400 |
| Industrial | 596 | 15,800 | 520 | 18,000 | (6) | W |
| Stone: | | | | | | |
| Crushed | 40,400 | 494,000 | 44,200 r | 553,000 r | 49,300 | 652,000 |
| Dimension | 145 | 17,200 | 152 | 15,500 | 140 | 13,000 |
| Combined values of bauxite, cement, clay (common and fuller's earth), feldspar (2013–14), lime, mica (crude), titanium mineral concentrates [ilmenite (2015)], zirconium mineral concentrates [zircon (2015)], and value indicated by symbol W | XX | 136,000 r | XX | 149,000 r | XX | 209,000 |
| Total | XX | 1,550,000 | XX | 1,630,000 | XX | 1,650,000 |
| Hawaii: | | | | | | |
| Gemstones, natural e | NA | 139 | NA | 136 | NA | 103 |
| Sand and gravel, construction | 662 r | 10,100 | 492 | 7,830 | 459 | 10,300 |
| Stone, crushed | 5,420 | 92,300 | 4,500 r | 88,200 r | 4,460 | 88,000 |
| Total | XX | 103,000 r | XX | 96,200 r | XX | 98,400 |
| Idaho: | | | | | | |
| Gemstones, natural e | NA | 371 | NA | 399 | NA | 1,630 |
| Sand and gravel, construction | 11,500 r | 69,300 r | 13,800 r | 82,300 r | 14,200 | 82,600 |
| Stone: | | | | | | |
| Crushed | 3,820 | 24,000 | 4,380 | 28,400 r | 5,010 | 33,800 |
| Dimension | 33 r | 5,840 | 64 | 8,640 | 45 | 7,050 |
| Combined values of copper, feldspar, garnet (industrial), gold (2015), lead, lime, molybdenum concentrates (2013–14), perlite (crude), phosphate rock, pumice and pumicite, silver, zeolites, zinc | XX | 614,000 r | XX | 585,000 r | XX | 412,000 |
| Total | XX | 713,000 r | XX | 705,000 r | XX | 537,000 |
| Illinois: | | | | | | |
| Cement, portland | 1,100 | 106,000 e | 1,220 | 126,000 e | 1,410 | 153,000 e |
| Gemstones, natural e | NA | 10 | NA | 10 | NA | 11 |
| Sand and gravel: | | | | | | |
| Construction | 18,300 r | 127,000 r | 18,300 r | 126,000 r | 21,500 | 148,000 |
| Industrial | 9,850 | 501,000 | 13,500 | 1,290,000 | 14,100 | 867,000 |
| Stone, crushed | 45,800 | 472,000 | 52,300 r | 521,000 r | 54,300 | 569,000 |
| Combined values of cement (masonry), clay (common and fuller's earth), peat, silica (tripoli), stone (dimension) | XX | (7) | XX | (7) | XX | (7) |
| Total | XX | 1,210,000 r | XX | 2,060,000 r | XX | 1,740,000 |
| Indiana: | | | | | | |
| Cement, portland | 2,280 | 191,000 e | 2,400 | 208,000 e | 2,560 | 254,000 e |
| Clay, common | 294 | 6,490 | (6) | W | (6) | W |
| Gemstones, natural e | NA | 4 | NA | 4 | NA | 5 |
| Sand and gravel, construction | 18,300 | 133,000 r | 17,600 | 132,000 | 17,300 | 134,000 |
| Stone: | | | | | | |
| Crushed | 41,000 | 304,000 | 44,400 r | 342,000 r | 49,500 | 381,000 |
| Dimension | 150 | 26,200 | 200 | 34,400 | 211 | 39,700 |
| Combined values of cement (masonry), clay (ball), gypsum (crude), lime, peat, sand and gravel (industrial), and values indicated by symbol W | XX | 156,000 r | XX | 170,000 r | XX | 161,000 |
| Total | XX | 816,000 r | XX | 886,000 r | XX | 969,000 |
| Iowa: | | | | | | |
| Gemstones, natural e | NA | 3 | NA | 3 | NA | 3 |
| Sand and gravel: | | | | | | |
| Construction | 13,500 r | 84,900 r | 13,500 r | 92,700 r | 14,800 | 118,000 |
| Industrial | (6) | W | (6) | W | 1,790 | 133,000 |
| Stone, crushed | 32,100 r | 300,000 r | 33,300 r | 319,000 r | 35,800 | 366,000 |

See footnotes at end of table.

TABLE 5—Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Iowa:—Continued | | | | | | |
| Combined values of cement, clay (common), gypsum (crude), lime, peat, and values indicated by symbol W | XX | 326,000 | XX | (7) | XX | (7) |
| Total | XX | 711,000 r | XX | 412,000 r | XX | 617,000 |
| Kansas: | | | | | | |
| Cement, portland | 1,780 | 178,000 e | 2,010 | 202,000 e | 2,140 | 207,000 e |
| Clay, common | 309 | 1,800 | (6) | (7) | (6) | (7) |
| Gemstones, natural[e] | NA | 1 | NA | 1 | NA | 2 |
| Salt | 2,650 | 174,000 | 2,930 | 194,000 | 2,830 | 207,000 |
| Sand and gravel, construction | 8,750 r | 49,000 r | 8,580 r | 48,600 r | 9,320 | 57,000 |
| Stone: | | | | | | |
| Crushed | 15,400 | 131,000 | 16,100 r | 137,000 r | 17,300 | 159,000 |
| Dimension | 43 | 5,610 | 14 | 1,330 | 11 | 1,090 |
| Combined values of cement (masonry), clay (fuller's earth), gypsum (crude), helium (crude and Grade-A), pumice and pumicite | XX | (7) | XX | (7) | XX | (7) |
| Total | XX | 540,000 | XX | 583,000 r | XX | 630,000 |
| Kentucky: | | | | | | |
| Gemstones, natural[e] | NA | 11 | NA | 11 | NA | 16 |
| Sand and gravel, construction | 8,350 | 43,700 | 8,510 | 41,500 | 9,040 | 45,500 |
| Stone, crushed | 48,700 | 453,000 | 51,000 r | 460,000 r | 54,500 | 500,000 |
| Combined values of cement, clay (ball and common), lime, sand and gravel (industrial) | XX | (7) | XX | (7) | XX | (7) |
| Total | XX | 497,000 | XX | 502,000 r | XX | 546,000 |
| Louisiana: | | | | | | |
| Gemstones, natural[e] | NA | 7 | NA | 7 | NA | 8 |
| Salt | 14,300 | 318,000 | 14,800 | 344,000 | 12,700 | 325,000 |
| Sand and gravel: | | | | | | |
| Construction | 18,400 r | 188,000 r | 17,800 r | 220,000 r | 16,400 | 185,000 |
| Industrial | 709 | 36,200 | 2,120 r | 147,000 | 2,280 | 76,700 |
| Combined values of clay (common), gypsum (crude), lime, stone (crushed) | XX | (7) | XX | (7) | XX | (7) |
| Total | XX | 542,000 r | XX | 711,000 r | XX | 587,000 |
| Maine: | | | | | | |
| Gemstones, natural[e] | NA | 364 | NA | 370 | NA | 376 |
| Sand and gravel, construction | 7,550 r | 52,400 r | 7,250 r | 54,100 r | 7,760 | 60,700 |
| Stone: | | | | | | |
| Crushed | 3,690 | 30,800 | 3,830 | 31,500 | 4,220 | 33,100 |
| Dimension | 5 | 2,770 | 5 | 2,820 | 3 | 1,840 |
| Combined values of cement, clay [common (2014–15)], peat | XX | (7) | XX | (7) | XX | (7) |
| Total | XX | 86,300 r | XX | 88,700 r | XX | 96,000 |
| Maryland: | | | | | | |
| Gemstones, natural[e] | NA | 1 | NA | 1 | NA | 2 |
| Sand and gravel, construction | 6,540 | 76,900 | 7,110 | 91,600 r | 7,570 | 95,000 |
| Stone: | | | | | | |
| Crushed | 20,100 r | 189,000 r | 21,700 r | 222,000 r | 22,800 | 245,000 |
| Dimension | 2 | 687 | 3 | 723 | 4 | 728 |
| Combined values of cement and clay (common) | XX | (7) | XX | (7) | XX | (7) |
| Total | XX | 267,000 r | XX | 315,000 r | XX | 341,000 |
| Massachusetts: | | | | | | |
| Clay, common | (6) | (7) | (6) | (7) | (6) | (7) |
| Gemstones, natural[e] | NA | 1 | NA | 1 | NA | 2 |
| Lime | (6) | (7) | (6) | (7) | (6) | (7) |
| Sand and gravel, construction | 11,800 r | 107,000 r | 11,000 r | 88,200 r | 10,100 | 92,500 |

See footnotes at end of table.

TABLE 5—Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value | Quantity | Value |
| Massachusetts:—Continued | | | | | | | |
| Stone: | | | | | | | |
| Crushed | | 10,100 | 130,000 | 10,600 r | 146,000 r | 11,800 | 160,000 |
| Dimension | | 148 | 43,500 | 165 | 43,100 | 160 | 41,900 |
| Total | | XX | 281,000 r | XX | 278,000 r | XX | 294,000 |
| Michigan: | | | | | | | |
| Cement: | | | | | | | |
| Masonry | | 61 | 8,500 e | 43 | 6,100 e | 92 | 14,000 e |
| Portland | | 3,860 | 370,000 e | 3,950 | 399,000 e | 4,190 | 470,000 e |
| Cobalt[e, 8] | metric tons | -- | -- | 120 | W | 760 | W |
| Copper[9] | do. | -- | -- | 3,910 | W | 24,300 | W |
| Gemstones, natural[e] | | NA | 2 | NA | 2 | NA | 15 |
| Gypsum, crude | | 233 | 1,930 | 233 | 2,050 | (6) | W |
| Iron ore[10] | | 10,700 | 1,390,000 | 12,100 | 1,240,000 | 10,800 | 852,000 |
| Lime | | 524 | 64,700 | 526 | 65,400 | 474 | 60,200 |
| Nickel[9, 11] | metric tons | -- | -- | 4,300 | W | 27,200 | W |
| Sand and gravel: | | | | | | | |
| Construction | | 32,500 r | 171,000 r | 36,400 r | 204,000 r | 39,600 | 243,000 |
| Industrial | | 1,230 | 49,000 | 1,590 | 112,000 | 3,370 | 77,300 |
| Stone, crushed | | 26,700 r | 189,000 r | 26,300 r | 194,000 r | 27,700 | 201,000 |
| Combined values of clay (common), magnesium compounds, peat, potash (2013), salt, stone (dimension), and values indicated by symbol W | | XX | 324,000 | XX | 427,000 | XX | 836,000 |
| Total | | XX | 2,560,000 | XX | 2,650,000 | XX | 2,750,000 |
| Minnesota: | | | | | | | |
| Clay, common | | (6) | (7) | (6) | (7) | -- | -- |
| Gemstones, natural[e] | | NA | 7 | NA | 7 | NA | 8 |
| Iron ore | | 40,800 | 3,120,000 | 43,000 | 3,410,000 | 35,400 | 2,890,000 |
| Lime | | (6) | (7) | (6) | (7) | (6) | (7) |
| Peat | metric tons | 55,200 r | 2,980 | 47,700 r | 2,740 | 58,300 | 2,860 |
| Sand and gravel: | | | | | | | |
| Construction | | 41,500 r | 194,000 r | 42,000 r | 189,000 r | 48,400 | 237,000 |
| Industrial | | 4,140 | 271,000 | 7,220 | 574,000 | 5,170 | 335,000 |
| Stone: | | | | | | | |
| Crushed | | 8,090 r | 93,100 r | 8,920 r | 105,000 r | 7,610 | 95,700 |
| Dimension | | 59 | 24,300 | 51 | 21,000 | 51 | 20,800 |
| Total | | XX | 3,710,000 | XX | 4,300,000 | XX | 3,590,000 |
| Mississippi: | | | | | | | |
| Gemstones, natural[e] | | NA | 1 | NA | 1 | NA | 2 |
| Sand and gravel: | | | | | | | |
| Construction | | 10,300 | 76,400 | 10,700 r | 82,100 r | 9,950 | 78,900 |
| Industrial | | -- | -- | 373 | 5,520 | 451 | 5,260 |
| Stone, crushed | | 1,920 | 52,200 | 2,140 | 60,600 | 1,880 | 54,700 |
| Combined values of clay (ball, bentonite, common, fuller's earth) | | XX | (7) | XX | (7) | XX | (7) |
| Total | | XX | 129,000 | XX | 148,000 r | XX | 139,000 |
| Missouri: | | | | | | | |
| Cement, portland | | 8,220 | 703,000 e | 8,780 | 844,000 e | 8,540 | 849,000 e |
| Sand and gravel: | | | | | | | |
| Construction | | 11,200 | 78,200 | 10,600 r | 67,500 r | 9,830 | 67,200 |
| Industrial | | 1,990 | 127,000 | 4,290 | 289,000 | 6,290 | 385,000 |
| Stone, crushed | | 68,500 r | 526,000 r | 70,900 r | 562,000 r | 70,300 | 523,000 |
| Combined values of cement (masonry), clay (common, fire, fuller's earth), copper, gemstones (natural), lead, lime, silica (tripoli), silver, stone (dimension), zinc | | XX | 898,000 | XX | 903,000 | XX | 779,000 |
| Total | | XX | 2,330,000 | XX | 2,660,000 r | XX | 2,600,000 |

See footnotes at end of table.

TABLE 5—Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value | Quantity | Value |
| Montana: | | | | | | | |
| Gemstones, natural[e] | | NA | 539 | NA | 544 | NA | 583 |
| Palladium[4] | kilograms | 12,600 | 295,000 | 12,400 | 324,000 | 12,500 | 280,000 |
| Platinum[4] | do. | 3,720 | 178,000 | 3,660 | 163,000 | 3,670 | 125,000 |
| Sand and gravel, construction | | 13,200 r | 100,000 r | 10,900 r | 89,600 r | 11,900 | 90,900 |
| Stone: | | | | | | | |
| Crushed | | 2,680 r | 25,900 r | 2,910 | 26,000 r | 2,790 | 28,000 |
| Dimension | | 31 | 1,590 | 28 | 1,970 | 24 | 1,000 |
| Combined values of cement, clay (bentonite and common), copper, garnet (industrial), gold, iodine, lime, molybdenum concentrates, rhenium, silver, talc (crude) | | XX | 584,000 r | XX | 566,000 r | XX | 484,000 |
| Total | | XX | 1,190,000 r | XX | 1,170,000 r | XX | 1,010,000 |
| Nebraska: | | | | | | | |
| Gemstones, natural[e] | | NA | 4 | NA | 4 | NA | 5 |
| Sand and gravel, construction | | 12,700 r | 88,700 r | 12,100 r | 86,700 r | 12,600 | 90,100 |
| Stone, crushed | | 6,560 r | 73,700 r | 7,440 r | 90,500 r | 7,650 | 94,800 |
| Combined values of cement, clay (common), lime, sand and gravel (industrial) | | XX | (7) | XX | (7) | XX | (7) |
| Total | | XX | 162,000 r | XX | 177,000 r | XX | 185,000 |
| Nevada: | | | | | | | |
| Barite | | 717 | 80,500 | 649 | 85,800 | 410 | 53,400 |
| Gold[4] | kilograms | 170,000 | 7,720,000 | 151,000 | 6,160,000 | 162,000 | 6,050,000 |
| Lithium carbonate | metric tons | 870 [12] | 11,200 | (6) | W | (6) | W |
| Sand and gravel, construction | | 12,700 | 87,800 | 13,600 r | 87,900 r | 15,400 | 89,700 |
| Silver[4] | kilograms | 255,000 | 195,000 | 326,000 | 203,000 | 290,000 | 147,000 |
| Stone, crushed | | 7,840 | 74,900 | 8,630 r | 76,900 r | 8,530 | 80,500 |
| Combined values of cement, clay [bentonite, fuller's earth (2013–14), kaolin], copper, diatomite, gemstones (natural), gypsum (crude), lime, magnesite, molybdenum concentrates, perlite (crude), salt, sand and gravel (industrial), stone (dimension), and values indicated by symbol W | | XX | 1,020,000 r | XX | 904,000 r | XX | 845,000 |
| Total | | XX | 9,190,000 r | XX | 7,510,000 r | XX | 7,260,000 |
| New Hampshire: | | | | | | | |
| Gemstones, natural[e] | | NA | 7 | NA | 7 | NA | 8 |
| Sand and gravel, construction | | 6,250 r | 47,100 r | 6,360 r | 53,600 r | 6,280 | 52,500 |
| Stone: | | | | | | | |
| Crushed | | 4,890 | 43,300 | 5,180 r | 44,800 r | 5,550 | 51,500 |
| Dimension | | 34 | 4,510 | 28 | 3,460 | (6) | (7) |
| Total | | XX | 95,000 r | XX | 102,000 r | XX | 104,000 |
| New Jersey: | | | | | | | |
| Gemstones, natural[e] | | NA | 1 | NA | 1 | NA | 2 |
| Peat | | (6) | (13) | (6) | (13) | (6) | (13) |
| Sand and gravel: | | | | | | | |
| Construction | | 11,000 | 94,000 | 12,100 | 93,300 r | 11,400 | 89,900 |
| Industrial | | 882 | 28,200 | 961 | 37,200 | 950 | 35,500 |
| Stone, crushed | | 17,200 | 144,000 | 16,900 | 154,000 | 17,300 | 153,000 |
| Total | | XX | 266,000 | XX | 284,000 r | XX | 278,000 |
| New Mexico: | | | | | | | |
| Copper[4, 14] | metric tons | 121,000 | 908,000 | 156,000 | 1,090,000 | 181,000 | 1,020,000 |
| Gemstones, natural[e] | | NA | 17 | NA | 18 | NA | 47 |
| Sand and gravel, construction | | 9,380 r | 84,200 r | 8,290 r | 84,500 r | 9,320 | 84,800 |
| Stone, crushed | | 5,040 | 46,900 | 5,050 r | 45,100 r | 5,530 | 49,500 |

See footnotes at end of table.

TABLE 5—Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| New Mexico:—Continued | | | | | | |
| Combined values of cement, clay (common), gold, gypsum (crude), molybdenum concentrates (2013–14), perlite (crude), potash, pumice and pumicite, rhenium, salt, silver, stone (dimension), zeolites | XX | 506,000 r | XX | 537,000 r | XX | 472,000 |
| Total | XX | 1,540,000 r | XX | 1,760,000 r | XX | 1,630,000 |
| New York: | | | | | | |
| Clay, common | 548 | 24,900 | 512 r | 24,000 r | 528 | 25,400 |
| Gemstones, natural e | NA | 99 | NA | 104 | NA | 94 |
| Salt | 7,120 | 502,000 | 7,740 | 577,000 | 7,320 | 615,000 |
| Sand and gravel, construction | 28,900 r | 251,000 r | 27,600 r | 252,000 r | 30,300 | 290,000 |
| Stone: | | | | | | |
| Crushed | 34,500 r | 353,000 r | 36,800 r | 414,000 r | 40,300 | 478,000 |
| Dimension | 120 | 17,300 | 126 | 17,600 | 126 | 17,200 |
| Combined values of cement, garnet (industrial), peat, sand and gravel (industrial), wollastonite | XX | (7) | XX | (7) | XX | (7) |
| Total | XX | 1,150,000 | XX | 1,290,000 r | XX | 1,430,000 |
| North Carolina: | | | | | | |
| Clay, common | 727 | 20,000 | 799 | 17,500 | 923 | 26,700 |
| Gemstones, natural e | NA | 371 | NA | 235 | NA | 299 |
| Sand and gravel: | | | | | | |
| Construction | 7,390 | 49,900 | 7,350 r | 48,600 r | 7,940 | 52,300 |
| Industrial | 1,290 | 30,700 | 2,640 r | 41,500 r | 4,050 | 55,100 |
| Stone: | | | | | | |
| Crushed | 46,600 | 715,000 | 46,200 | 727,000 | 49,800 | 783,000 |
| Dimension | 47 | 19,600 | 44 | 20,700 | 91 | 18,600 |
| Combined values of andalusite, clay [kaolin (2013–14)], feldspar, mica (crude), phosphate rock, pyrophyllite (crude) | XX | (7) | XX | (7) | XX | (7) |
| Total | XX | 836,000 r | XX | 856,000 r | XX | 936,000 |
| North Dakota: | | | | | | |
| Clay, common | (6) | (7) | (6) | (7) | (6) | (7) |
| Gemstones, natural e | NA | 4 | NA | 4 | NA | 5 |
| Lime | (6) | (7) | (6) | (7) | (6) | (7) |
| Sand and gravel: | | | | | | |
| Construction | 25,900 r | 187,000 r | 20,600 r | 147,000 r | 18,100 | 116,000 |
| Industrial | (6) | (7) | (6) | (7) | (6) | (7) |
| Stone, crushed | 998 r | 11,700 r | 1,130 r | 12,000 r | 776 | 5,640 |
| Total | XX | 198,000 r | XX | 159,000 r | XX | 122,000 |
| Ohio: | | | | | | |
| Cement, portland | 829 | 79,000 e | 864 | 90,000 e | 916 | 104,000 e |
| Clay, common | 602 | 9,100 | 643 | 9,980 | 653 | 10,600 |
| Gemstones, natural e | NA | 4 | NA | 4 | NA | 5 |
| Lime | 1,780 | 229,000 | 1,800 | 234,000 | 1,500 | 201,000 |
| Sand and gravel: | | | | | | |
| Construction | 28,900 r | 225,000 r | 30,500 r | 228,000 r | 33,300 | 274,000 |
| Industrial | 1,230 | 61,100 | 2,850 | 211,000 | 1,440 | 79,400 |
| Stone: | | | | | | |
| Crushed | 52,900 | 433,000 | 53,500 r | 477,000 r | 58,700 | 525,000 |
| Dimension | 27 | 6,610 | 21 | 5,150 | 22 | 6,070 |
| Combined values of cement (masonry), clay [fire (2015)], peat, salt | XX | (7) | XX | (7) | XX | (7) |
| Total | XX | 1,040,000 | XX | 1,250,000 r | XX | 1,200,000 |
| Oklahoma: | | | | | | |
| Clay, common | 925 | 3,160 | 906 | 2,760 r | 948 | 2,850 |
| Gemstones, natural e | NA | 4 | NA | 4 | NA | 5 |

See footnotes at end of table.

TABLE 5—Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Oklahoma:—Continued | | | | | | |
| Sand and gravel: | | | | | | |
| Construction | 10,900 r | 74,500 r | 11,800 r | 89,400 r | 11,500 | 95,600 |
| Industrial | 2,120 | 89,100 | 3,340 | 122,000 | 3,100 | 73,100 |
| Stone: | | | | | | |
| Crushed | 39,800 | 304,000 | 39,500 r | 321,000 r | 37,400 | 328,000 |
| Dimension | 43 | 7,880 | 62 | 5,240 | 67 | 5,920 |
| Combined values of cement, feldspar, gypsum (crude), helium [crude (2015) and Grade-A (2013–15)], iodine (crude), lime, pumice and pumicite (2013–14), salt | XX | 245,000 r | XX | 286,000 r | XX | 274,000 |
| Total | XX | 724,000 r | XX | 827,000 r | XX | 780,000 |
| Oregon: | | | | | | |
| Gemstones, natural e | NA | 1,100 | NA | 1,090 | NA | 1,180 |
| Sand and gravel, construction | 11,300 | 90,700 | 11,000 r | 94,000 r | 12,500 | 109,000 |
| Stone, crushed | 16,700 r | 131,000 r | 17,600 r | 135,000 r | 17,800 | 129,000 |
| Combined values of cement, clay (bentonite and common), diatomite, emery [crude (2013–14)], lime, perlite (crude), pumice and pumicite, sand and gravel [industrial (2014–15)], zeolites | XX | 118,000 | XX | 133,000 | XX | 154,000 |
| Total | XX | 341,000 r | XX | 364,000 r | XX | 394,000 |
| Pennsylvania: | | | | | | |
| Cement: | | | | | | |
| Masonry | 143 | 20,500 r, e | 152 r | 22,100 r, e | 179 | 26,600 e |
| Portland | 3,620 | 353,000 e | 3,830 | 352,000 e | 3,920 | 396,000 e |
| Clay, common | 236 | 2,150 | 229 | 2,070 | 237 | 2,220 |
| Gemstones, natural e | NA | 1 | NA | 1 | NA | 2 |
| Lime | 1,090 | 151,000 | 1,080 | 148,000 | 968 | 132,000 |
| Peat | (6) | (7) | (6) | (7) | (6) | (7) |
| Sand and gravel: | | | | | | |
| Construction | 10,500 | 94,800 | 9,730 r | 95,100 r | 10,300 | 111,000 |
| Industrial | (6) | (7) | (6) | (7) | (6) | (7) |
| Stone: | | | | | | |
| Crushed | 78,800 | 888,000 | 82,200 r | 1,010,000 r | 89,000 | 1,170,000 |
| Dimension | 25 | 5,890 | 51 | 5,720 | 42 | 6,410 |
| Total | XX | 1,520,000 r | XX | 1,630,000 r | XX | 1,850,000 |
| Rhode Island: | | | | | | |
| Gemstones, natural e | NA | 1 | NA | 1 | NA | 2 |
| Sand and gravel: | | | | | | |
| Construction | 2,410 | 30,000 | 2,830 r | 32,800 r | 2,360 | 28,200 |
| Industrial | (6) | (7) | (6) | (7) | (6) | (7) |
| Stone, crushed | 1,640 | 17,600 | 1,960 r | 21,200 r | 2,350 | 25,200 |
| Total | XX | 47,600 | XX | 54,100 r | XX | 53,400 |
| South Carolina: | | | | | | |
| Cement: | | | | | | |
| Masonry | 155 | 22,000 e | 160 | 23,700 e | 168 | 26,000 e |
| Portland | 2,780 | 236,000 e | 2,890 | 273,000 e | 3,070 | 318,000 e |
| Clay: | | | | | | |
| Common | (6) | (7) | (6) | (7) | (6) | (7) |
| Kaolin | 313 | 27,100 | 345 | 30,200 | 354 | 31,500 |
| Gemstones, natural e | NA | 1 | NA | 1 | NA | 2 |
| Sand and gravel: | | | | | | |
| Construction | 6,510 | 37,300 | 8,080 | 42,000 r | 8,770 | 47,600 |
| Industrial | 521 | 23,600 | 589 | 26,800 | 551 | 24,400 |

See footnotes at end of table.

TABLE 5—Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value | Quantity | Value |
| South Carolina:—Continued | | | | | | | |
| Stone: | | | | | | | |
| Crushed | | 20,000 | 207,000 | 20,300 r | 219,000 r | 23,800 | 273,000 |
| Dimension | | (6) | (7) | (6) | (7) | (6) | (7) |
| Vermiculite | | (6) | (7) | (6) | (7) | (6) | (7) |
| Total | | XX | 553,000 | XX | 614,000 r | XX | 721,000 |
| South Dakota: | | | | | | | |
| Sand and gravel, construction | | 11,800 | 53,000 | 11,900 r | 59,100 r | 11,100 | 54,100 |
| Stone, crushed | | 6,300 | 44,700 | 6,900 r | 52,000 r | 6,580 | 47,600 |
| Combined values of cement, clay (common), feldspar, gemstones (natural), gold, gypsum (crude), lime, mica (crude), sand and gravel (industrial), silver, stone (dimension) | | XX | 187,000 | XX | 221,000 | XX | 226,000 |
| Total | | XX | 285,000 | XX | 333,000 r | XX | 328,000 |
| Tennessee: | | | | | | | |
| Clay, ball | | 623 | 28,500 | 648 | 27,400 | 601 | 27,900 |
| Sand and gravel: | | | | | | | |
| Construction | | 6,060 | 48,300 | 5,790 r | 41,000 r | 6,460 | 50,500 |
| Industrial | | 1,090 | 35,600 | 1,490 | 60,500 | 1,540 | 49,100 |
| Stone: | | | | | | | |
| Crushed | | 37,100 r | 464,000 r | 38,200 r | 483,000 r | 40,100 | 511,000 |
| Dimension | | 32 | 6,140 | 51 | 11,000 | 52 | 10,200 |
| Combined values of cadmium, cement, clay (common and fuller's earth), gemstones (natural), lime, salt, zinc | | XX | 378,000 | XX | 407,000 | XX | 398,000 |
| Total | | XX | 961,000 r | XX | 1,030,000 r | XX | 1,050,000 |
| Texas: | | | | | | | |
| Cement: | | | | | | | |
| Masonry | | 238 | 37,300 e | 277 | 43,300 e | 268 | 46,200 e |
| Portland | | 10,100 | 995,000 e | 11,000 | 1,170,000 e | 10,400 | 1,200,000 e |
| Clay: | | | | | | | |
| Bentonite | | 56 r | 9,990 | 59 | 10,400 | 51 | 8,570 |
| Common | | 1,520 | 12,100 | 1,740 | 14,400 | 2,100 | 39,400 |
| Gemstones, natural[e] | | NA | 172 | NA | 170 | NA | 180 |
| Lime | | 1,360 | 154,000 | 1,490 | 171,000 | 1,460 | 170,000 |
| Salt | | 7,770 | 166,000 | 8,010 | 182,000 | 7,570 | 173,000 |
| Sand and gravel: | | | | | | | |
| Construction | | 77,300 r | 625,000 r | 77,100 r | 693,000 r | 83,700 | 790,000 |
| Industrial | | 7,080 | 434,000 | 16,500 | 1,300,000 | 14,200 | 706,000 |
| Stone: | | | | | | | |
| Crushed | | 135,000 r | 1,080,000 | 154,000 r | 1,340,000 r | 162,000 | 1,610,000 |
| Dimension | | 905 | 151,000 | 922 | 159,000 | 1,060 | 142,000 |
| Combined values of clay (ball, fire, fuller's earth, kaolin), gypsum (crude), helium (crude), iodine [crude (2015)], talc, (crude), zeolites | | XX | 57,800 | XX | 58,000 | XX | 66,700 |
| Total | | XX | 3,720,000 | XX | 5,150,000 r | XX | 4,950,000 |
| Utah: | | | | | | | |
| Beryllium[8] | metric tons | 235 | W | 270 | W | 205 | W |
| Gemstones, natural[e] | | NA | 857 | NA | 860 | NA | 174 |
| Iron ore | | 1,270 | 103,000 | 998 | 83,000 | -- | -- |
| Salt | | 2,040 | 157,000 | 2,360 | 157,000 r | 2,010 | 159,000 |
| Sand and gravel, construction | | 25,200 r | 181,000 | 25,500 r | 191,000 r | 29,300 | 220,000 |
| Stone: | | | | | | | |
| Crushed | | 7,260 | 59,300 | 8,290 r | 65,300 r | 8,200 | 57,800 |
| Dimension | | (6) | W | (6) | W | 6 | 620 |
| Vanadium[4] | metric tons | 591 | 7,870 | -- | -- | -- | -- |

See footnotes at end of table.

TABLE 5—Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Utah:—Continued | | | | | | |
| Combined values of cement, clay (bentonite and common), copper, gold, gypsum (crude), helium [crude (2015) and Grade-A (2015)], iron oxide pigments (2014–15), lime, magnesium compounds, magnesium metal, molybdenum concentrates, phosphate rock, potash, rhenium, silver, and values indicated by symbol W | XX | 2,910,000 r | XX | 3,000,000 r | XX | 1,690,000 |
| Total | XX | 3,420,000 r | XX | 3,490,000 r | XX | 2,120,000 |
| Vermont: | | | | | | |
| Gemstones, natural[e] | NA | 1 | NA | 1 | NA | 2 |
| Sand and gravel, construction | 4,890 r | 36,500 r | 4,790 r | 32,800 r | 4,960 | 36,000 |
| Stone: | | | | | | |
| Crushed | 6,490 r | 64,100 | 6,500 r | 65,200 r | 6,740 | 69,100 |
| Dimension | 80 | 25,200 r | 92 | 24,100 | 87 | 27,900 |
| Talc, crude | (6) | (7) | (6) | (7) | (6) | (7) |
| Total | XX | 126,000 | XX | 122,000 r | XX | 133,000 |
| Virginia: | | | | | | |
| Kyanite metric tons | 110,000 r | 38,000 r, e | 89,000 r | 29,000 r, e | 108,000 | 37,000 e |
| Sand and gravel, construction | 6,820 | 75,000 | 7,110 r | 80,400 r | 7,660 | 81,400 |
| Stone: | | | | | | |
| Crushed | 54,700 r | 819,000 r | 44,200 r | 686,000 r | 46,400 | 748,000 |
| Dimension | 12 | 7,590 | 13 | 7,730 | 12 | 7,690 |
| Combined values of cement, clay (common and fuller's earth), feldspar, gemstones (natural), iron oxide pigments [crude (2013)], lime, mica (crude), salt, sand and gravel (industrial), staurolite (2015), talc [crude (2013–14)], titanium mineral concentrates (ilmenite), vermiculite (crude), zirconium mineral concentrates (zircon) | XX | 325,000 | XX | 285,000 | XX | 334,000 |
| Total | XX | 1,260,000 r | XX | 1,090,000 r | XX | 1,210,000 |
| Washington: | | | | | | |
| Gemstones, natural[e] | NA | 58 | NA | 59 | NA | 99 |
| Sand and gravel, construction | 31,100 r | 235,000 r | 32,000 r | 238,000 r | 33,300 | 271,000 |
| Stone, crushed | 14,300 r | 184,000 r | 13,700 r | 179,000 r | 14,500 | 212,000 |
| Combined values of cement, clay [common (2015) and fire (2013–14)], diatomite, gold, lead (2014–15), lime, peat, sand and gravel (industrial), stone [dimension (2015)], zinc (2014–15) | XX | 328,000 | XX | 284,000 | XX | 319,000 |
| Total | XX | 747,000 r | XX | 702,000 r | XX | 801,000 |
| West Virginia: | | | | | | |
| Gemstones, natural[e] | NA | 1 | NA | 1 | NA | 2 |
| Sand and gravel: | | | | | | |
| Construction | 487 | 4,130 | 618 | 5,240 | 583 | 4,950 |
| Industrial | 429 | 21,900 | 536 | 29,500 | 681 | 37,500 |
| Stone, crushed | 14,800 | 156,000 | 14,900 | 168,000 | 15,000 | 165,000 |
| Combined values of cement, clay (common), lime, salt | XX | (7) | XX | (7) | XX | (7) |
| Total | XX | 182,000 | XX | 202,000 | XX | 208,000 |
| Wisconsin: | | | | | | |
| Gemstones, natural[e] | NA | 7 | NA | 7 | NA | 8 |
| Lime | (6) | (7) | (6) | (7) | (6) | (7) |
| Sand and gravel: | | | | | | |
| Construction | 24,900 r | 129,000 r | 26,300 r | 149,000 r | 28,000 | 168,000 |
| Industrial | 19,800 | 1,210,000 | 38,300 | 3,150,000 | 32,200 | 1,390,000 |
| Stone: | | | | | | |
| Crushed | 20,300 | 129,000 | 21,600 r | 149,000 r | 22,500 | 168,000 |
| Dimension | 156 | 37,200 | 190 | 40,200 | 199 | 41,200 |
| Total | XX | 1,510,000 r | XX | 3,490,000 r | XX | 1,770,000 |

See footnotes at end of table.

TABLE 5—Continued
NONFUEL MINERAL PRODUCTION IN THE UNITED STATES, BY STATE[1, 2, 3]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Wyoming: | | | | | | |
| Clay, bentonite | 4,000 | 253,000 | 4,340 | 289,000 | 3,570 | 253,000 |
| Gemstones, natural[e] | NA | 18 | NA | 18 | NA | 18 |
| Sand and gravel, construction | 11,700 [r] | 94,300 [r] | 13,700 [r] | 118,000 [r] | 15,000 | 134,000 |
| Stone, crushed | 9,640 [r] | 42,700 [r] | 11,300 [r] | 48,000 [r] | 18,400 | 52,800 |
| Combined values of cement, clay (common), gypsum (crude), helium (Grade-A), lime, soda ash | XX | 1,840,000 [r] | XX | 2,050,000 [r] | XX | 2,040,000 |
| Total | XX | 2,230,000 [r] | XX | 2,510,000 [r] | XX | 2,480,000 |
| Undistributed: | | | | | | |
| Combined values of Connecticut, Delaware, Illinois, Iowa (2014–15), Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Nebraska, New Hampshire (2015), New York, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, Vermont, West Virginia, Wisconsin | XX | 2,740,000 [r] | XX | 3,210,000 | XX | 2,950,000 |

[e]Estimated. [r]Revised. do. Ditto. NA Not available. W Withheld to avoid disclosing company proprietary data; included in "Combined values" data for each State. XX Not applicable. -- Zero.

[1]Includes data available through June 2018.

[2]Production as measured by mine shipments, sales, or marketable production (including consumption by producers). Mine output as measured as sold or used by producers in a given year is primarily shown in the tables, because values can be assigned. Where sold or used data are not available, actual mine output is used as the production measurement and value is estimated on the basis of the average price of the mineral commodity for that year.

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

[4]Recoverable content of ores and concentrates. The values assigned to the quantities are based on the average selling price of refined metal, not the value of the mined material, except for molybdenum and vanadium where the value is based on the metal oxide content.

[5]Rare-earth-oxide (REO) basis.

[6]Withheld to avoid disclosing company proprietary data.

[7]Withheld to avoid disclosing company proprietary data; value included in "Undistributed."

[8]Content of concentrates.

[9]Source: Lundin Mining Corp., 2016, Management's Discussion and Analysis for the year ended December 31, 2015: Toronto, Ontario, Canada, Lundin Mining Corp., 106 p. (Accessed May 21, 2018, at https://www.lundinmining.com/site/assets/files/3758/2015_af.pdf.)

[10]Production based on publicly available data; refer to the Minerals Yearbook iron ore chapter.

[11]Recoverable content of nickel sulfide concentrates.

[12]Contained lithium.

[13]Withheld to avoid disclosing company proprietary data; included in "Total."

[14]Production based on publicly available data; refer to the Freeport-McMoRan Copper & Gold Inc., 2016, Form 10–K—2015: U.S. Securities and Exchange Commission, 551 p. (Accessed June 22, 2016, at http://d1lge852tjjqow.cloudfront.net/CIK-0000831259/78231b00-1269-4bd9-84a0-ff9732e28be3.pdf.)

TABLE 6

NONFUEL RAW MINERAL PRODUCTION IN THE COMMONWEALTH OF PUERTO RICO[1, 2, 3, 4]

(Thousand metric tons and thousand dollars)

| Commodity | 2013 | | 2014 | | 2015 | |
|---|---|---|---|---|---|---|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Cement: | | | | | | |
| Masonry | (5) | W | -- | -- | -- | -- |
| Portland | 610 | W | 588 | W | 536 | W |
| Clay, common[e] | 58 | 320 | 58 | 320 | 61 | 335 |
| Lime | (6) | W | (6) | W | (6) | W |
| Salt[e] | 45 | 1,500 | 45 | 1,720 | 46 | 1,790 |
| Stone, crushed | 5,990 | 61,000 | 6,070 [r] | 56,600 [r] | 5,150 | 46,900 |
| Total | XX | 62,800 [r] | XX | 58,600 [r] | XX | 49,000 |

[e]Estimated. [r]Revised. W Withheld to avoid disclosing company proprietary data; excluded from "Total." XX Not applicable. -- Zero.

[1]Includes data available through June 2018.

[2]Production as measured by mine shipments, sales, or marketable production (including consumption by producers). Mine output as measured as sold or used by the producers in a given year is primarily shown in the tables, because values can be assigned. Where sold or used data are not available, actual mine output is used as the production measurement and value is estimated on the basis of the average price of the mineral commodity for that year.

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

[4]Data for crushed stone from the Administered Islands American Samoa, Guam, and the Virgin Islands are not included because these data are withheld to avoid disclosing company proprietary data.

[5]Less than ½ unit.

[6]Withheld to avoid disclosing company proprietary data.

TABLE 7

U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value |
| Metals: | | | | | |
| Aluminum: | | | | | |
| Crude and semicrude | metric tons | 3,230,000 | 9,200,000 | 3,010,000 | 8,450,000 |
| Manufactures | do. | 110,000 | 484,000 | 105,000 | 454,000 |
| Antimony: | | | | | |
| Metal, alloys, waste and scrap | do. | 1,570 | 5,930 r | 1,440 | 5,740 |
| Oxide, Sb content | do. | 1,670 | 11,100 r | 1,760 | 12,000 |
| Arsenic metal, As content | do. | 2,970 r | NA | 1,670 | NA |
| Bauxite and alumina: | | | | | |
| Alumina, calcined equivalent | | 2,130 | 961,000 | 2,220 | 918,000 |
| Bauxite: | | | | | |
| Calcined, refractory and other grade | | 8 | 1,740 | 10 | 1,740 |
| Crude and dried | | 3 | NA | 4 | NA |
| Beryllium, unwrought, waste and scrap, other including articles not elsewhere specified, Be content | kilograms | 26,400 | 21,000 | 28,900 | 15,300 |
| Bismuth, metal, alloys, waste and scrap, Bi content | do. | 567,000 | 6,300 | 519,000 | 5,350 |
| Cadmium: | | | | | |
| Sulfide, gross weight | do. | 3,000 | 712 | 3,740 | 829 |
| Unwrought metal and powders | do. | 198,000 | 509 | 350,000 | 783 |
| Waste and scrap | do. | -- | -- | 147 | 3 |
| Chromium: | | | | | |
| Ores and concentrate | metric tons | 6,060 | 4,150 | 7,210 | 5,680 |
| Metals and alloys: | | | | | |
| Metal, unwrought powders, waste and scrap, other | do. | 665 r | 17,800 r | 801 | 15,700 |
| Ferroalloys, high-carbon, low-carbon, ferrochromium-silicon | do. | 4,730 | 8,060 | 1,080 | 1,820 |
| Chemicals: | | | | | |
| Oxides, trioxide, other | do. | 19,800 | 91,400 r | 5,200 | 26,500 |
| Sulfates | do. | 207 | 1,100 | 238 | 1,230 |
| Salts of oxometallic or peroxometallic acids, zinc and lead chromate, sodium dichromate, potassium dichromate, other | do. | 13,800 | 27,200 | 405 | 2,760 |
| Pigments and preparations | do. | 432 r | 3,180 r | 521 | 3,640 |
| Cobalt: | | | | | |
| Acetates | do. | 181 | 3,380 | 180 | 1,390 |
| Chlorides | do. | 3 | 44 | (3) | 7 |
| Oxides and hydroxides | do. | 536 | 5,720 | 192 | 2,690 |
| Metal, unwrought, powders, waste and scrap, mattes, other intermediate products of metallurgy | do. | 4,070 | 102,000 | 3,640 | 87,000 |
| Copper: | | | | | |
| Unmanufactured, does not include unalloyed scrap, Cu content | do. | 571,000 | 3,910,000 r | 506,000 | 3,430,000 |
| Semimanufactures | do. | 247,000 | 1,980,000 | 250,000 | 1,800,000 |
| Scrap, unalloyed | do. | 430,000 | 1,920,000 r | 426,000 | 1,610,000 |
| Ferroalloys not listed elsewhere: | | | | | |
| Ferrophosphorus | do. | 544 | 993 | 976 | 1,760 |
| Other | do. | 7,390 | 15,700 | 3,380 | 9,530 |
| Gold: | | | | | |
| Ores and concentrates | kilograms | 4,350 r | 178,000 | 5,280 | 193,000 |
| Dore and precipitates | do. | 120,000 r | 4,880,000 r | 123,000 | 4,710,000 |
| Bullion, refined | do. | 387,000 r | 15,600,000 r | 366,000 | 13,800,000 |
| Waste and scrap | do. | 149,000 r | 814,000 r | 372,000 | 1,440,000 |
| Metal powder | do. | 1,220 r | 46,300 r | 542 | 10,600 |
| Compounds | do. | 13,000 r | 102,000 r | 12,800 | 94,400 |
| Iron and steel: | | | | | |
| Steel mill products | | 10,900 | NA | 9,050 | NA |
| Fabricated steel products | | 2,060 | NA | 1,870 | NA |
| Cast iron and steel products | | 342 | NA | 221 | NA |

See footnotes at end of table.

TABLE 7—Continued

U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value |
| Metals:—Continued | | | | | |
| Iron and steel scrap: | | | | | |
| Ferrous, includes tinplate and terneplate, excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping | | 15,300 | 6,150,000 r | 12,800 | 4,010,000 |
| Pig iron, all grades | metric tons | 6,770 | 2,290 | 17,300 | 5,450 |
| Direct-reduced iron, steelmaking grade | do. | 1,110 | 132 | 20,200 | 549 |
| Ships, boats, and other vessels for scrapping | | 7 | 1,300 | 4 | 641 |
| Used rails for rerolling and other uses, includes mixed (used plus new) rails | | 41 | 38,100 | 35 | 45,300 |
| Iron ore | | 12,100 | 1,320,000 | 7,540 | 612,000 |
| Lead: | | | | | |
| Base bullion, Pb content | metric tons | 964 | 2,830 | 596 | 1,470 |
| Ore and concentrates, Pb content | do. | 356,000 | 582,000 | 349,000 | 467,000 |
| Unwrought and alloys, Pb content | do. | 55,300 | 63,800 | 55,900 | 54,000 |
| Wrought and alloys, Pb content | do. | 5,020 | 10,100 | 2,880 | 10,100 |
| Scrap, gross weight | do. | 36,400 | 51,300 | 46,200 | 57,000 |
| Magnesium, gross weight: | | | | | |
| Waste and scrap | do. | 922 r | 2,460 | 433 | 895 |
| Metal | do. | 6,020 r | 22,000 r | 5,220 | 18,300 |
| Alloys | do. | 8,150 r | 32,000 r | 7,490 | 27,200 |
| Powder, sheets, tubing, ribbons, wire, other forms | do. | 1,910 r | 57,900 r | 2,060 | 71,700 |
| Manganese, gross weight: | | | | | |
| Ores and concentrates with 20% or more manganese | do. | 858 | 2,250 | 700 | 1,550 |
| Ferromanganese, all grades | do. | 5,530 r | 8,580 r | 5,140 | 5,630 |
| Silicomanganese | do. | 3,320 | 3,820 | 1,220 | 1,340 |
| Metal, including alloys and waste and scrap | do. | 3,610 r | 7,350 r | 5,390 | 7,660 |
| Dioxide | do. | 3,800 r | 7,870 | 3,270 | 7,940 |
| Mercury: | | | | | |
| Metal | kilograms | -- | -- | 30 | 3 |
| Amalgams of precious metals whether or not chemically defined | metric tons | 108 r | 474,000 | 99 | 375,000 |
| Molybdenum: | | | | | |
| Ore and concentrates, including roasted and other, Mo content | do. | 60,500 | 1,240,000 | 36,800 | 587,000 |
| Chemicals, gross weight: | | | | | |
| Oxides and hydroxides | do. | 1,740 | 33,500 | 1,300 | 22,300 |
| Molybdates, all | do. | 1,600 | 22,100 r | 2,020 | 22,300 |
| Ferromolybdenum, Mo content | do. | 592 r | 18,400 | 569 | 15,100 |
| Other, includes powders, unwrought, bars and rods, waste and scrap, wire, other, gross weight | do. | 1,320 | 97,700 r | 1,180 | 77,900 |
| Nickel: | | | | | |
| Primary, unwrought and chemicals, Ni content | do. | 10,400 | 465,000 r | 9,580 | 414,000 |
| Secondary, stainless steel scrap and waste and scrap, Ni content | do. | 56,300 r | 799,000 | 51,900 | 747,000 |
| Wrought, not alloyed, bars, rods, profiles, wire, sheets, strip, foil, tubes, pipes, Ni content | do. | 680 | 23,900 | 526 | 21,400 |
| Alloyed, unwrought ingot, bars, rods, profiles, wire, sheets, strip, foil, tubes, pipes, other alloyed articles, gross weight | do. | 45,200 | 1,810,000 | 46,500 | 1,810,000 |
| Niobium (columbium) and tantalum, gross quantity: | | | | | |
| Niobium: | | | | | |
| Ores and concentrates | kilograms | 59,600 | 772 | 73,400 | 557 |
| Ferroniobium | do. | 1,620,000 | 22,900 | 2,140,000 | 26,300 |
| Tantalum: | | | | | |
| Ores and concentrates, includes synthetic | do. | XX | 11,300 r | XX | 8,130 |
| Unwrought powders | do. | 206,000 | 100,000 | 230,000 | 84,600 |
| Unwrought, alloys and metal | do. | 40,200 | 9,740 | 5,300 | 2,140 |
| Waste and scrap | do. | 285,000 r | 46,300 r | 280,000 | 42,700 |
| Wrought | do. | 56,900 | 36,100 | 57,300 | 36,200 |

See footnotes at end of table.

TABLE 7—Continued

U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value |
| Metals:—Continued | | | | | |
| Platinum-group metals: | | | | | |
| Palladium, Pd content | kilograms | 22,500 | 460,000 | 23,000 | 458,000 |
| Platinum, includes waste and scrap and metal, Pt content | do. | 269,000 | 1,660,000 | 261,000 | 1,360,000 |
| Iridium, osmium, ruthenium, gross weight | do. | 901 | 13,200 | 782 | 13,800 |
| Rhodium, Rh content | do. | 428 | 17,000 | 759 | 25,800 |
| Rare earths, estimated rare-earth-oxide (REO) content: | | | | | |
| Compounds: | | | | | |
| Cerium compounds | do. | 608,000 | 9,200 r | 440,000 | 10,700 |
| Other | do. | 3,800,000 | 43,700 | 4,500,000 | 43,800 |
| Metals: | | | | | |
| Ferrocerium and other pyrophoric alloys | do. | 1,630,000 | 18,000 | 1,220,000 | 15,800 |
| Other, metals and alloys | do. | 140,000 | 3,490 | 56,800 | 3,750 |
| Selenium and tellurium: | | | | | |
| Selenium, Se content | do. | 521,000 | 9,620 | 468,000 | 8,160 |
| Tellurium, Te content | do. | 27,900 | 1,920 | 40,800 | 2,530 |
| Silicon, gross weight: | | | | | |
| Ferrosilicon | metric tons | 15,900 | 27,900 | 16,700 | 31,300 |
| Metal | do. | 45,400 | 1,670,000 | 36,800 | 1,280,000 |
| Silver: | | | | | |
| Bullion, Ag content | kilograms | 342,000 r | 248,000 r | 781,000 | 557,000 |
| Dore, Ag content | do. | 31,700 r | 19,700 r | 34,400 | 18,300 |
| Metal powder, gross weight | do. | 731,000 | 511,000 | 617,000 | 375,000 |
| Nitrate, gross weight | do. | 33,000 | 3,770 | 28,900 | 3,170 |
| Ores and concentrates, Ag content | do. | 5,740 | 17,900 | 2,500 | 8,480 |
| Semimanufactured forms containing 99.5% or more by weight of silver, gross weight | do. | 510,000 r | 344,000 r | 265,000 | 140,000 |
| Waste and scrap, gross weight | do. | 15,600,000 r | 1,570,000 | 14,700,000 | 1,430,000 |
| Unwrought, other, gross weight | do. | 102,000 | 99,900 | 126,000 | 118,000 |
| Thorium and thorium-bearing materials, compounds | do. | 15,300 r | 1,970 r | 2,160 | 776 |
| Tin: | | | | | |
| Unwrought: | | | | | |
| Refined tin | metric tons | 2,920 | 25,200 | 807 | 14,900 |
| Tin alloys | do. | 2,790 | 20,300 | 2,540 | 19,400 |
| Wrought: | | | | | |
| Tin bars, rods, profiles, wire | do. | 5,140 | 38,800 | 5,180 | 40,700 |
| Tin foil | do. | 23 | 344 | 33 | 563 |
| Tin plates, sheet, strip | do. | 1,180 | 3,110 | 300 | 2,280 |
| Tin tubes, pipes, tube and pipe fittings | do. | 113 | 1,130 | 114 | 1,630 |
| Tin waste and scrap | do. | 7,480 | 19,600 | 2,530 | 7,350 |
| Tin flakes and powders | do. | 174 | 4,260 | 110 | 2,470 |
| Tinplate and terneplate | do. | 104,000 r | 105,000 r | 105,000 | 76,500 |
| Titanium: | | | | | |
| Metal, scrap, unwrought, wrought products and castings, ferrotitanium and ferrosilicon titanium | do. | 34,600 r | 1,500,000 r | 35,400 | 1,470,000 |
| Ores and concentrates | do. | 2,240 | 5,400 | 2,040 | 3,500 |
| Pigment, dioxide and oxide | do. | 685,000 | 1,790,000 | 648,000 | 1,460,000 |
| Tungsten, W content: | | | | | |
| Ammonium paratungstate | do. | 653 | 9,140 | 310 | 3,280 |
| Carbide powder | do. | 994 r | 58,900 r | 901 | 46,600 |
| Metal powders | do. | 448 | 33,300 | 312 | 23,000 |
| Miscellaneous tungsten-bearing materials, ferrotungsten, ferrosilicon tungsten, unwrought, waste and scrap, wrought, compounds | do. | 3,400 r | 56,800 r | 1,840 | 40,300 |
| Ores and concentrates | do. | 1,230 | 34,700 | 398 | 6,890 |

See footnotes at end of table.

TABLE 7—Continued
U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value |
| Metals:—Continued | | | | | |
| Vanadium: | | | | | |
| Aluminum-vanadium master alloy, gross weight | kilograms | 443,000 | 12,400 | 229,000 | 6,450 |
| Ferrovanadium, V content | do. | 253,000 | 7,510 | 122,000 | 3,190 |
| Metal, including waste and scrap, gross weight | do. | 31,900 | 1,150 | 5,200 | 354 |
| Pentoxide, anhydride, V content | do. | 201,000 | 2,890 r | 356,000 | 3,430 |
| Other oxides and hydroxides, V content | do. | 350,000 | 4,800 | 99,800 | 841 |
| Zinc: | | | | | |
| Compounds, chromates of zinc or of lead, lithopone, chloride, oxide, sulfate, sulfide | metric tons | XX | 46,700 | XX | 52,300 |
| Ores and concentrates, Zn content | do. | 644,000 | 1,120,000 | 709,000 | 987,000 |
| Refined | do. | 19,800 | NA | 12,700 | NA |
| Zirconium: | | | | | |
| Ferrozirconium | do. | 1,710 r | 4,110 r | 1,620 | 3,270 |
| Ores and concentrates | do. | 9,020 r | 22,200 r | 6,270 | 17,400 |
| Oxide, includes germanium oxide and zirconium dioxide | do. | 7,380 | NA | 5,740 | NA |
| Unwrought, including powders | do. | 325 | 12,300 r | 214 | 7,350 |
| Waste and scrap | do. | 1,150 r | 101,000 r | 1,320 | 116,000 |
| Total | | XX | 65,700,000 r | XX | 57,200,000 |
| Industrial minerals: | | | | | |
| Abrasives, manufactured: | | | | | |
| Aluminum oxide, crude | metric tons | 19,500 | 69,000 | 15,000 | 51,900 |
| Metallic abrasives | do. | 41,000 | 61,400 | 35,900 | 45,600 |
| Silicon carbide, crude, ground and refined | do. | 22,300 | 41,800 | 19,700 | 38,300 |
| Asbestos, includes reexports: | | | | | |
| Manufactured | do. | NA | 29,800 r | NA | 26,000 |
| Unmanufactured | do. | 279 | 54 | 517 | 116 |
| Barite, natural barium sulfate | do. | 153,000 | 41,800 | 139,000 | 51,300 |
| Boron minerals and compounds: | | | | | |
| Boric acid, includes orthoboric and anhydrous | do. | 225,000 | 178,000 | 198,000 | 323,000 |
| Sodium borates | do. | 584,000 | 304,000 | 495,000 | 264,000 |
| Bromine: | | | | | |
| Compounds, includes methyl bromine and ethylene dibromide, Br content | do. | 17,200 r | 58,200 r | 21,100 | 71,100 |
| Elemental, gross weight | do. | 3,420 | 8,890 | 3,960 | 8,850 |
| Cement, hydraulic and clinker[4] | | 1,440 r | 237,000 r | 1,330 | 224,000 |
| Clay: | | | | | |
| Ball | | 33 | 7,540 r | 48 | 10,200 |
| Bentonite | | 901 | 179,000 r | 938 | 199,000 |
| Fire | | 237 | 52,700 | 217 | 40,600 |
| Fuller's earth | | 92 | 34,900 | 77 | 31,700 |
| Kaolin | | 2,640 | 596,000 | 2,420 | 557,000 |
| Other, n.e.c.[5] | | 282 | 72,000 | 268 | 73,600 |
| Diamond: | | | | | |
| Exclusive of industrial diamond, including reexports | thousand carats | 14,500 | 21,300,000 | 12,200 | 18,500,000 |
| Industrial including exports and reexports: | | | | | |
| Unworked, reexports | do. | 827 r | 23,400 r | 569 | 21,500 |
| Powder, dust and grit, natural and synthetic | do. | 175,000 r | 86,500 r | 157,000 | 74,500 |
| Diatomite | | 82 | 44,300 r | 75 | 41,300 |
| Feldspar | metric tons | 16,000 | 5,880 | 15,100 | 4,920 |
| Fluorspar | do. | 13,400 | 2,300 | 13,700 | 2,210 |
| Garnet, industrial | do. | 15,400 | 12,800 | 14,700 | 11,000 |
| Graphite, natural and artificial | do. | 44,600 r | 241,000 r | 43,700 | 198,000 |
| Gypsum and gypsum products: | | | | | |
| Crude | | 67 | 29,900 | 63 | 28,000 |
| Plasters | | 101 | 46,000 r | 95 | 42,100 |

See footnotes at end of table.

TABLE 7—Continued

U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value |
| Industrial minerals:—Continued | | | | | |
| Gypsum and gypsum products:—Continued | | | | | |
| Boards | | 829 | 150,000 | 767 | 137,000 |
| Other | | XX | 73,100 | XX | 79,100 |
| Helium, Grade-A | million cubic meters | 67.5 r | NA | 64.8 | NA |
| Iodine: | | | | | |
| Crude, resublimed | metric tons | 1,240 | 36,200 | 1,190 | 29,100 |
| Potassium iodide | do. | 256 r | 5,610 | 282 | 5,670 |
| Iron oxide pigments and hydroxides: | | | | | |
| Pigment grade | do. | 8,790 | 16,000 | 8,930 | 17,200 |
| Other grade | do. | 60,600 | 32,400 | 58,200 | 32,700 |
| Kyanite and related materials | do. | 40,000 | 13,600 | 39,900 | 13,900 |
| Lime | | 320 r | 57,600 r | 346 | 62,500 |
| Lithium chemicals, Li content: | | | | | |
| Carbonate | metric tons | 170 | 5,630 | 255 | 7,880 |
| Hydroxide | do. | 1,240 | 55,600 | 1,520 | 74,900 |
| Magnesium compounds: | | | | | |
| Chloride, hydroxide and peroxide, sulfate | | XX | 32,400 | XX | 35,100 |
| Magnesite, crude and processed: | | | | | |
| Caustic-calcined magnesia | metric tons | 3,130 | 2,010 | 5,680 | 3,810 |
| Dead-burned and fused magnesia | do. | 20,800 | 15,000 | 24,800 | 16,700 |
| Other magnesia | do. | 14,500 | 16,000 | 13,100 | 13,500 |
| Crude | do. | 770 | 995 | 520 | 764 |
| Mica: | | | | | |
| Scrap and flake: | | | | | |
| Powder | do. | 8,020 | 12,000 | 7,100 | 9,560 |
| Waste | do. | 58 | 41 | 279 | 89 |
| Sheet: | | | | | |
| Unworked | do. | 168 | 575 | 57 | 253 |
| Worked | do. | 865 | 18,700 | 914 | 20,500 |
| Nitrogen, major compounds, N content | | 1,430 r | NA | 1,260 | NA |
| Peat | | 29 | NA | 28 | NA |
| Perlite, crude[e] | metric tons | 45,000 | NA | 40,000 | NA |
| Phosphate rock: | | | | | |
| Diammonium phosphate | | 2,500 | 1,090,000 | 2,110 | 942,000 |
| Elemental phosphorus | metric tons | 20,100 r | 60,800 | 18,800 | 61,800 |
| Monoammonium phosphate | | 2,160 | 1,010,000 | 2,250 | 1,070,000 |
| Phosphoric acid | | 623 | 201,000 | 443 | 163,000 |
| Potash, gross weight: | | | | | |
| Potassium chloride | metrics tons | 73,400 | NA | 27,700 | NA |
| Potassium sulfates, all grades | do. | 210,000 | NA | 350,000 | NA |
| Potassium nitrate | do. | 8,690 | NA | 8,810 | NA |
| Pumice and pumicite | | 14 | NA | 11 | NA |
| Salt | | 935 r | 147,000 r | 841 | 149,000 |
| Sand and gravel: | | | | | |
| Construction: | | | | | |
| Sand | | 79 | 17,800 | 60 | 16,900 |
| Gravel | | 8 | 3,920 | 11 | 4,790 |
| Industrial | | 4,450 | 461,000 | 3,890 | 384,000 |
| Soda ash | | 6,670 | 1,300,000 | 6,390 | 1,320,000 |
| Stone: | | | | | |
| Crushed | | 460 | 50,500 | 436 | 48,000 |
| Dimension | | XX | 70,300 | XX | 75,100 |
| Strontium carbonate, precipitated | kilograms | 174,000 | 186 | 145,000 | 147 |

See footnotes at end of table.

TABLE 7—Continued

U.S. EXPORTS OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value | Quantity | Value |
| Industrial minerals:—Continued | | | | | |
| Sulfur: | | | | | |
| Elemental | | 2,010 r | 315,000 r | 1,850 | 281,000 |
| Sulfuric acid, 100% $H_2SO_4$ | metric tons | 160,000 r | 21,800 | 172,000 | 30,700 |
| Talc, excludes powders-talcum (in package), face, compact | do. | 190,000 r | 55,500 r | 206,000 | 59,400 |
| Vermiculite | | 3 | NA | 2 | NA |
| Wollastonite[e] | metric tons | <10,000 | NA | <10,000 | NA |
| Zeolites[e] | do. | 100–300 r | NA | 100–300 | NA |
| Total | | XX | 29,100,000 r | XX | 26,100,000 |
| Grand total | | XX | 94,900,000 r | XX | 83,300,000 |

[e]Estimated. [r]Revised. do. Ditto. NA Not available. XX Not applicable. -- Zero.

[1]Includes data available through June 2018.

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

[3]Less than ½ unit.

[4]Excludes Puerto Rico.

[5]Not elsewhere classified.

TABLE 8

U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value[3] | Quantity | Value[3] |
| Metals: | | | | | |
| Aluminum: | | | | | |
| Crude and semicrude | metric tons | 4,850,000 | 12,100,000 | 5,080,000 | 12,200,000 |
| Manufactures | do. | 409,000 | 1,340,000 | 400,000 | 1,200,000 |
| Antimony: | | | | | |
| Metal | do. | 6,210 | 49,300 | 5,790 | 44,400 |
| Ore and concentrate, Sb content | do. | 378 r | 4,240 r | 308 | 3,330 |
| Oxide, Sb content | do. | 17,600 | 138,000 | 16,700 | 111,000 |
| Arsenic: | | | | | |
| Metal | do. | 688 | 2,210 | 514 | 1,400 |
| Trioxide | do. | 6,940 | 4,000 | 7,810 | 4,470 |
| Bauxite and alumina: | | | | | |
| Alumina, calcined equivalent | | 1,630 | 727,000 | 1,570 | 705,000 |
| Bauxite: | | | | | |
| Calcined, refractory and other grade | | 601 | 71,600 | 526 | 57,800 |
| Crude and dried | | 10,800 | 406,000 [4] | 10,700 | 387,000 [4] |
| Beryllium, ore, concentrates, oxide, hydroxide, unwrought including powders, waste and scrap, other, beryllium-copper master alloys, beryllium-copper plates, sheets, strip, Be content | kilograms | 68,500 | 18,800 | 66,200 | 19,300 |
| Bismuth, metallic | do. | 2,270,000 | 52,700 | 1,950,000 | 35,500 |
| Cadmium: | | | | | |
| Oxide | do. | 53,600 | 610 | 50,000 | 624 |
| Pigments | do. | 351,000 | 7,770 | 281,000 | 9,260 |
| Sulfide, gross weight | do. | 9,000 | 1,680 | 1,870 | 343 |
| Unwrought metal and powders | do. | 133,000 | 399 | 237,000 | 769 |
| Waste and scrap | do. | -- | -- | 70,500 | 551 |
| Chromium: | | | | | |
| Chromite ore, Cr content | metric tons | 84,900 | 41,000 r | 81,800 | 28,300 |
| Metals and alloys, Cr content: | | | | | |
| Ferroalloys, high-carbon, low-carbon, ferrochromium-silicon | do. | 359,000 | 803,000 r | 228,000 | 517,000 |
| Metal, unwrought powders, waste and scrap, other | do. | 17,500 r | 192,000 | 12,800 | 144,000 |
| Chemicals, gross weight: | | | | | |
| Oxides, hydroxides, trioxide and other | do. | 10,100 r | 35,800 | 10,800 | 35,100 |
| Sulfates | do. | 303 | 321 | 500 | 452 |
| Salts of oxometallic or peroxometallic acids, zinc and lead chromate, sodium dichromate, potassium dichromate, other | do. | 1,040 | 3,990 | 1,010 | 5,130 |
| Carbide | do. | 238 | 5,040 | 109 | 2,550 |
| Pigments and preparations based on chromium, gross weight | do. | 1,250 | 8,560 | 1,560 | 7,640 |
| Cobalt, Co content: | | | | | |
| Metal, unwrought, excluding alloys and waste and scrap, includes cathode and metal powder, may include intermediate products of cobalt metallurgy | do. | 9,000 r | 269,000 r | 9,290 | 267,000 |
| Oxides and hydroxides | do. | 1,730 r | 57,200 r | 1,260 | 40,200 |
| Other forms, includes acetates, carbonates, chlorides, sulfates | do. | 593 | 19,500 | 855 | 26,300 |
| Copper: | | | | | |
| Unmanufactured, does not include unalloyed scrap, Cu content | do. | 622,000 | 4,360,000 | 690,000 | 4,050,000 |
| Semimanufactures | do. | XX | 1,830,000 | XX | 1,350,000 |
| Scrap, unalloyed, Cu content | do. | 31,000 | 166,000 | 28,600 | 130,000 |
| Ferroalloys not listed elsewhere: | | | | | |
| Ferrophosphorus | do. | 8,060 | 4,740 | 6,160 | 3,450 |
| Other | do. | 9,720 r | 32,400 r | 10,100 | 20,900 |
| Gallium: | | | | | |
| Unwrought and powders | kilograms | 53,900 | 13,600 | 28,600 | 7,120 |
| Gallium arsenide wafers, doped and undoped | do. | 391,000 r | 187,000 | 2,690,000 | 245,000 |
| Germanium, metal | do. | 23,700 | 40,300 | 20,100 | 31,400 |

See footnotes at end of table.

TABLE 8—Continued

U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value[3] | Quantity | Value[3] |
| Metals:—Continued | | | | | |
| Gold: | | | | | |
| Ores and concentrates | kilograms | 410 r | 16,200 r | 447 | 18,400 |
| Dore and precipitates | do. | 186,000 | 7,740,000 | 174,000 | 6,710,000 |
| Bullion, refined | do. | 121,000 | 5,000,000 r | 89,800 | 3,380,000 |
| Waste and scrap | do. | 58,100 r | 973,000 r | 60,900 | 618,000 |
| Metal powder | do. | 588 r | 7,140 r | 373 | 10,100 |
| Compounds | do. | 1,810 | 4,230 r | 54,000 | 6,040 |
| Indium, unwrought metal and powders | do. | 123,000 | 80,800 | 140,000 | 55,500 |
| Iron and steel: | | | | | |
| Steel mill products | | 40,200 | NA | 35,200 | NA |
| Fabricated steel products | | 5,160 | NA | 5,740 | NA |
| Cast iron and steel products | | 523 | NA | 540 | NA |
| Stainless steel | metric tons | 1,050,000 | NA | 1,290,000 | NA |
| Iron and steel scrap: | | | | | |
| Ferrous, includes tinplate and terneplate, excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping | | 4,220 r | 1,740,000 r | 3,510 | 955,000 |
| Pig iron, all grades | metric tons | 4,600,000 | 1,850,000 | 4,530,000 | 1,290,000 |
| Direct-reduced iron, steelmaking grade | do. | 2,390,000 | 854,000 | 1,860,000 | 483,000 |
| Ships, boats, and other vessels for scrapping | | (5) | 451 | (5) | 256 |
| Used rails for rerolling and other uses, includes mixed (used plus new) rails | metric tons | 72,900 r | 33,300 | 103,000 | 29,900 |
| Iron ore | | 5,140 | 676,000 | 4,550 | 455,000 |
| Lead: | | | | | |
| Base bullion | metric tons | 1,080 | 1,900 | 321 | 493 |
| Pigs and bars, Pb content | do. | 593,000 | 1,220,000 | 521,000 | 979,000 |
| Pigments and compounds, Pb content | do. | 34,600 | 66,900 | 40,400 | 71,800 |
| Scrap, reclaimed, includes ash and residues, Pb content | do. | 11,400 | 15,200 | 7,450 | 6,320 |
| Wrought, all forms, including wire and powders, gross weight | do. | 1,600 | 6,680 | 1,660 | 6,420 |
| Magnesium: | | | | | |
| Waste and scrap, gross weight | do. | 19,000 | 43,800 | 21,300 | 44,400 |
| Metal, gross weight | do. | 16,400 r | 65,200 r | 14,200 | 55,700 |
| Alloys, Mg content | do. | 10,900 r | 53,000 r | 11,300 | 52,600 |
| Powder, sheets, tubing, ribbons, wire, other forms, Mg content | do. | 8,330 r | 30,700 r | 6,740 | 28,200 |
| Manganese: | | | | | |
| Ores and concentrates with 20% or more manganese, Mn content | do. | 186,000 r | 84,900 r | 216,000 | 92,500 |
| Ferromanganese, all grades, Mn content | do. | 283,000 r | 398,000 r | 228,000 | 343,000 |
| Silicomanganese, Mn content | do. | 309,000 r | 523,000 r | 216,000 | 328,000 |
| Metal, unwrought, other wrought, waste and scrap, gross weight | do. | 39,100 r | 92,800 r | 30,600 | 71,600 |
| Chemicals, gross weight: | | | | | |
| Manganese dioxide | do. | 14,000 r | 28,700 r | 6,820 | 15,100 |
| Potassium permanganate | do. | 1,610 | 4,530 | 908 | 2,370 |
| Mercury: | | | | | |
| Metal | kilograms | 49,500 r | 1,280 | 25,800 | 602 |
| Amalgams of precious metals whether or not chemically defined | do. | 21,500 r | 56,100 r | 21,500 | 45,600 |
| Molybdenum: | | | | | |
| Ores and concentrates, including roasted and other, Mo content | metric tons | 15,800 | 400,000 r | 12,900 | 206,000 |
| Chemicals: | | | | | |
| Oxides and hydroxides, gross weight | do. | 448 | 8,410 | 756 | 10,100 |
| Molybdates, all, Mo content | do. | 669 r | 20,700 | 578 | 12,000 |
| Orange, gross weight | do. | 431 | 3,010 | 609 | 2,580 |
| Ferromolybdenum, Mo content | do. | 5,110 | 147,000 | 1,610 | 36,300 |
| Other, includes powders, unwrought, bars and rods, waste and scrap, wire, other, gross weight | do. | 3,330 | 119,000 | 1,400 | 55,800 |

See footnotes at end of table.

TABLE 8—Continued

U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value[3] | Quantity | Value[3] |
| Metals:—Continued | | | | | |
| Nickel, Ni content: | | | | | |
| Primary, unwrought and chemicals | metric tons | 156,000 | 2,680,000 r | 130,000 | 1,770,000 |
| Secondary, stainless steel scrap and waste and scrap | do. | 39,000 r | 642,000 | 27,100 | 337,000 |
| Wrought, not alloyed, bars, rods, profiles, wire, sheets, strip, foil, tubes, pipes | do. | 727 r | 20,900 | 790 | 19,800 |
| Alloyed, unwrought ingot, bars, rods, profiles, wire, sheets, strip, foil, tubes, pipes, other alloyed articles | do. | 33,500 r | 924,000 r | 32,200 | 557,000 |
| Niobium (columbium) and tantalum, gross quantity: | | | | | |
| Niobium: | | | | | |
| Ores and concentrates | kilograms | 2,000 | 148 | -- | -- |
| Oxide | do. | 1,460,000 | 54,100 r | 1,410,000 | 50,900 |
| Ferroniobium | do. | 12,500,000 | 341,000 | 10,100,000 | 271,000 |
| Unwrought powders | do. | 1,870,000 | 95,800 | 886,000 | 45,400 |
| Tantalum: | | | | | |
| Ores and concentrates | do. | 897,000 r | 71,300 r | 730,000 | 49,300 |
| Unwrought powders | do. | 114,000 | 50,600 | 150,000 | 58,400 |
| Unwrought, alloys and metal | do. | 178,000 | 68,900 | 237,000 | 81,000 |
| Waste and scrap | do. | 625,000 r | 73,000 r | 568,000 | 56,400 |
| Wrought | do. | 43,900 r | 25,900 | 41,300 | 21,500 |
| Platinum-group metals: | | | | | |
| Platinum, grains and nuggets, sponge, other unwrought, other, waste and scrap, coins, Pt content | do. | XX | 3,080,000 | XX | 2,370,000 |
| Palladium, unwrought and other, Pd content | do. | 92,400 | 2,370,000 | 82,500 | 1,880,000 |
| Iridium, unwrought and other forms, Ir content | do. | 1,990 | 33,900 | 1,010 | 17,400 |
| Osmium, unwrought, Os content | do. | 322 | 1,670 | 8 | 59 |
| Ruthenium, unwrought, Ru content | do. | 11,100 | 24,600 | 8,230 | 14,600 |
| Rhodium, unwrought and other forms, Rh content | do. | 11,100 | 408,000 | 10,600 | 336,000 |
| Rare earths, estimated equivalent rare-earth-oxide (REO) content: | | | | | |
| Cerium compounds, including oxides | do. | 1,440,000 | 24,500 | 1,440,000 | 24,400 |
| Other rare-earth compounds: | | | | | |
| Carbonates, lanthanum and other | do. | 597,000 | 5,450 | 540,000 | 2,540 |
| Chlorides | do. | 118,000 r | 6,020 r | 176,000 | 3,550 |
| Oxides, except cerium oxide | do. | 5,160,000 r | 44,800 r | 3,120,000 | 19,000 |
| Unspecified | do. | 3,280,000 | 69,900 | 3,830,000 | 92,200 |
| Yttrium materials and compounds content by weight greater than 19% but less than 85% oxide equivalent | | 108,000 | 25,100 | 50,400 | 11,400 |
| Metals and alloys: | | | | | |
| Ferrocerium and other pyrophoric alloys | do. | 371,000 | 8,350 | 356,000 | 6,310 |
| Cesium, unalloyed | do. | 134,000 | 947 | 140,000 | 1,040 |
| Lanthanum, unalloyed | do. | 60,800 | 668 r | 74,200 | 464 |
| Neodymium, unalloyed | do. | 2,760 | 869 | 5,680 | 417 |
| Other, unalloyed | do. | 30,100 | 772 | 73,700 | 1,050 |
| Other, alloys | do. | 120,000 | 2,350 | 89,100 | 1,380 |
| Rhenium: | | | | | |
| Metal | do. | 17,600 r | 45,100 | 25,400 | 63,600 |
| Ammonium perrhenate | do. | 10,700 r | 18,000 r | 9,130 | 13,900 |
| Selenium and tellurium: | | | | | |
| Selenium, Se content: | | | | | |
| Selenium | do. | 467,000 | 26,200 | 444,000 | 19,300 |
| Dioxide | do. | 7,770 r | 528 | 19,200 | 629 |
| Tellurium, Te content | do. | 109,000 r | 6,230 r | 76,000 | 5,990 |
| Silicon, Si content | | | | | |
| Ferrosilicon | metric tons | 186,000 | 398,000 | 162,000 | 322,000 |
| Metal | do. | 139,000 | 453,000 | 139,000 | 464,000 |

See footnotes at end of table.

TABLE 8—Continued

U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value[3] | Quantity | Value[3] |
| Metals:—Continued | | | | | |
| Silver: | | | | | |
| Ash and residues, ores and concentrates, Ag content | kilograms | 59 | 12 | 253 | 61 |
| Bullion, Ag content | do. | 3,920,000 r | 2,440,000 r | 4,660,000 | 2,410,000 |
| Dore, Ag content | do. | 1,070,000 | 960,000 r | 1,270,000 | 993,000 |
| Metal powder, gross weight | do. | 818,000 r | 334,000 r | 514,000 | 113,000 |
| Nitrate, gross weight | do. | 2,350 r | 546 r | 2,550 | 351 |
| Semimanufactured forms containing 99.5% or more by weight of silver, gross weight | do. | 895,000 | 509,000 | 441,000 | 199,000 |
| Waste and scrap, gross weight | do. | 6,280,000 r | 278,000 r | 5,400,000 | 293,000 |
| Unwrought, other, gross weight | do. | 211,000 r | 104,000 r | 237,000 | 98,200 |
| Thorium and thorium-bearing materials, compounds | do. | 11,000 | 761 | 2,700 | 214 |
| Tin, gross weight: | | | | | |
| Unwrought: | | | | | |
| Refined | do. | 35,600 | 787,000 | 33,600 | 546,000 |
| Alloys | do. | 1,570 | 30,200 | 2,720 | 43,400 |
| Wrought: | | | | | |
| Bars, rods, profiles, wire | do. | 1,890 | 38,200 | 1,220 | 21,300 |
| Foil | do. | 73 | 2,940 | 96 | 3,400 |
| Plates, sheet, strip | do. | 116 | 647 | 90 | 502 |
| Tubes, pipes, tube and pipe fittings | do. | 17 | 100 | 12 | 149 |
| Waste and scrap | do. | 49,700 | 19,400 | 32,700 | 12,300 |
| Flakes and powders | do. | 170 | 4,760 | 238 | 5,400 |
| Oxides | do. | 412 | 8,290 | 417 | 7,340 |
| Tinplate and terneplate | do. | 633,000 r | 695,000 r | 700,000 | 729,000 |
| Titanium: | | | | | |
| Concentrate: | | | | | |
| Ilmenite | do. | 355,000 | 61,100 | 649,000 | 107,000 |
| Rutile, natural and synthetic | do. | 343,000 r | 267,000 | 393,000 | 282,000 |
| Metal: | | | | | |
| Waste and scrap | do. | 19,300 | 100,000 r | 22,000 | 123,000 |
| Unwrought: | | | | | |
| Sponge | do. | 17,700 | 193,000 | 20,700 | 203,000 |
| Ingots | do. | 700 | 15,600 | 517 | 13,500 |
| Powder | do. | 120 | 6,670 | 130 | 8,280 |
| Other | do. | 1,510 | 44,000 | 1,560 | 40,100 |
| Wrought products and castings, includes bar, castings, foil, pipe, plate, profile, rod, sheet, strip, tube, wire, other | do. | 6,260 r | 326,000 r | 6,530 | 321,000 |
| Ferrotitanium and ferrosilicon titanium | do. | 2,210 | 9,290 | 1,730 | 6,260 |
| Pigment, dioxide and oxide | do. | 224,000 | 627,000 | 222,000 | 548,000 |
| Titaniferous iron ore | do. | 138 | 62 | 64,700 | 32,400 |
| Titaniferous slag | do. | 678,000 | 455,000 | 399,000 | 248,000 |
| Tungsten, W content: | | | | | |
| Ammonium paratungstate | do. | 1,780 | 66,800 | 1,270 | 35,500 |
| Ferrotungsten and ferrosilicon tungsten | do. | 454 | 18,800 | 269 | 9,060 |
| Miscellaneous tungsten-bearing materials, metal powders, carbide powder, unwrought, waste and scrap, wrought, oxides, calcium tungstate, other tungstates, other compounds | do. | 6,580 r | 327,000 r | 4,730 | 189,000 |
| Ores and concentrates | do. | 4,080 | 139,000 r | 3,970 | 98,700 |
| Vanadium: | | | | | |
| Aluminum-vanadium master alloy, gross weight | kilograms | 431,000 | 9,820 | 204,000 | 4,520 |
| Ferrovanadium, V content | do. | 3,230,000 | 94,700 r | 2,010,000 | 64,700 |
| Metal, including waste and scrap, gross weight | do. | 161,000 | 3,860 | 182,000 | 3,460 |
| Miscellaneous chemicals, sulfates and vanadates, V content | do. | 215,000 | 4,320 | 186,000 | 2,470 |
| Pentoxide, anhydride, V content | do. | 3,410,000 | 46,300 | 2,970,000 | 32,800 |

See footnotes at end of table.

TABLE 8—Continued

U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value[3] | Quantity | Value[3] |
| Metals:—Continued | | | | | |
| Vanadium:—Continued | | | | | |
| Vanadium-bearing ash and residues from the manufacture of iron and steel, $V_2O_5$ content | kilograms | 6,160,000 | 37,900 | 9,440,000 | 36,700 |
| Other oxides and hydroxides, V content | do. | 104,000 | 1,950 | 93,700 | 1,840 |
| Zinc: | | | | | |
| Compounds, chloride, chromates of zinc or of lead, compounds n.s.p.f.,[6] lithopone, oxide, sulfate, sulfide, gross weight | metric tons | XX | 346,000 | XX | 331,000 |
| Ores and concentrates, Zn content | do. | 2 | 4 | 22 | NA |
| Refined | do. | 805,000 | NA | 771,000 | NA |
| Zirconium and hafnium: | | | | | |
| Hafnium, unwrought, including powders | do. | 21 | 10,800 | 72 | 19,400 |
| Zirconium: | | | | | |
| Ferrozirconium | do. | 131 | 774 | 158 | 668 |
| Ores and concentrates | do. | 50,400 | 60,800 | 31,900 | 37,200 |
| Oxide | do. | 4,240 | NA | 4,200 | NA |
| Unwrought, including powder | do. | 572 r | 26,500 | 954 | 17,400 |
| Waste and scrap | do. | 528 | 52,100 | 361 | 27,800 |
| Total | | XX | 67,100,000 r | XX | 55,500,000 |
| Industrial minerals: | | | | | |
| Abrasives, manufactured: | | | | | |
| Aluminum oxide, crude, ground and refined | metric tons | 198,000 | 172,000 | 164,000 | 136,000 |
| Metallic abrasives | do. | 23,500 | 24,000 | 52,800 | 30,900 |
| Silicon carbide, crude, ground and refined | do. | 130,000 | 118,000 | 139,000 | 114,000 |
| Asbestos: | | | | | |
| Chrysotile and other unspecified type | do. | 406 | 741 | 343 | 612 |
| Products with basis of asbestos, cellulose, or other minerals | | NA | 6,370 | NA | 5,240 |
| Barite: | | | | | |
| Chloride, oxide, hydroxide, peroxide, precipitated carbonate | | XX | 11,300 | XX | 8,550 |
| Crude | metric tons | 971,000 | 135,000 | 521,000 | 76,100 |
| Ground | do. | 1,720,000 | 228,000 | 1,120,000 | 146,000 |
| Other sulfates | do. | 16,400 | 24,100 | 25,500 | 24,500 |
| Boron minerals and compounds: | | | | | |
| Borax | | 152 | 52,400 | 136 | 49,200 |
| Boric acid | metric tons | 56,600 | 37,600 | 39,800 | 25,800 |
| Colemanite | | 45 | 14,500 | 35 | 11,900 |
| Ulexite | | 34 | 2,840 | 70 | 4,620 |
| Bromine: | | | | | |
| Compounds, Br content | metric tons | 55,600 r | 112,000 r | 55,500 | 117,000 |
| Elemental | do. | 2,050 | 6,160 | 2,530 | 7,270 |
| Cement, hydraulic and clinker[7] | | 8,390 r | 619,000 r | 11,400 | 814,000 |
| Clay: | | | | | |
| China clay or kaolin | | 518 | 54,400 | 426 | 43,700 |
| Fire clay | | 6 | 2,510 | 40 | 6,900 |
| Ball clay | | 1 | 173 | 2 | 457 |
| Bentonite | | 22 | 25,600 | 16 | 9,350 |
| Fuller's earth | | 4 | 183 | 2 | 101 |
| Chamotte or dina's earth | | (5) | 124 | (5) | 163 |
| Artificially activated clay and earth | | 26 | 14,000 | 24 | 13,600 |
| Diamond, industrial: | | | | | |
| Diamond stones, natural industrial and miners', natural and synthetic | thousand carats | 2,160 | 31,200 | 1,310 | 22,900 |
| Powder, dust and grit, natural and synthetic | do. | 682,000 | 76,700 | 275,000 | 54,600 |

See footnotes at end of table.

TABLE 8—Continued

U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value[3] | Quantity | Value[3] |
| Industrial minerals:—Continued | | | | | |
| Feldspar and nepheline syenite: | | | | | |
| Feldspar | metric tons | 7,910 | 3,120 | 120,000 | 7,090 |
| Nepheline syenite | do. | 503,000 | 64,000 r | 449,000 | 67,600 |
| Fluorspar: | | | | | |
| Aluminum fluoride | do. | 38,400 | 50,700 | 32,400 | 41,600 |
| Cryolite | do. | 16,200 | 13,800 | 18,900 | 14,700 |
| Fluorspar | do. | 414,000 | 105,000 | 376,000 | 107,000 |
| Hydrofluoric acid | do. | 125,000 | 213,000 | 120,000 | 196,000 |
| Garnet, industrial | do. | 213,000 | 44,600 | 238,000 | 53,800 |
| Gemstones | thousand carats | 3,230,000 r | 26,400,000 | 2,600,000 | 25,100,000 |
| Graphite: | | | | | |
| Natural | metric tons | 69,600 r | 72,300 | 46,700 | 58,900 |
| Synthetic | do. | 60,700 | 135,000 r | 80,600 | 128,000 |
| Electric furnace electrodes | do. | 84,000 r | 285,000 r | 71,200 | 231,000 |
| Gypsum: | | | | | |
| Crude | | 3,720 | 56,800 | 4,030 | 54,100 |
| Plasters | | 20 | 7,620 | 21 | 7,210 |
| Boards | | 362 | 84,000 | 348 | 86,100 |
| Other | | XX | 37,300 | XX | 37,000 |
| Helium, Grade-A | million cubic meters | 7.4 | NA | 15.7 | NA |
| Iodine: | | | | | |
| Crude | metric tons | 5,360 | 198,000 | 5,630 | 156,000 |
| Potassium iodide | do. | 283 | 5,200 | 262 | 4,720 |
| Iron oxide pigments: | | | | | |
| Natural | do. | 3,510 | 2,780 | 3,600 | 2,660 |
| Synthetic | do. | 171,000 | 205,000 | 172,000 | 206,000 |
| Kyanite and related materials | do. | 4,020 | 1,550 | 11,500 | 3,680 |
| Lime | | 414 | 65,200 r, 4 | 391 | 64,600 4 |
| Lithium chemicals, Li content: | | | | | |
| Carbonate | metric tons | 1,800 | 42,300 r | 2,420 | 57,900 |
| Hydroxide | do. | 316 | 12,200 | 324 | 13,600 |
| Magnesium compounds: | | | | | |
| Compounds, chlorides, hydroxide, peroxide, sulfates | do. | XX | 65,600 | XX | 60,100 |
| Magnesite, crude and processed: | | | | | |
| Caustic-calcined magnesia | do. | 151,000 | 48,100 | 183,000 | 54,100 |
| Dead-burned and fused magnesia | do. | 241,000 | 148,000 | 259,000 | 139,000 |
| Other magnesia | do. | 35,600 | 23,200 | 51,000 | 29,800 |
| Crude | do. | 18,400 | 3,790 | 77,900 | 10,400 |
| Mica: | | | | | |
| Scrap and flake: | | | | | |
| Powder | do. | 27,900 | 19,400 | 28,100 | 17,600 |
| Waste | do. | 4,850 | 2,700 | 5,170 | 2,860 |
| Sheet: | | | | | |
| Unworked | do. | 109 | 175 | 112 | 437 |
| Worked | do. | 2,360 | 19,900 | 2,030 | 16,500 |
| Nitrogen, major compounds, N content | | 7,260 r | 6,100,000 r | 9,060 | 6,750,000 |
| Peat | metric tons | 994,000 r | 270,000 r | 1,150,000 | 312,000 |
| Perlite, processed crude | do. | 141,000 | NA | 155,000 | NA |
| Phosphate rock and phosphatic materials: | | | | | |
| Phosphate rock: | | | | | |
| Unground | | 2,120 | 193,000 4 | 1,520 | 150,000 4 |
| Ground | | 268 | 45,400 4 | 443 | 75,700 4 |
| Dicalcium phosphate | | 11 | 13,800 4 | 11 | 11,900 4 |

See footnotes at end of table.

TABLE 8—Continued

U.S. IMPORTS FOR CONSUMPTION OF PRINCIPAL MINERALS AND PRODUCTS, EXCLUDING MINERAL FUELS[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

| Commodity | | 2014 | | 2015 | |
|---|---|---|---|---|---|
| | | Quantity | Value[3] | Quantity | Value[3] |
| Industrial minerals:—Continued | | | | | |
| Phosphate rock and phosphatic materials:—Continued | | | | | |
| Elemental phosphorus | | 16 | 59,400 [4] | 14 | 51,000 [4] |
| Normal superphosphate | | 3 | 1,070 [4] | -- | -- [4] |
| Triple superphosphate | | 432 | 180,000 [4] | 235 | 92,800 [4] |
| Diammonium phosphate | | 404 | 198,000 [4] | 621 | 295,000 [4] |
| Monoammonium phosphate | | 959 | 467,000 [4] | 582 | 291,000 [4] |
| Fertilizer containing nitrates and phosphates | | 21 | 11,900 [4] | 87 | 43,100 [4] |
| Phosphoric acid | | 1 | 263 [4] | 1 | 159 [4] |
| Potash, chloride, sulfate, nitrate, sodium nitrate mixtures, gross weight | | 8,200 | 2,390,000 [r] | 8,250 | 2,720,000 |
| Pumice: | | | | | |
| Crude or unmanufactured | metric tons | 60,000 | 1,380 | 64,000 | 1,860 |
| Wholly or partially manufactured | do. | 161 [r] | 432 [r] | 216 | 600 |
| Salt | | 20,200 [r] | 589,000 [r] | 21,600 | 578,000 |
| Sand and gravel: | | | | | |
| Construction | | 3,930 [r] | 46,100 [r, 4] | 3,890 | 61,400 [4] |
| Industrial | | 244 | 20,400 [4] | 290 | 20,200 [4] |
| Soda ash | | 39 | 6,900 [r] | 40 | 6,760 |
| Stone: | | | | | |
| Crushed, chips, calcium carbonate fines, excludes precipitated carbonates | | 19,900 | 251,000 [4] | 21,900 | 266,000 [4] |
| Dimension | | XX | 2,240,000 | XX | 2,350,000 |
| Strontium: | | | | | |
| Carbonate | kilograms | 10,800,000 | 9,020 | 9,710,000 | 8,030 |
| Celestite | do. | 55,100,000 | 2,760 | 55,800,000 | 2,850 |
| Metal | do. | 88,500 | 661 | 141,000 | 1,080 |
| Nitrate | do. | 2,720,000 | 3,570 | 2,720,000 | 3,540 |
| Oxide, hydroxide, peroxide | do. | 225 | 13 | 103,000 | 172 |
| Sulfur: | | | | | |
| Elemental[8] | | 2,370 [e] | 134,000 | 2,240 [e] | 136,000 |
| Sulfuric acid, 100% $H_2SO_4$ | metric tons | 3,070,000 [r] | 190,000 [r] | 3,540,000 | 208,000 |
| Talc, unmanufactured | do. | 308,000 [r] | 102,000 | 322,000 | 109,000 |
| Vermiculite | | 43 [r] | NA | 21 | NA |
| Wollastonite[e] | metric tons | ≤4,000 | NA | ≤4,000 | NA |
| Zeolites[e] | do. | <25 | NA | <50 | NA |
| Total | | XX | 43,700,000 [r] | XX | 43,300,000 |
| Grand total | | XX | 111,000,000 [r] | XX | 98,800,000 |

[e]Estimated. [r]Revised. do. Ditto. NA Not available. XX Not applicable. -- Zero.

[1]Includes data available through June 2018.

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

[3]Customs value unless otherwise specified.

[4]Cost, insurance, and freight value.

[5]Less than ½ unit.

[6]Not specifically provided for.

[7]Excludes Puerto Rico. Data for 2015 adjusted by the U.S. Geological Survey.

[8]General imports.

TABLE 9

WORLD AND U.S. PRODUCTION OF SELECTED NONFUEL MINERAL COMMODITIES[1]

(Thousand metric tons unless otherwise specified)

| Commodity | | World total | | | | | United States | |
|---|---|---|---|---|---|---|---|---|
| | | 2011 | 2012 | 2013 | 2014 | 2015 | 2015 | Percent of world total |
| Metals: | | | | | | | | |
| Alumina, calcined equivalent[2] | | 93,100 r | 98,100 r | 104,000 r | 107,000 r | 120,000 | 4,550 | 3.80 |
| Aluminum, primary[3] | | 46,800 r | 49,200 r | 51,900 r | 54,000 r | 57,500 e | 1,590 | 2.76 |
| Antimony, Sb content | metric tons | 187,000 r | 179,000 r | 159,000 r | 155,000 r | 141,000 e | -- | -- |
| Arsenic trioxide[e, 4] | do. | 37,600 r | 39,100 r | 38,200 r | 36,400 r | 36,500 | -- | -- |
| Bauxite[5] | | 254,000 r | 257,000 r | 296,000 r | 259,000 r | 299,000 e | W | NA |
| Beryl, gross weight[6] | metric tons | 6,540 | 6,610 r | 6,600 r | 7,530 r | 5,740 e | 5,100 | 88.9 |
| Bismuth, refinery[e] | do. | 16,700 r | 15,600 r | 17,100 r | 17,100 r | 16,400 | -- | -- |
| Cadmium, refinery[e, 5, 7] | do. | 21,100 r | 22,300 r | 22,700 r | 22,700 r | 23,200 | W | NA |
| Chromite, marketable output, gross weight | | 26,900 r | 26,700 r | 30,100 r | 30,600 r | 28,000 e | -- | -- |
| Cobalt, Co content: | | | | | | | | |
| Mine[e, 8] | metric tons | 111,000 | 105,000 r | 114,000 r | 122,000 r | 126,000 | 760 | 0.60 |
| Refinery[9] | do. | 82,400 r | 78,100 r | 86,700 r | 92,700 r | 97,400 | -- | -- |
| Copper: | | | | | | | | |
| Mine, recoverable, Cu content[10] | | 16,100 r | 16,900 r | 18,300 r | 18,400 r | 19,100 | 1,380 | 7.23 |
| Smelter, gross weight[11] | | 15,900 | 16,100 r | 17,100 | 17,900 r | 18,500 | 527 | 2.84 |
| Refinery[12] | | 19,600 r | 20,200 r | 21,100 r | 22,600 r | 23,000 | 1,140 | 4.97 |
| Gold, mine | metric tons | 2,680 r | 2,750 r | 2,920 r | 3,020 r | 3,100 e | 214 | 6.91 |
| Indium, refinery[e] | kilograms | 720,000 | 784,000 | 819,000 | 881,000 | 759,000 | -- | -- |
| Iron ore[13] | | 2,030,000 r | 2,080,000 r | 2,230,000 r | 2,290,000 r | 2,290,000 e | 46,100 | 2.02 |
| Iron and steel: | | | | | | | | |
| Direct-reduced iron[14] | | 74,200 r | 73,000 r | 75,000 r | 74,600 r | 72,600 | 1,100 | 1.51 |
| Pig iron[15] | | 1,100,000 r | 1,120,000 r | 1,170,000 r | 1,190,000 r | 1,160,000 | 25,400 | 2.20 |
| Raw steel[15, 16] | | 1,540,000 r | 1,570,000 r | 1,650,000 r | 1,670,000 r | 1,620,000 | 78,800 | 4.87 |
| Lead: | | | | | | | | |
| Mine, concentrates, Pb content | | 4,750 r | 5,080 r | 5,430 r | 5,440 r | 4,950 e | 367 [17] | 7.41 |
| Refinery[18] | | 10,300 r | 10,400 r | 10,700 r | 10,600 r | 10,400 e | 1,050 | 10.2 |
| Magnesium, primary[e, 5] | metric tons | 806,000 r | 840,000 r | 909,000 r | 1,000,000 r | 972,000 | W | NA |
| Manganese ore, gross weight[19] | | 45,700 r | 46,400 r | 54,600 r | 58,000 r | 51,800 | -- | -- |
| Mercury, mine[5] | metric tons | 1,970 r | 1,830 r | 2,320 r | 2,750 r | 2,470 | NA | NA |
| Molybdenum, mine, Mo content | do. | 264,000 r | 256,000 r | 258,000 r | 268,000 r | 235,000 e | 47,400 | 20.1 |
| Nickel, Ni content: | | | | | | | | |
| Mine, recoverable | do. | 2,340,000 r | 2,570,000 r | 2,790,000 r | 2,350,000 r | 2,280,000 | 27,200 [20] | 1.19 |
| Plant | do. | 1,630,000 r | 1,810,000 r | 1,980,000 r | 2,000,000 r | 1,930,000 | -- | -- |
| Niobium (columbium) concentrates, Nb content | do. | 50,200 r | 62,700 r | 57,100 r | 68,600 r | 64,300 e | -- | -- |
| Platinum-group metals: | | | | | | | | |
| Palladium | kilograms | 216,000 r | 206,000 r | 204,000 r | 193,000 r | 215,000 | 12,500 [21] | 5.82 |
| Platinum | do. | 202,000 r | 181,000 r | 191,000 r | 146,000 r | 189,000 | 3,670 [21] | 1.94 |
| Other[e] | do. | 72,700 | 66,000 r | 66,900 r | 51,600 r | 69,300 | -- | -- |
| Rare earths, rare-earth-oxide (REO) equivalent[e] | metric tons | 104,000 | 106,000 r | 107,000 | 125,000 r | 130,000 | 5,900 | 4.55 |
| Rhenium[e] | kilograms | 46,700 r | 50,900 r | 46,600 r | 47,000 r | 49,400 | 7,900 [22] | 16.0 |
| Selenium, refinery, Se content[e, 5] | metric tons | 2,180 r | 2,220 r | 2,170 r | 2,250 r | 2,200 | W | NA |
| Silver, mine[23] | do. | 23,600 r | 24,600 r | 25,600 r | 27,000 r | 27,600 e | 1,090 | 3.96 |
| Tantalum concentrates, Ta content | kilograms | 916,000 r | 1,010,000 r | 1,290,000 r | 1,440,000 r | 1,210,000 e | -- | -- |
| Tin, Sn content: | | | | | | | | |
| Mine[23] | metric tons | 315,000 r | 249,000 r | 260,000 r | 285,000 r | 289,000 | -- | -- |
| Smelter[24] | do. | 344,000 | 338,000 | 336,000 r | 392,000 r, e | 350,000 e | 10,500 e | 3.00 |

See footnotes at end of table.

TABLE 9—Continued
WORLD AND U.S. PRODUCTION OF SELECTED NONFUEL MINERAL COMMODITIES[1]

(Thousand metric tons unless otherwise specified)

| Commodity | | World total | | | | | United States | |
|---|---|---|---|---|---|---|---|---|
| | | 2011 | 2012 | 2013 | 2014 | 2015 | 2015 | Percent of world total |
| Metals:—Continued | | | | | | | | |
| Titanium mineral concentrates: | | | | | | | | |
| Ilmenite and leucoxene | | 7,330 r | 7,340 r | 7,690 r | 7,400 r | 7,270 e | 300 e, 25 | 4.13 |
| Rutile[5] | metric tons | 800,000 r | 791,000 r | 631,000 r | 553,000 r | 850,000 e | W | NA |
| Tungsten, W content[5] | do. | 73,900 | 76,900 r | 83,800 r | 87,000 r | 89,400 e | NA | NA |
| Vanadium, V content[26] | do. | 71,500 | 74,900 | 80,400 | 82,600 r | 77,800 e | -- | -- |
| Zinc: | | | | | | | | |
| Mine, Zn content of concentrate and direct shipping ore | | 12,500 r | 12,900 r | 13,100 r | 13,300 r | 12,800 e | 825 17 | 6.45 |
| Smelter | | 13,100 r | 12,600 r | 13,000 r | 13,500 r | 13,900 | 172 e | 1.24 |
| Zirconium mineral concentrates, gross weight | | 1,660 r, 5 | 1,420 r, 5 | 1,070 r, 5 | 1,620 r, 5 | 1,520 e | 80 27 | 5.25 |
| Industrial minerals: | | | | | | | | |
| Asbestos, marketable fiber | | 2,000 r | 2,020 | 2,050 | 2,030 r | 2,030 e | -- | -- |
| Barite[e] | | 8,370 r | 9,220 r | 8,240 r | 8,390 r | 7,410 | 425 28, 29 | 5.74 |
| Boron minerals[5] | | 8,150 r | 5,910 r | 6,030 r | 9,400 r | 9,380 e | W | NA |
| Bromine[e, 5] | metric tons | 380,000 r | 357,000 r | 389,000 r | 409,000 r | 342,000 | W | NA |
| Celestite | do. | 379,000 r | 376,000 r | 344,000 r | 350,000 r | 354,000 e | -- | -- |
| Cement, hydraulic[e] | | 3,630,000 r | 3,820,000 r | 4,070,000 r | 4,190,000 r | 4,100,000 | 84,940 28, 30, 31 | 2.07 |
| Clay: | | | | | | | | |
| Bentonite | | 15,400 r | 17,400 r | 16,700 r | 18,200 r | 19,700 e | 4,040 | 20.5 |
| Fuller's earth | | 3,170 r | 3,350 r | 3,480 r | 3,400 r | 3,430 e | 1,930 32 | 56.3 |
| Kaolin | | 32,300 r | 31,600 r | 33,000 r | 35,400 r | 35,600 e | 5,990 | 16.8 |
| Diamond, natural[33] | thousand carats | 123,000 | 128,000 | 130,000 | 125,000 | 127,000 | -- | -- |
| Diatomite[e, 34] | | 2,350 r | 2,550 r | 2,640 r | 2,740 r | 2,670 | 832 28, 29 | 31.2 |
| Feldspar | | 21,200 r | 20,700 r | 22,000 r | 23,000 r | 22,300 e | 520 e, 35 | 2.33 |
| Fluorspar[36] | | 9,080 r | 6,870 r | 6,330 r | 6,720 r | 6,670 e | -- | -- |
| Graphite, natural[e] | | 1,180 | 1,210 | 1,150 | 1,160 | 1,160 | -- | -- |
| Gypsum | | 241,000 r | 243,000 r | 252,000 r | 261,000 r | 261,000 e | 15,200 37 | 5.83 |
| Iodine, crude[e, 5] | metric tons | 26,200 | 27,800 | 30,800 | 29,600 r | 30,600 | W | NA |
| Kyanite and related minerals[e] | do. | 357,000 | 333,000 | 370,000 r | 382,000 r | 408,000 | 108,000 38 | 26.5 |
| Lime[39] | | 330,000 r, 40 | 340,000 40 | 350,000 r, 40 | 350,000 r, 40 | 350,000 r, 40 | 18,300 30 | 5.23 |
| Magnesite[e, 5, 41] | | 27,700 r | 24,200 r | 25,400 r | 29,400 r | 27,700 | W | NA |
| Mica | metric tons | 1,100,000 r | 1,080,000 r | 1,130,000 r | 1,140,000 r, e | 1,120,000 e | 32,600 42 | 2.90 |
| Monazite concentrates, gross weight | do. | 9,320 r | 3,890 r | 4,250 r | 6,570 r | 6,860 | -- | -- |
| Nitrogen, N content of ammonia[e] | | 138,000 r | 138,000 r | 144,000 r | 140,000 r | 145,000 | 9,590 28, 43 | 6.62 |
| Peat | | 30,000 r | 27,500 r | 30,900 r | 28,200 r | 27,500 e | 455 44 | 1.65 |
| Perlite, processed ore | metric tons | 4,590,000 r | 4,400,000 r | 4,340,000 r | 4,330,000 r | 4,380,000 e | 459,000 29 | 10.5 |
| Phosphate rock, gross weight | | 200,000 r | 216,000 r | 232,000 r | 237,000 r | 242,000 e | 27,400 29 | 11.3 |
| Potash, marketable, $K_2O$ equivalent | | 35,800 r | 32,800 r | 35,600 r | 40,800 r | 40,700 e | 740 40 | 1.82 |
| Pumice and related materials | | 18,400 r | 15,300 r | 15,100 r | 16,900 r | 16,900 e | 310 29 | 1.83 |
| Salt, all forms | | 273,000 r | 261,000 r | 273,000 r | 273,000 r | 270,000 e | 45,100 30, 45 | 16.7 |
| Sand and gravel, industrial, silica | | 126,000 | 130,000 | 147,000 | 195,000 r, e | 189,000 e | 103,000 29 | 54.6 |
| Soda ash, natural and manufactured[e] | | 50,000 r | 51,700 r | 51,300 r | 52,700 r | 53,400 | 11,600 28, 46 | 21.7 |
| Sulfur, all forms[47] | | 69,900 r | 69,800 r | 68,000 r | 69,100 r | 69,500 | 9,540 | 13.7 |
| Talc and pyrophyllite | | 7,780 r | 7,830 r | 8,550 r | 8,370 r | 8,430 e | 687 48 | 8.15 |
| Vermiculite | metric tons | 394,000 r | 370,000 r | 378,000 r | 395,000 r | 410,000 e | 100,000 e, 29, 49 | 24.4 |

[e]Estimated. [r]Revised. do. Ditto. NA Not available. W Withheld to avoid disclosing company proprietary data; not included in "World total." -- Zero.

[1]Data are rounded to no more than three significant digits, unless otherwise specified.

[2]Calcined alumina or the total of calcined alumina plus the calcined equivalent of hydrate.

[3]Primary aluminum is defined as "The weight of liquid aluminum as tapped from pots, excluding the weight of any alloying materials as well as that of any metal produced from either returned scrap of remelted material."

[4]Includes calculated arsenic trioxide equivalent of output of elemental arsenic compounds other than arsenic trioxide; inclusion of such materials would not duplicate reported arsenic trioxide production.

[5]"World totals" do not include U.S. production.

TABLE 9—Continued
WORLD AND U.S. PRODUCTION OF SELECTED NONFUEL MINERAL COMMODITIES[1]

(Thousand metric tons unless otherwise specified)

[6]Beryl ore for the production of beryllium and excludes gem-quality beryl. U.S. production is mine shipments; includes bertrandite ore, calculated as equivalent to beryl containing 11% beryllium oxide.
[7]Includes unwrought production from ores, concentrates, flue dusts, and other materials of both domestic and imported origin.
[8]Recoverable cobalt content of ores, concentrates, or intermediate products from cobalt, copper, nickel, platinum, or zinc operations. U.S. production is cobalt content of concentrates.
[9]Cobalt refined from ores, concentrates, or intermediate products and does not include production of downstream products from refined cobalt.
[10]Copper content of concentrates produced (includes cement copper). U.S. production includes concentrates and electrowon leaching.
[11]Includes total production of smelted copper metal, including low-grade cathode produced by electrowinning methods. The smelter feed may be derived from ore, concentrates, copper precipitate or matte (primary), and (or) scrap (secondary). U.S. production is primary only.
[12]Includes total production of refined copper whether produced by pyrometallurgical or electrolytic refining methods and whether derived from primary unrefined copper or from scrap. Copper cathode derived from electrowinning processing is also included. U.S. production is secondary only.
[13]Production of usable ore represents total for all iron ore products used in steelmaking.
[14]Sources: Midrex Technologies, Inc., governments, and companies.
[15]Source: American Iron and Steel Institute (AISI).
[16]Raw steel is defined by AISI as steel formed in solid state after melting, suitable for further processing or sale.
[17]Total content of ores and concentrates. Table 1 reports recoverable content.
[18]Total output of refined lead whether derived from ores and concentrates (primary) or scrap (secondary), and include the lead content of antimonial lead but does not include, to the extent possible, simple remelting of scrap.
[19]Mostly concentrates or comparable shipping product.
[20]Recoverable content of nickel sulfide concentrates.
[21]Excludes that produced as a byproduct from gold-copper ores.
[22]Based on 80% recovery of estimated rhenium contained in molybdenum disulfide concentrates.
[23]Recoverable content of ores and concentrates.
[24]Includes primary production (from ores and concentrates) and secondary production (recovered from scrap). U.S. production is secondary only.
[25]Includes U.S. production, rounded to one significant digit, of ilmenite, leucoxene, and rutile to avoid disclosing company proprietary data.
[26]Production from ores, concentrates, and slag.
[27]Rounded to no more than one significant digit.
[28]Reported figure.
[29]Sold or used by producers and (or) marketable production.
[30]Includes Puerto Rico.
[31]Portland and masonry cements only. Includes a small (less than 0.3% per year) component of double-counting where portland cement (not clinker) is consumed to make masonry cement; the precise amount of double-counting cannot be determined because of the involvement of portland cement stockpiles. U.S. data are unrounded.
[32]Does not include attapulgite.
[33]Includes gem and industrial. Source: Kimberley Process Certification Scheme.
[34]Purity and moisture content are generally not reported or estimated.
[35]Includes hand-cobbed feldspar, flotation-concentrate feldspar, feldspar in feldspar-quartz mixtures, and aplite; predominantly in the production of ceramics and glass. Rounded to two significant digits.
[36]Includes production by grade (acid, ceramic, and metallurgical).
[37]Does not include byproduct gypsum.
[38]Does not include synthetic mullite. Estimated using several prior-years' output as reported to the Virginia Department of Mines.
[39]Quicklime, hydrated lime, and dead-burned dolomite.
[40]Rounded to no more than two significant digits.
[41]Crude salable magnesite.
[42]Includes scrap and flake. Does not include, if any, U.S. production of low-quality sericite and sheet mica.
[43]Synthetic anhydrous ammonia; does not include coke oven byproduct ammonia.
[44]Production. Table 1 reports sales by producers.
[45]Includes brine, rock, solar, and vacuum and open pans.
[46]U.S. production is natural only.
[47]Byproduct. Includes Frasch, metallurgy, native, natural gas, oil sands, petroleum, and pyrite.
[48]Does not include pyrophyllite.
[49]Rounded to the nearest 100,000 metric tons.