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**INDIAN BUREAU OF MINES**  
**MINERAL ECONOMICS DIVISION**  
**WORLD MINERAL INTELLIGENCE UNIT**

**WORLD MINERAL PRODUCTION**  
**2015-2017**

(Source:- World Mineral Production, 2013-17,  
British Geological Survey)

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**World Production of Alumina**  
**(By principal Countries)**

(In '000 tonnes of Al<sub>2</sub>O<sub>3</sub> content)

| <b>Country</b>       | <b>2015</b> | <b>2016</b> | <b>2017</b>       |
|----------------------|-------------|-------------|-------------------|
| Australia            | 20097       | 20681       | 20486             |
| Brazil               | 10452       | 10886       | 11014             |
| Canada               | 1561        | 1566        | 1564              |
| China                | 58978       | 60906       | 69017             |
| Germany <sup>e</sup> | 1000        | 1000        | 1000              |
| India                | 4172        | 4576        | 4674              |
| Ireland, Republic of | 1898        | 1898        | 1880              |
| Jamaica              | 1865        | 1865        | 1782              |
| Kazakhstan           | 1448        | 1746        | 1771              |
| Russia               | 2593        | 2682        | 2822              |
| Spain                | 1633        | 1579        | 1588              |
| USA                  | 4234        | 2360        | 1500 <sup>e</sup> |
| Ukraine              | 1481        | 1510        | 1676              |
| Other countries      | 4853        | 5149        | 5756              |

e:- estimated

**World Production of Aluminium ( Primary )  
(By Principal Countries)**

| Country         | (In '000 tonnes) |       |       |
|-----------------|------------------|-------|-------|
|                 | 2015             | 2016  | 2017  |
| Australia       | 1646             | 1635  | 1487  |
| Bahrain         | 961              | 971   | 981   |
| Brazil          | 772              | 793   | 802   |
| Canada          | 2880             | 3209  | 3212  |
| China           | 31518            | 32698 | 32273 |
| Iceland         | 725              | 700   | 760   |
| India           | 2355             | 2897  | 3401  |
| Norway          | 1224             | 1247  | 1253  |
| Russia          | 3529             | 3561  | 3584  |
| Saudi Arabia    | 839              | 871   | 916   |
| South Africa    | 695              | 701   | 716   |
| USA             | 1587             | 818   | 741   |
| UAE             | 2397             | 2471  | 2500  |
| Other countries | 6738             | 7053  | 7480  |

**World Mine Production of Antimony**  
**(By Principal Countries)**

(In tonnes of metal content)

| Country                 | 2015   | 2016           | 2017                |
|-------------------------|--------|----------------|---------------------|
| Australia               | 3926   | 5004           | 4294                |
| Bolivia                 | 3843   | 2669           | 2844                |
| Myanmar                 | 5777   | 2780           | 3060                |
| Canada                  | 1      | 0              | 0                   |
| China                   | 120732 | 107535         | 101000 <sup>e</sup> |
| Ecuador                 | 0      | 0              | 579                 |
| Guatemala               | 0      | 25             | 0                   |
| Honduras                | 14     | 0              | 0                   |
| Iran                    | 1020   | 1765           | 1800                |
| Kazakhstan <sup>e</sup> | 700    | 900            | 200                 |
| Kyrgyzstan <sup>e</sup> | 1200   | 1880           | 1100                |
| Laos                    | 1166   | 242            | 320                 |
| Mexico                  | 90     | 166            | 240                 |
| Pakistan                | 114    | 21             | 15                  |
| Russia                  | 7420   | 6620           | 6120                |
| South Africa            | 400    | 0 <sup>e</sup> | 0 <sup>e</sup>      |
| Tajikistan <sup>e</sup> | 6800   | 12700          | 12500               |
| Thailand <sup>e</sup>   | 700    | 32             | 0                   |
| Turkey                  | 1917   | 2700           | 4750                |
| Vietnam                 | 219    | 229            | 243                 |

e:- estimated

**Mine Production of Asbestos**  
**(By Principal Countries)**

(In '000 tonnes)

| Country            | 2015 | 2016 | 2017 |
|--------------------|------|------|------|
| Brazil             | 232  | 200  | 200  |
| China <sup>e</sup> | 210  | 200  | 200  |
| Colombia           | 13   | 10   | 4    |
| Kazakhstan         | 180  | 193  | 193  |
| Russia             | 650  | 692  | 710  |

e :- Estimated

**World Production of Barites**  
**(By Principal Countries)**

(In '000 tonnes)

| Country             | 2015             | 2016 | 2017             |
|---------------------|------------------|------|------------------|
| Algeria             | 44               | 52   | 52 <sup>e</sup>  |
| Bolivia             | 47               | 17   | 16 <sup>e</sup>  |
| Brazil <sup>e</sup> | 50               | 40   | 40               |
| Bulgaria            | 60               | 70   | 80               |
| Canada              | 32               | 32   | 32               |
| China               | 3500             | 3100 | 3600             |
| Germany             | 45               | 49   | 34               |
| India <sup>e</sup>  | 700              | 1300 | 1600             |
| Iran                | 340              | 400  | 400 <sup>e</sup> |
| Kazakhstan          | 210              | 190  | 160              |
| Laos                | 92               | 82   | 77               |
| Mexico              | 266              | 157  | 360              |
| Morocco             | 1212             | 677  | 818              |
| Pakistan            | 119              | 158  | 92               |
| Russia              | 361              | 434  | 221              |
| Slovakia            | 20               | 25   | 16               |
| Thailand            | 171              | 212  | 164              |
| Turkey              | 310 <sup>e</sup> | 321  | 292              |
| USA                 | 439              | 240  | 300              |
| UK <sup>e</sup>     | 50               | 56   | 55               |
| Vietnam             | 80               | 50   | 50               |
| Other countries     | 146              | 97   | 87               |

e:-estimated



**Mine Production of Bauxite**  
**(By Principal Countries)**

(In '000 tonnes)

| Country                | 2015  | 2016  | 2017               |
|------------------------|-------|-------|--------------------|
| Australia              | 80910 | 83517 | 89421              |
| Brazil                 | 37064 | 37700 | 38123              |
| China                  | 60788 | 66158 | 65000 <sup>c</sup> |
| Ghana                  | 1015  | 1144  | 1477               |
| Greece                 | 1831  | 1880  | 1927               |
| Guinea                 | 20692 | 26917 | 47009              |
| Guyana                 | 1526  | 1479  | 1459               |
| India                  | 28124 | 24745 | 22313              |
| Indonesia <sup>e</sup> | 611   | 1485  | 3700               |
| Jamaica                | 9629  | 8540  | 8245               |
| Kazakhstan             | 4683  | 4801  | 4843               |
| Malaysia <sup>e</sup>  | 27700 | 6670  | 810                |
| Russia                 | 5398  | 5432  | 5523               |
| Saudi Arabia           | 2174  | 3843  | 3708               |
| Suriname               | 1865  | 0     | 0                  |
| Turkey                 | 1050  | 989   | 1001               |
| Vietnam <sup>e</sup>   | 1123  | 1523  | 2672               |
| Other countries        | 6734  | 4517  | 6532               |

e:- estimated

**World Production of Bentonite  
(By Principal Countries)**

| Country              | (In '000 tonnes) |                   |                   |
|----------------------|------------------|-------------------|-------------------|
|                      | 2015             | 2016              | 2017              |
| China <sup>e</sup>   | 5600             | 5600              | 5600              |
| USA                  | 4010             | 3600 <sup>e</sup> | 3700 <sup>e</sup> |
| Turkey               | 3135             | 1745              | 1482              |
| India <sup>e</sup>   | 1457             | 1745              | 1700              |
| Greece               | 1123             | 883               | 1088              |
| Brazil               | 518              | 500 <sup>e</sup>  | 500 <sup>e</sup>  |
| Russia               | 498              | 589               | 590 <sup>e</sup>  |
| Japan <sup>e</sup>   | 420              | 420               | 420               |
| Iran                 | 419              | 842               | 800 <sup>e</sup>  |
| Germany              | 393              | 393               | 416               |
| Czech Republic       | 369              | 374               | 254               |
| Mexico               | 294              | 109               | 148               |
| Ukraine <sup>e</sup> | 219              | 219               | 219               |
| Slovakia             | 205              | 158               | 226               |
| Argentina            | 200 <sup>e</sup> | 194               | 200 <sup>e</sup>  |
| South Africa         | 164              | 149               | 165               |
| Cyprus               | 127              | 117               | 96                |
| Spain                | 101              | 155               | 178               |
| Other countries      | 764              | 852               | 1120              |

e:- Estimated

**Production of Borates**  
**(By Principal Countries)**

(In '000 tonnes)

| Country                 | 2015 | 2016 | 2017             |
|-------------------------|------|------|------------------|
| Argentina <sup>e</sup>  | 480  | 520  | 519              |
| Bolivia                 | 166  | 200  | 174 <sup>e</sup> |
| Chile                   | 518  | 559  | 607              |
| China <sup>e b</sup>    | 90   | 90   | 90               |
| Kazakhstan <sup>e</sup> | 500  | 510  | 500              |
| Peru                    | 663  | 34   | 0                |
| Russia <sup>e</sup>     | 80   | 80   | 80               |
| Turkey                  | 2181 | 2070 | 2495             |
| USA <sup>e a</sup>      | 1300 | 1300 | 1300             |
| Other countries         | 1    | 0    | 0                |

e:- estimated    b:- B<sub>2</sub>O<sub>3</sub> equivalent

a:-Sold or used by producers

**Production of Cadmium  
(By Principal Countries)**

(In Tonnes)

| Country                  | 2015              | 2016             | 2017              |
|--------------------------|-------------------|------------------|-------------------|
| Bulgaria                 | 344               | 362              | 333               |
| Canada                   | 1159              | 2305             | 1802              |
| China                    | 8162              | 8222             | 8200 <sup>e</sup> |
| Germany <sup>e</sup>     | 400               | 400              | 400               |
| Japan                    | 2188              | 1989             | 2142              |
| Kazakhstan               | 1475              | 2682             | 1500 <sup>e</sup> |
| Korea (Rep. of)          | 5600 <sup>e</sup> | 4000             | 4000              |
| Mexico                   | 1283              | 1244             | 1142              |
| Netherlands <sup>e</sup> | 620               | 620              | 620               |
| Norway                   | 310 <sup>e</sup>  | 335 <sup>e</sup> | 416               |
| Peru                     | 757               | 820              | 797               |
| Poland                   | 383               | 319              | 309               |
| Russia <sup>e</sup>      | 1300              | 1600             | 1700              |
| USA <sup>e</sup>         | 500               | 400              | 550               |
| Other countries          | 439               | 465              | 477               |

Source:- World Mineral Production, 2013-17, BGS

e:- estimated

**World Production of Chromium Ores and Concentrates  
(By Principal Countries)**

(In '000 tonnes)

| Country               | 2015  | 2016             | 2017             |
|-----------------------|-------|------------------|------------------|
| Albania               | 640   | 713              | 952              |
| Brazil                | 527   | 500 <sup>e</sup> | 500 <sup>e</sup> |
| Finland <sup>a</sup>  | 946   | 1070             | 972              |
| India                 | 2916  | 3728             | 3481             |
| Iran                  | 277   | 342              | 340              |
| Kazakhstan            | 5383  | 5543             | 6338             |
| Oman                  | 443   | 451              | 436              |
| Pakistan <sup>e</sup> | 330   | 230              | 350              |
| Russia                | 503   | 485              | 520              |
| South Africa          | 15684 | 14705            | 16587            |
| Turkey <sup>e</sup>   | 6600  | 6600             | 6600             |
| Zimbabwe              | 208   | 112              | 319 <sup>e</sup> |
| Other countries       | 166   | 144              | 142              |

e:- estimated

a:- concentrates

**World Production of Coal and Lignite**  
**(By Principal Countries)**

|                                 | (in million tonnes) |             |             |
|---------------------------------|---------------------|-------------|-------------|
| Country                         | 2015                | 2016        | 2017        |
| <b>World Total (rounded)</b>    | <b>7931</b>         | <b>7469</b> | <b>7632</b> |
| <b>Australia</b>                |                     |             |             |
| Bituminous <sup>1</sup>         | 441                 | 443         | 436         |
| Brown coal                      | 61                  | 60          | 56          |
| <b>Bosnia &amp; Herzegovina</b> |                     |             |             |
| Brown coal & lignite            | 12                  | 13          | 14          |
| <b>Bulgaria</b>                 |                     |             |             |
| Brown coal & Lignite            | 36                  | 31          | 35          |
| <b>Canada</b>                   |                     |             |             |
| Coal                            | 62                  | 61          | 60          |
| <b>China</b>                    |                     |             |             |
| Coal                            | 3747                | 3411        | 3445        |
| <b>Colombia</b>                 |                     |             |             |
| Bituminous                      | 82                  | 87          | 85          |
| <b>Czech Republic</b>           |                     |             |             |
| Bituminous                      | 8                   | 6           | 5           |
| Brown coal                      | 38                  | 39          | 39          |
| <b>Germany</b>                  |                     |             |             |
| Anthracite & Bituminous         | 7                   | 4           | 4           |
| Brown coal                      | 178                 | 172         | 171         |
| <b>Greece</b>                   |                     |             |             |
| Lignite                         | 46                  | 33          | 38          |
| <b>India</b>                    |                     |             |             |
| Bituminous                      | 639                 | 658         | 679         |
| Lignite                         | 44                  | 45          | 48          |
| <b>Indonesia</b>                |                     |             |             |
| Anthracite & Bituminous         | 462                 | 456         | 461         |
| <b>Kazakhstan</b>               |                     |             |             |
| Bituminous                      | 102                 | 97          | 106         |
| Lignite                         | 6                   | 6           | 5           |
| <b>Korea, Dem. P.R.</b>         |                     |             |             |
| Coal <sup>e</sup>               | 28                  | 31          | 31          |
| <b>Mexico</b>                   |                     |             |             |
| Bituminous                      | 16                  | 14          | 13          |

| Country                    | 2015 | 2016 | 2017 |
|----------------------------|------|------|------|
| <b>Mongolia</b>            |      |      |      |
| Coal                       | 24   | 35   | 49   |
| <b>Poland</b>              |      |      |      |
| Lignite                    | 63   | 60   | 63   |
| Bituminous                 | 60   | 58   | 53   |
| <b>Romania</b>             |      |      |      |
| Anthracite &<br>Bituminous | 1    | 1    | 1    |
| Lignite                    | 25   | 22   | 28   |
| <b>Russia</b>              |      |      |      |
| Coal                       | 372  | 385  | 410  |
| <b>Serbia</b>              |      |      |      |
| Lignite                    | 37   | 39   | 39   |
| <b>South Africa</b>        |      |      |      |
| Anthracite &<br>Bituminous | 252  | 251  | 252  |
| <b>Thailand</b>            |      |      |      |
| Lignite                    | 15   | 17   | 15   |
| <b>Turkey</b>              |      |      |      |
| Anthracite                 | 2    | 2    | 2    |
| Lignite                    | 59   | 78   | 84   |
| <b>USA</b>                 |      |      |      |
| Lignite                    | 65   | 66   | 61   |
| <b>Ukraine</b>             |      |      |      |
| Bituminous                 | 30   | 32   | 35   |
| <b>UK</b>                  |      |      |      |
| Bituminous <sup>d</sup>    | 9    | 4    | 3    |
| <b>Vietnam</b>             |      |      |      |
| Anthracite                 | 42   | 39   | 38   |

e:- Estimated

d:- Including Anthracite

l :- Including Sub-bituminous

Coal :- All ranks of coal.

Hard coal :- Including Anthracite, Bituminous &  
Sub-bituminous.

**Production of Cobalt**  
**(By Principal Countries)**

(In tonnes of metal content)

| Country                   | 2015  | 2016  | 2017  |
|---------------------------|-------|-------|-------|
| Australia                 | 6777  | 6012  | 5198  |
| Brazil                    | 2771  | 853   | 800   |
| Canada                    | 7489  | 7148  | 6503  |
| China                     | 10093 | 9293  | 9000  |
| Congo, Dem. P. R.         | 83529 | 68822 | 82461 |
| Cuba                      | 3734  | 3694  | 3601  |
| Finland                   | 2119  | 2260  | 2300  |
| Madagascar                | 3920  | 3370  | 2840  |
| Morocco <sup>c</sup>      | 1722  | 2081  | 1924  |
| New Caledonia             | 11444 | 17844 | 9397  |
| Papua New Guinea          | 2505  | 2191  | 3308  |
| Philippines               | 4140  | 2554  | 2681  |
| Poland                    | 1730  | 1670  | 1580  |
| Russia <sup>c</sup>       | 2040  | 3092  | 2077  |
| South Africa <sup>c</sup> | 1362  | 1101  | 1062  |
| Zambia <sup>c</sup>       | 2979  | 5276  | 3240  |
| Other countries           | 2058  | 1831  | 950   |

c:- metal and/or refined



**Mine Production of Copper**  
**(By Principal Countries)**  
(In '000 tonnes of metal content)

| Country          | 2015 | 2016 | 2017 |
|------------------|------|------|------|
| Australia        | 996  | 948  | 860  |
| Brazil           | 359  | 338  | 384  |
| Canada           | 715  | 693  | 595  |
| Chile            | 5772 | 5553 | 5504 |
| China            | 1712 | 1900 | 1706 |
| Congo, Dem. P.R. | 1039 | 1024 | 1095 |
| Indonesia        | 579  | 728  | 622  |
| Iran             | 246  | 289  | 296  |
| Kazakhstan       | 474  | 475  | 545  |
| Mexico           | 594  | 766  | 742  |
| Mongolia         | 318  | 516  | 475  |
| Peru             | 1701 | 2354 | 2446 |
| Poland           | 426  | 424  | 420  |
| Russia           | 711  | 702  | 705  |
| USA              | 1416 | 1462 | 1290 |
| Zambia           | 711  | 763  | 797  |
| Other countries  | 1587 | 1725 | 1719 |

**World Production of Cement  
(By Principal Countries)**

| Country               | (In '000 tonnes)   |       |                    |
|-----------------------|--------------------|-------|--------------------|
|                       | 2015               | 2016  | 2017               |
| Turkey                | 61971              | 67856 | 70813              |
| Germany               | 23355 <sup>e</sup> | 23423 | 23400 <sup>e</sup> |
| Spain                 | 16986              | 17341 | 17304              |
| Italy                 | 14430              | 13677 | 13605              |
| France                | 12513              | 12528 | 13000 <sup>e</sup> |
| Poland                | 11278              | 12075 | 12997              |
| United Kingdom        | 7804               | 8056  | 7824               |
| Romania               | 6203               | 5933  | 6190               |
| Greece                | 6000 <sup>e</sup>  | 5891  | 5500 <sup>e</sup>  |
| Portugal              | 5626               | 4413  | 4854               |
| Czech Republic        | 2919               | 3188  | 3236               |
| Sweden                | 2826               | 2847  | 2768               |
| Cyprus                | 1730               | 1802  | 1816               |
| Slovakia <sup>e</sup> | 1700               | 1700  | 1800               |
| Latvia <sup>e</sup>   | 1500               | 1500  | 1500               |
| Norway                | 1284               | 1306  | 1461               |
| Serbia                | 1218               | 1312  | 1300               |
| Other countries       | 2502               | 2465  | 2623 <sup>e</sup>  |

e- Estimated.

**World Production of Diamond  
(By Principal Countries)**

(In '000 carats)

| Country          | 2015  | 2016  | 2017  |
|------------------|-------|-------|-------|
| Angola           | 9019  | 9022  | 9439  |
| Australia        | 13561 | 13958 | 17135 |
| Botswana         | 20824 | 20954 | 22900 |
| Canada           | 11677 | 11104 | 22724 |
| Congo, Dem. Rep. | 14284 | 12377 | 15404 |
| Ghana            | 174   | 143   | 87    |
| Guinea           | 167   | 113   | 181   |
| Guyana           | 118   | 140   | 52    |
| Lesotho          | 304   | 342   | 1126  |
| Namibia          | 1775  | 1584  | 1816  |
| Russia           | 41912 | 40322 | 42615 |
| Sierra Leone     | 500   | 550   | 289   |
| South Africa     | 8233  | 8451  | 9685  |
| Tanzania         | 216   | 238   | 304   |
| Zimbabwe         | 3491  | 2103  | 2508  |
| Other countries  | 193   | 326   | 460   |

**World Production of Diatomite**  
**(By Principal Countries)**

(In '000 tonnes)

| Country                | 2015 | 2016 | 2017 |
|------------------------|------|------|------|
| Argentina <sup>e</sup> | 200  | 200  | 200  |
| China <sup>e</sup>     | 420  | 420  | 420  |
| Denmark <sup>a</sup>   | 128  | 114  | 110  |
| France <sup>e</sup>    | 90   | 90   | 90   |
| Japan <sup>e</sup>     | 100  | 100  | 100  |
| Mexico                 | 90   | 97   | 96   |
| Peru                   | 121  | 107  | 97   |
| Russia                 | 66   | 47   | 47   |
| Turkey                 | 87   | 62   | 170  |
| USA                    | 832  | 686  | 700  |
| Other countries        | 257  | 293  | 439  |

e:- Estimated

a:- Molar is an impure diatomite containing a large proportion of clay.

**World Production of Fuller's Earth  
(By Principal Countries)**

| Country                 | (In '000 tonnes) |      |      |
|-------------------------|------------------|------|------|
|                         | 2015             | 2016 | 2017 |
| Angola <sup>e</sup>     | 98               | 98   | 98   |
| Australia               | 16               | 12   | 12   |
| Greece                  |                  |      |      |
| Attapulгите             | 108              | 45   | 54   |
| India <sup>e</sup>      | 6                | 6    | 6    |
| Korea, Rep. of          | 87               | 82   | 116  |
| Mexico                  | 108              | 112  | 111  |
| Morocco <sup>e,c</sup>  | 85               | 80   | 80   |
| Pakistan                | 8                | 14   | 18   |
| Senegal                 |                  |      |      |
| Attapulгите             | 188              | 172  | 166  |
| South Africa            |                  |      |      |
| Attapulгите             | 18               | 16   | 18   |
| Spain                   |                  |      |      |
| Attapulгите + Sepiolite | 551              | 548  | 542  |
| Turkey                  |                  |      |      |
| Sepiolite <sup>e</sup>  | 29               | 56   | 16   |
| USA                     | 1930             | 1680 | 1700 |

e:- Estimated

a:- Including attapulгите and sepiolite.

c:- Smectite

**World Production of Felspar  
(By Principal Countries)**

(In '000 tonnes)

| Country                | 2015             | 2016             | 2017             |
|------------------------|------------------|------------------|------------------|
| Algeria                | 154              | 168              | 170              |
| Argentina <sup>e</sup> | 250 <sup>e</sup> | 50.333           | 50 <sup>e</sup>  |
| Brazil                 | 456              | 500 <sup>e</sup> | 500 <sup>e</sup> |
| China <sup>e</sup>     | 3500             | 3500             | 3500             |
| Czech Republic         | 433              | 454              | 368              |
| Ecuador                | 293              | 149              | 93               |
| Egypt <sup>e</sup>     | 300              | 400              | 400              |
| France <sup>e</sup>    | 550              | 550              | 550              |
| Germany                | 253              | 285              | 277              |
| India <sup>e</sup>     | 1300             | 1300             | 1300             |
| Iran                   | 736              | 784              | 790              |
| Italy <sup>e</sup>     | 4700             | 4000             | 3500             |
| Japan <sup>e f</sup>   | 100              | 100              | 100              |
| Korea (Rep. of)        | 601              | 654              | 717              |
| Malaysia               | 443              | 442              | 412              |
| Mexico                 | 159              | 127              | 241              |
| Pakistan               | 142              | 316              | 273              |
| Poland                 | 538              | 511              | 525              |
| Portugal <sup>a</sup>  | 179              | 250              | 228              |
| Russia                 | 233              | 278              | 278              |
| Saudi Arabia           | 176              | 188              | 197              |
| South Africa           | 127              | 131              | 116              |
| Spain                  | 558              | 635              | 596              |
| Thailand               | 1330             | 1233             | 1305             |
| Turkey                 | 10423            | 11034            | 10274            |
| USA                    | 520              | 470              | 530              |
| Vietnam <sup>e</sup>   | 100              | 100              | 100              |
| Other countries        | 629              | 781              | 817              |

e:- Estimated    a:- Includes felspathic sand

f:- Including weathered granite felspar.

**World Production of Fluorspar  
(By Principal Countries)**

(In '000 tonnes)

| Country                   | 2015 | 2016            | 2017            |
|---------------------------|------|-----------------|-----------------|
| Argentina <sup>e</sup>    | 30   | 30              | 30              |
| Brazil <sup>b</sup>       | 27   | 27 <sup>e</sup> | 27 <sup>e</sup> |
| Bulgaria                  | 147  | 4               | -               |
| China <sup>e</sup>        | 3820 | 3800            | 3800            |
| Germany                   | 50   | 53              | 45              |
| Iran                      | 57   | 122             | 120             |
| Kazakhstan <sup>e</sup>   | 100  | 100             | 100             |
| Kenya                     | 70   | 43              | 7               |
| Mexico                    | 625  | 656             | 772             |
| Mongolia <sup>e</sup>     | 184  | 168             | 109             |
| Morocco                   | 81   | 74              | 74 <sup>e</sup> |
| South Africa <sup>e</sup> | 135  | 165             | 200             |
| Spain                     | 157  | 163             | 155             |
| Vietnam                   | 193  | 218             | 233             |
| Other countries           | 99   | 140             | 139             |

e:- Estimated

b:- Including beneficiated and directly shipped material

**World Production of Garnet (Industrial)**  
**(By Principal Countries)**

| Country         | (In tonnes) |        |        |
|-----------------|-------------|--------|--------|
|                 | 2016        | 2017   | 2018   |
| Australia       | 575000      | 364000 | 330000 |
| China           | 88900       | 100000 | 110000 |
| India           | 500000      | 142000 | 180000 |
| South Africa    | 271000      | 211000 | 270000 |
| USA             | 56400       | 107000 | 110000 |
| Other countries | 50000       | 50000  | 60000  |

Source : Mineral Commodity Summaries, 2018 & 2019, USGS.  
<https://minerals.usgs.gov/minerals/pubs/mcs>



**Production of Gallium (Primary)**  
**(By Principal Countries)**

(In tonnes)

| Country             | 2015 | 2016 | 2017 |
|---------------------|------|------|------|
| China               | 284  | 171  | 285  |
| Germany             | 11   | 23   | 0    |
| Japan               | 6    | 3    | 3    |
| Russia <sup>e</sup> | 13   | 13   | 13   |

e:- Estimated

**World Mine Production of Gold**  
**(By Principal Countries)**

(In tonnes of metal content)

| Country                 | 2015 | 2016 | 2017 |
|-------------------------|------|------|------|
| Argentina               | 63   | 56   | 63   |
| Australia               | 279  | 291  | 294  |
| Brazil                  | 83   | 80   | 85   |
| Canada                  | 163  | 164  | 176  |
| Chile                   | 43   | 46   | 38   |
| China <sup>d</sup>      | 450  | 453  | 426  |
| Colombia                | 60   | 63   | 42   |
| Ghana                   | 112  | 129  | 137  |
| Guinea                  | 21   | 30   | 47   |
| Indonesia               | 92   | 81   | 99   |
| Kazakhstan              | 64   | 75   | 85   |
| Mali <sup>e</sup>       | 47   | 47   | 51   |
| Mexico                  | 135  | 132  | 127  |
| Papua New Guinea        | 58   | 62   | 65   |
| Peru                    | 147  | 153  | 151  |
| Russia                  | 257  | 253  | 270  |
| South Africa            | 145  | 142  | 137  |
| Sudan                   | 82   | 93   | 107  |
| Tanzania                | 43   | 45   | 43   |
| USA                     | 214  | 222  | 237  |
| Uzbekistan <sup>e</sup> | 100  | 100  | 100  |
| Other countries         | 483  | 496  | 545  |

e:- Estimated

a:- Metal production

**Production of Graphite (Natural)**  
**(By Principal Countries)**

(In '000 tonnes)

| Country                       | 2015 | 2016            | 2017            |
|-------------------------------|------|-----------------|-----------------|
| Austria <sup>ae</sup>         | 22   | 21 <sup>e</sup> | 21 <sup>e</sup> |
| Brazil <sup>c</sup>           | 75   | 82              | 82 <sup>e</sup> |
| Canada <sup>e</sup>           | 30   | 30              | 30              |
| China <sup>ed</sup>           | 860  | 900             | 900             |
| India <sup>ac</sup>           | 136  | 122             | 34              |
| Korea, Dem. P.R. <sup>e</sup> | 10   | 10              | 10              |
| Mexico                        | 7    | 14              | 10              |
| Russia                        | 16   | 19              | 25              |
| Ukraine                       | 15   | 15              | 15              |
| Zimbabwe                      | 6    | 6               | 2               |
| Other countries               | 21   | 19              | 33 <sup>e</sup> |

e:- Estimated

a – Crude

c :- Including beneficiated and directly shipped material

d:-Including flake graphite

**Production of Gypsum  
(By Principal Countries)**

(In '000 tonnes)

| Country               | 2015              | 2016              | 2017              |
|-----------------------|-------------------|-------------------|-------------------|
| Argentina             | 1500 <sup>e</sup> | 2391              | 2000 <sup>e</sup> |
| Australia             | 3825              | 3972              | 3835              |
| Austria <sup>a</sup>  | 715               | 674               | 712               |
| Brazil                | 3131              | 3000 <sup>e</sup> | 3000 <sup>e</sup> |
| Canada <sup>a</sup>   | 2682              | 1704              | 2738              |
| Chile                 | 860               | 934               | 1157              |
| China <sup>e</sup>    | 130000            | 130000            | 130000            |
| Egypt <sup>a</sup>    | 744               | 740               | 740               |
| France <sup>a</sup>   | 1808              | 1735              | 1874              |
| Germany <sup>a</sup>  | 4200              | 3970              | 4450              |
| Greece                | 649               | 778               | 855               |
| India <sup>e</sup>    | 2376              | 2019              | 2000              |
| Iran                  | 12292             | 16377             | 16400             |
| Iraq <sup>e</sup>     | 10460             | 10460             | 10460             |
| Italy <sup>a</sup>    | 572               | 617               | 476               |
| Japan                 | 4670              | 4670 <sup>e</sup> | 4700 <sup>e</sup> |
| Jordan <sup>e</sup>   | 880               | 880               | 880               |
| Mexico                | 7102              | 7683              | 7610              |
| Morocco <sup>e</sup>  | 600               | 600               | 600               |
| Moldova <sup>e</sup>  | 400               | 400               | 400               |
| Oman                  | 6049              | 5483              | 6876              |
| Pakistan              | 1417              | 1872              | 2080              |
| Poland <sup>a</sup>   | 1099              | 1118              | 1108              |
| Russia <sup>e</sup>   | 4400              | 4400              | 4400              |
| Saudi Arabia          | 2780              | 3000              | 3150              |
| Spain                 | 7404              | 8936              | 9202              |
| Thailand <sup>a</sup> | 12143             | 11959             | 9866              |
| Turkey                | 8639              | 10124             | 10223             |
| USA                   | 16600             | 17000             | 17500             |
| Ukraine <sup>a</sup>  | 1255              | 1303              | 1529              |
| UK <sup>e</sup>       | 1800              | 1600              | 1300              |
| Other countries       | 8900              | 8284              | 8163              |

e:- Estimated

a - Including anhydrite

g :- Including selenite

**World Production of Iron Ore  
(By Principal Countries)**

(In million tonnes)

| Country             | 2015 | 2016 | 2017 |
|---------------------|------|------|------|
| Australia           | 810  | 858  | 885  |
| Brazil              | 389  | 424  | 436  |
| Canada <sup>f</sup> | 47   | 49   | 49   |
| Chile               | 15   | 15   | 15   |
| China               | 1381 | 1281 | 1229 |
| India               | 158  | 195  | 201  |
| Iran                | 51   | 65   | 74   |
| Kazakhstan          | 37   | 36   | 39   |
| Mauritania          | 12   | 13   | 12   |
| Mexico              | 20   | 18   | 18   |
| Russia              | 101  | 101  | 95   |
| South Africa *      | 73   | 66   | 75   |
| Sweden              | 30   | 32   | 32   |
| Ukraine             | 67   | 63   | 61   |
| USA **              | 46   | 42   | 46   |
| Venezuela           | 12   | 7    | 5    |
| Other countries     | 58   | 52   | 61   |

e:- Estimated

f - Including micaceous iron oxide.

\* :- Including by-product magnetite.

\*\* :- Including beneficiated and direct shipping ore and by-product iron ore.

**World Production of Pig Iron  
(By Principal Countries)**

(In '000 tonnes)

| Country             | 2015   | 2016   | 2017   |
|---------------------|--------|--------|--------|
| China               | 691413 | 702273 | 710759 |
| France              | 10097  | 9724   | 10678  |
| Germany             | 27844  | 27269  | 28410  |
| India               | 74621  | 77254  | 96313  |
| Iran                | 17005  | 18264  | 21694  |
| Japan               | 81011  | 80186  | 78330  |
| Korea Rep. of       | 47639  | 46336  | 47100  |
| Mexico              | 10074  | 9782   | 10760  |
| Russia              | 53700  | 51900  | 52200  |
| Taiwan              | 14370  | 14890  | 14361  |
| Turkey <sup>e</sup> | 20000  | 20000  | 20000  |
| USA                 | 25435  | 22293  | 22395  |
| Ukraine             | 21863  | 23560  | 19798  |
| Other countries     | 139760 | 132801 | 139611 |

e:- Estimated

**World Production of Crude Steel  
(By Principal Countries)**

(In '000 tonnes)

| Country         | 2015   | 2016     | 2017   |
|-----------------|--------|----------|--------|
| Brazil          | 33256  | 31275    | 34350  |
| Canada          | 12473  | 12672    | 13614  |
| China           | 803825 | 807609.4 | 831728 |
| France          | 14984  | 14413    | 15505  |
| Germany         | 42674  | 42081    | 43910  |
| India           | 89790  | 97443    | 102338 |
| Iran            | 16656  | 18466    | 21840  |
| Italy           | 22018  | 23372    | 24069  |
| Japan           | 105134 | 104775   | 104661 |
| Korea Rep. of   | 69670  | 68575    | 71080  |
| Mexico          | 18228  | 18811    | 20504  |
| Russia          | 69400  | 69600    | 68620  |
| Spain           | 14845  | 13654    | 14444  |
| Taiwan          | 20815  | 20858    | 21370  |
| Turkey          | 31517  | 33163    | 37524  |
| USA             | 78845  | 78475    | 81612  |
| UK              | 10907  | 7635     | 7491   |
| Other countries | 164945 | 164998   | 174807 |

Source:- World Mineral Production, 2013-17, BGS

[www.bgs.ac.uk/mineralsuk/statistics](http://www.bgs.ac.uk/mineralsuk/statistics)

e:- Estimated

**World Production of Ferro – Alloys  
(By Principal Countries)**

|           |                                 | (In tonnes) |          |                   |
|-----------|---------------------------------|-------------|----------|-------------------|
| Country   | Ferro - Alloys                  | 2015        | 2016     | 2017              |
| Australia | FeMn & FeSiMn                   | 278000      | 222000   | 245000            |
| Bhutan    | FeSi <sup>e</sup>               | 104500      | 106000   | 109000            |
| Brazil    | FeCr                            | 155421      | 150240   | 171531            |
|           | FeMn <sup>e</sup>               | 129000      | 124000   | 133074            |
|           | FeNi                            | 30300       | 44538    | 43800             |
|           | FeNb                            | 51874       | 44390    | 58690             |
|           | FeSiCr                          | 36092       | -        | -                 |
|           | FeSiMg <sup>e</sup>             | 20000       | 20000    | 20000             |
|           | FeSi                            | 200000      | 200000   | 200000            |
|           | Other ferro-alloys <sup>e</sup> | 40000       | 40000    | 40000             |
| Canada    | FeNb                            | 5385        | 6213     | 6300 <sup>e</sup> |
|           | FeSi <sup>e</sup>               | 38000       | 38000    | 38000             |
|           | FeV                             | 800         | 600      | 800               |
| China     | Ferro-alloys                    | 36664000    | 35588000 | 32887000          |
| Colombia  | FeNi <sup>e</sup>               | 104773      | 105976   | 116016            |
| Finland   | FeCr                            | 457000      | 469000   | 415000            |
| France    | FeMn                            | 126000      | 126000   | 126000            |
|           | FeSiMn <sup>e</sup>             | 65000       | 65000    | 65000             |
|           | FeSi <sup>e</sup>               | 45000       | 45000    | 45000             |
|           | Other ferro-alloys              | 60000       | 60000    | 60000             |
| Georgia   | FeMn                            | 4500        | 4500     | 4500              |
|           | FeSiMn                          | 217289      | 244228   | 284034            |
| Greece    | FeNi                            | 89129       | 87880    | 86140             |
| Iceland   | FeSi                            | 121556      | 128019   | 116811            |
| India     | FeAl                            | 3212        | 4345     | 4423              |
|           | FeCr                            | 944000      | 944000   | 944000            |
|           | FeMn                            | 518000      | 518000   | 518000            |
|           | FeMo                            | 1459        | 1603     | 1205              |
|           | FeSiMg                          | 20541       | 20183    | 15978             |
|           | FeSiMn                          | 269920      | 300625   | 311326            |
|           | FeSi                            | 90000       | 90000    | 90000             |
|           | FeTi                            | 198         | 291      | 281               |
|           | FeV                             | 937         | 1329     | 1331              |



| Country        | Ferro Alloys                    | 2015                | 2016                 | 2017                 |
|----------------|---------------------------------|---------------------|----------------------|----------------------|
| Indonesia      | FeNi                            | 182000 <sup>e</sup> | 411000 <sup>e</sup>  | 714000               |
|                | FeSiMn                          | 20700               | 20000                | 6000                 |
| Italy          | FeSiMn                          | 82000               | 90000                | 91000                |
| Japan          | FeMn                            | 465952              | 473740               | 456460               |
|                | FeNi                            | 396969              | 333448               | 312324               |
|                | Other ferro-alloys              | 73651               | 77453                | 79809                |
| Kazakhstan     | FeCr                            | 1414476             | 1525222              | 1640299              |
|                | FeSiCr                          | 74609               | 94467                | 110497               |
|                | FeSiMn                          | 164189              | 135885               | 137006               |
|                | FeSi                            | 86984               | 68779                | 59926                |
|                | Other ferro-alloys              | 1662                | -                    | -                    |
| Korea, Rep. of | FeMn <sup>e</sup>               | 355000              | 355000               | 355000               |
|                | FeSiMn <sup>e</sup>             | 196000              | 196000               | 196000               |
|                | Other ferro-alloys              | 4200                | 4200                 | 4200                 |
| Mexico         | FeMn                            | 67919               | 84529                | 90010                |
|                | FeSiMn                          | 139363              | 134251               | 148142               |
| New Caledonia  | FeNi                            | 228484              | 261420               | 269961               |
| Norway         | FeMn <sup>e</sup>               | 350000              | 380000               | 300000               |
|                | FeSiMn <sup>e</sup>             | 315000              | 315000               | 315000               |
|                | FeSi                            | 243813              | 249475               | 240813               |
| Russia         | FeCr                            | 363286              | 268439               | 436280               |
|                | FeMn                            | 155700              | 124200               | 167100               |
|                | FeMo                            | 4660                | 4881                 | 4726                 |
|                | FeNi <sup>e</sup>               | 20000               | 20000                | 20000                |
|                | FeSiCr <sup>e</sup>             | 4200                | 4200                 | 4200                 |
|                | FeSiMn                          | 188895              | 203216               | 52095                |
|                | FeSi                            | 1057909             | 935912               | 840764               |
|                | FeV                             | 12277               | 12392                | 12588                |
|                | Other ferro-alloys <sup>e</sup> | 34000               | 34000                | 34000                |
| South Africa   | FeCr                            | 3686000             | 3700000 <sup>e</sup> | 3700000 <sup>e</sup> |
|                | FeMn <sup>e</sup>               | 595000              | 600000 <sup>e</sup>  | 600000 <sup>e</sup>  |
|                | FeSiMn <sup>e</sup>             | 210000              | 210000 <sup>e</sup>  | 210000 <sup>e</sup>  |
|                | FeSi <sup>e</sup>               | 91000               | 90000 <sup>e</sup>   | 90000 <sup>e</sup>   |
|                | FeV <sup>e</sup>                | 15000               | 16000 <sup>e</sup>   | 16000 <sup>e</sup>   |
| Spain          | FeMn                            | 126200              | 126000 <sup>e</sup>  | 126000 <sup>e</sup>  |
|                | FeSiMn                          | 134000              | 134000 <sup>e</sup>  | 134000 <sup>e</sup>  |
|                | FeSi <sup>e</sup>               | 80000               | 80000                | 80000                |

| Country   | Ferro - Alloys      | 2015   | 2016                | 2017                |
|-----------|---------------------|--------|---------------------|---------------------|
| Sweden    | FeCr                | 82616  | 81102               | 114101              |
| USA       | Ferro-Alloys *      | 424000 | 425000 <sup>e</sup> | 425000 <sup>e</sup> |
| Ukraine   | FeMn                | 100209 | 184310              | 211124              |
|           | FeNi                | 95209  | 84025               | 74459               |
|           | FeSiMn              | 750181 | 876756              | 875031              |
|           | FeSi                | 114826 | 126297              | 118371              |
|           | Other ferro-alloys  | 19360  | 106244              | 87094               |
| Venezuela | FeMn <sup>e</sup>   | 12000  | 12000               | 12000               |
|           | FeNi <sup>e</sup>   | 50000  | 50000               | 50000               |
|           | FeSiMn <sup>e</sup> | 14000  | 14000               | 14000               |
|           | FeSi <sup>e</sup>   | 80000  | 80000               | 80000               |
| Zimbabwe  | FeCr                | 190837 | 170000              | 170000              |

e- Estimated.

Note:- FeAl: Ferro-aluminium , FeCr : Ferro-chrome

FeSiCr : Ferro-silico-chrome, FeSiMg : Ferro-silico-magnesium

FeMn : Ferro-manganese, FeSiMn : Ferro-silico-manganese

FeMo : Ferro-molybdenum, FeNi : Ferro-nickle

FeNb : Ferro-niobium, FeSi : Ferro-silicon

FeTi : Ferro-titanium, FeV : Ferro-vanadium

\* Ferro-silicon & silicon metal

**World Production of Ilmenite  
(By Principal Countries)**

(In '000 tonnes )

| Country                   | 2015 | 2016             | 2017             |
|---------------------------|------|------------------|------------------|
| Australia                 |      |                  |                  |
| Ilmenite                  | 1147 | 765              | 684              |
| Leucoxene                 | 246  | 73               | 55               |
| Canada <sup>e a</sup>     | 1900 | 1800             | 2300             |
| China <sup>e</sup>        | 1400 | 1400             | 1400             |
| India                     | 522  | 522 <sup>e</sup> | 522 <sup>e</sup> |
| Korea Rep. of             | 204  | 167              | 167 <sup>e</sup> |
| Kenya                     | 445  | 466              | 470              |
| Madagascar                | 166  | 256              | 430              |
| Mozambique                | 764  | 903              | 998              |
| Norway                    | 630  | 630 <sup>e</sup> | 630 <sup>e</sup> |
| Russia                    | 193  | 60               | 0                |
| Senegal                   |      |                  |                  |
| Ilmenite                  | 428  | 416              | 492              |
| Leucoxene <sup>m</sup>    | 5    | 10               | 10               |
| South Africa <sup>e</sup> | 1280 | 1020             | 1300             |
| Ukraine <sup>e</sup>      | 350  | 350              | 350              |
| USA <sup>e</sup>          | 200  | 100              | 100              |
| Vietnam                   | 238  | 211              | 225              |
| Other countries           | 173  | 139              | 194              |

Some ilmenite is converted to synthetic rutile in Australia, India, Japan and USA

a:- Canada produces some ilmenite which is sold as such and not processed in to slag, but tonnages are small

e:- estimated

m:- Including natural rutile

The figures in this table refer to gross tonnage of titanium concentrates

**World Production of Kaolin  
(By Principal Countries)**

(In '000 tonnes)

| <b>Country</b>              | <b>2015</b> | <b>2016</b>      | <b>2017</b>      |
|-----------------------------|-------------|------------------|------------------|
| Belgium <sup>e</sup>        | 300         | 300              | 300              |
| Brazil <sup>a</sup>         | 1700        | 1700             | 1700             |
| China <sup>e</sup>          | 3200        | 3200             | 3200             |
| Czech Republic <sup>a</sup> | 648         | 648              | 676              |
| Egypt <sup>e</sup>          | 232         | 230 <sup>e</sup> | 230 <sup>e</sup> |
| France                      | 275         | 264              | 260 <sup>e</sup> |
| Germany                     | 1100        | 1023             | 1109             |
| Iran                        | 1169        | 1142             | 1100             |
| Korea Rep. of               | 588         | 587              | 724              |
| Malaysia                    | 295         | 393              | 540              |
| Mexico                      | 366         | 452              | 294              |
| Portugal                    | 252         | 284              | 308              |
| Spain                       | 392         | 347              | 475              |
| Turkey                      | 1887        | 1283             | 1363             |
| USA                         | 6030        | 5170             | 5500             |
| Ukraine                     | 1815        | 2335             | 2380             |
| Other countries             | 3704        | 4713             | 4921             |

e:- Estimated a:- beneficiated

**Production of Kyanite and Related Minerals  
(By Principal Countries)**

(In tonnes)

| Country                 | 2015   | 2016   | 2017               |
|-------------------------|--------|--------|--------------------|
| <b>Brazil</b>           |        |        |                    |
| Kyanite <sup>e b</sup>  | 200    | 200    | 200                |
| <b>France</b>           |        |        |                    |
| Andalusite <sup>e</sup> | 68000  | 58000  | 68000              |
| <b>India</b>            |        |        |                    |
| Kyanite                 | 2901   | 3253   | 7818               |
| Sillimanite             | 69942  | 68131  | 81638              |
| Madagascar              | 1900   | 1800   | 4200               |
| <b>Nepal</b>            |        |        |                    |
| Kyanite                 | 7      | 1      | 2                  |
| <b>South Africa</b>     |        |        |                    |
| Andalusite <sup>e</sup> | 190000 | 190000 | 190000             |
| <b>USA</b>              |        |        |                    |
| Kyanite <sup>a</sup>    | 109000 | 79700  | 90000 <sup>e</sup> |

e:- Estimated    a:- Including related minerals  
b:- Including beneficiated and directly shipped material.

**Mine Production of Lead**  
**(By Principal Countries)**

(In '000 tonnes of metal content)

| Country         | 2015 | 2016 | 2017 |
|-----------------|------|------|------|
| Argentina       | 30   | 28   | 28   |
| Australia       | 653  | 441  | 459  |
| Bolivia         | 75   | 90   | 112  |
| China           | 2335 | 2337 | 2300 |
| India           | 144  | 151  | 173  |
| Iran            | 44   | 47   | 48   |
| Ireland         | 31   | 20   | 17   |
| Kazakhstan      | 41   | 71   | 112  |
| Korea, Rep.of   | 3    | 3    | 4    |
| Macedonia       | 38   | 31   | 40   |
| Mexico          | 264  | 242  | 243  |
| Morocco         | 32   | 30   | 38   |
| Peru            | 316  | 314  | 307  |
| Poland          | 69   | 63   | 74   |
| Russia          | 180  | 195  | 202  |
| South Africa    | 35   | 39   | 48   |
| Sweden          | 79   | 76   | 71   |
| Tajikistan      | 31   | 47   | 51   |
| Turkey          | 33   | 29   | 30   |
| USA             | 367  | 336  | 302  |
| Other countries | 169  | 190  | 215  |

e:- Estimated

**World Production of Magnesite  
(By Principal Countries)**

(In '000 tonnes )

| Country                       | 2015              | 2016               | 2017               |
|-------------------------------|-------------------|--------------------|--------------------|
| Australia                     | 681               | 489                | 235                |
| Austria                       | 703               | 646                | 730                |
| Brazil                        | 1621 <sup>c</sup> | 1600 <sup>ce</sup> | 1600 <sup>ce</sup> |
| China <sup>e</sup>            | 19000             | 18600              | 18000              |
| Greece                        | 383               | 419                | 499                |
| India                         | 328               | 299                | 195                |
| Iran                          | 152               | 156                | 160                |
| Korea, Dem. P.R. <sup>e</sup> | 700               | 700                | 300                |
| Netherlands <sup>a</sup>      | 258               | 266                | 283                |
| Russia <sup>e</sup>           | 2600              | 2600               | 2600               |
| Saudi Arabia                  | 294               | 286                | 302                |
| Slovakia                      | 501               | 431                | 678                |
| Spain                         | 465               | 584                | 789                |
| Turkey                        | 3335              | 3258               | 1694               |
| Other countries               | 658               | 636                | 631                |

e:- Estimated    a:- Chloride produced from solution mining

c:- Including beneficiated and directly shipped material.

**World Production of Manganese Ore  
(By Principal Countries)**

(In '000 tonnes )

| Country                   | 2015  | 2016  | 2017              |
|---------------------------|-------|-------|-------------------|
| Australia                 | 6281  | 5327  | 6173              |
| Brazil                    | 2817  | 2881  | 2880 <sup>e</sup> |
| China <sup>e</sup>        | 13000 | 11650 | 12500             |
| Gabon                     | 4184  | 3413  | 4163              |
| Ghana                     | 1563  | 2018  | 3004              |
| India                     | 2167  | 2395  | 2589              |
| Kazakhstan                | 1626  | 1601  | 1492              |
| Malaysia                  | 481   | 701   | 1226              |
| South Africa <sup>e</sup> | 15979 | 13736 | 13889             |
| Ukraine                   | 1477  | 1328  | 1758              |
| Other countries           | 1881  | 1833  | 1883              |

e:- Estimated



**World Production of Mica  
(By Principal Countries)**

(In '000 tonnes )

| Country                 | 2015 | 2016 | 2017            |
|-------------------------|------|------|-----------------|
| Brazil <sup>e</sup>     | 450  | 450  | 450             |
| Turkey                  | 45   | 15   | -               |
| USA                     | 33   | 31   | 32 <sup>e</sup> |
| China <sup>e</sup>      | 25   | 25   | 25              |
| Canada <sup>e</sup>     | 22   | 20   | 22              |
| France <sup>e</sup>     | 21   | 20   | 19              |
| Korea (Rep. of) *       | 17   | 13   | 15              |
| Madagascar <sup>e</sup> | 17   | 22   | 35              |
| Finland                 | 12   | 11   | 11              |
| Other countries         | 35   | 26   | 24              |

e:- Estimated

a:-Including mica recovered from mica schists  
and/or kaolin beneficiation

b:- Sold or used by producers

\* :- Mainly sericite

**Production of Molybdenum**  
**(By Principal Countries)**

(In tonnes of metal content )

| Country         | 2015   | 2016   | 2017                |
|-----------------|--------|--------|---------------------|
| Armenia         | 5324   | 5438   | 5590                |
| Canada          | 1983   | 2883   | 5306                |
| Chile           | 52398  | 55834  | 62454               |
| China           | 135270 | 129357 | 130000 <sup>e</sup> |
| Iran            | 6705   | 6975   | 7000 <sup>e</sup>   |
| Mexico          | 11327  | 11896  | 13985               |
| Mongolia        | 2557   | 2431   | 2639                |
| Peru            | 20153  | 25757  | 28141               |
| Russia          | 3254   | 3359   | 2806                |
| USA             | 47400  | 35800  | 44600 <sup>e</sup>  |
| Other countries | 3294   | 2479   | 2723                |

e:- Estimated

**Production of Nickel**  
**(By Principal Countries)**

(In '000 tonnes of metal content )

| Country                   | 2015 | 2016 | 2017 |
|---------------------------|------|------|------|
| Australia                 | 229  | 203  | 179  |
| Botswana                  | 17   | 14   | 0    |
| Brazil                    | 89   | 79   | 88   |
| Canada                    | 235  | 235  | 214  |
| China                     | 101  | 100  | 105  |
| Colombia                  | 37   | 37   | 41   |
| Cuba                      | 54   | 52   | 53   |
| Finland                   | 9    | 21   | 35   |
| Greece                    | 21   | 22   | 19   |
| Guatemala                 | 46   | 37   | 55   |
| Indonesia                 | 130  | 180  | 339  |
| Madagascar                | 47   | 42   | 35   |
| Myanmar                   | 23   | 23   | 22   |
| New Caledonia             | 193  | 204  | 215  |
| Papua New Guinea          | 26   | 22   | 35   |
| Philippines               | 418  | 301  | 315  |
| Russia                    | 261  | 223  | 221  |
| South Africa <sup>b</sup> | 57   | 49   | 48   |
| USA                       | 27   | 23   | 21   |
| Zimbabwe                  | 16   | 18   | 17   |
| Other countries           | 42   | 33   | 41   |

b:- Includes metal and metal content of sulphate and concentrates

**Production of Perlite  
(By Principal Countries)**

(In '000 tonnes )

| Country             | 2015            | 2016 | 2017             |
|---------------------|-----------------|------|------------------|
| China <sup>e</sup>  | 700             | 700  | 700              |
| Greece              | 891             | 921  | 933              |
| Hungary             | 65              | 76   | 75 <sup>e</sup>  |
| Iran                | 395             | 525  | 500 <sup>e</sup> |
| Italy <sup>e</sup>  | 60              | 60   | 60               |
| Philippines         | 19              | 14   | 2                |
| Russia <sup>e</sup> | 45              | 45   | 45               |
| Thailand            | 17              | 19   | 6                |
| Turkey              | 846             | 1066 | 606              |
| USA                 | 488             | 513  | 520              |
| Ukraine             | 16 <sup>e</sup> | 16   | 17               |
| Other countries     | 59              | 80   | 106              |

e:- Estimated

**World Production of Pyrophyllite  
(By Principal Countries)**

| Country            | (in '000 tonnes) |                  |                  |
|--------------------|------------------|------------------|------------------|
|                    | 2015             | 2016             | 2017             |
| India              | 140              | 140 <sup>e</sup> | 140 <sup>e</sup> |
| Japan <sup>e</sup> | 350              | 350              | 350              |
| Korea, Rep. of     | 597              | 590              | 431              |
| Peru               | 26               | 18               | 23               |
| Saudi Arabia       | 8                | 42               | 44               |
| South Africa       | 17               | 19               | 55               |
| Thailand           | 46               | 64               | 100              |
| Turkey             | 173              | 195              | 471              |

e:- Estimated

**Production of Natural Gas  
(By Principal Countries)**

(In '000 million cubic meter )

| Country              | 2015 | 2016 | 2017 |
|----------------------|------|------|------|
| Algeria              | 81   | 91   | 91   |
| Argentina            | 43   | 45   | 45   |
| Australia            | 77   | 97   | 114  |
| Canada               | 154  | 157  | 155  |
| China                | 135  | 137  | 147  |
| Egypt                | 43   | 40   | 49   |
| India                | 32   | 32   | 32   |
| Indonesia            | 76   | 75   | 72   |
| Iran                 | 189  | 203  | 224  |
| Kazakhstan           | 45   | 47   | 53   |
| Malaysia             | 63   | 68   | 71   |
| Mexico               | 60   | 52   | 49   |
| Netherlands          | 52   | 50   | 44   |
| Nigeria              | 50   | 45   | 47   |
| Norway               | 117  | 117  | 124  |
| Oman                 | 31   | 32   | 30   |
| Pakistan             | 42   | 42   | 42   |
| Qatar                | 175  | 177  | 176  |
| Russia               | 633  | 639  | 691  |
| Saudi Arabia         | 99   | 105  | 111  |
| Thailand             | 40   | 39   | 38   |
| Trinidad &<br>Tobago | 39   | 34   | 34   |
| Turkmenistan         | 72   | 67   | 62   |
| USA <sup>a</sup>     | 766  | 729  | 735  |
| UAE                  | 56   | 60   | 60   |
| UK                   | 40   | 42   | 42   |
| Uzbekistan           | 58   | 53   | 53   |
| Other countries      | 422  | 437  | 442  |

a :- Dry gas

**World Production of Crude Petroleum  
(By Principal Countries)**

(In million tonnes )

| Country                   | 2015 | 2016 | 2017 |
|---------------------------|------|------|------|
| Algeria                   | 67   | 68   | 67   |
| Angola                    | 87   | 86   | 82   |
| Argentina                 | 28   | 27   | 25   |
| Azerbaijan <sup>b</sup>   | 42   | 41   | 39   |
| Brazil                    | 131  | 135  | 141  |
| Canada                    | 191  | 192  | 209  |
| China <sup>a</sup>        | 215  | 200  | 192  |
| Colombia                  | 52   | 46   | 45   |
| Ecuador                   | 29   | 30   | 29   |
| Egypt                     | 35   | 34   | 32   |
| India                     | 37   | 36   | 36   |
| Indonesia                 | 39   | 42   | 40   |
| Iran                      | 182  | 216  | 234  |
| Iraq                      | 197  | 218  | 222  |
| Kazakhstan                | 79   | 78   | 86   |
| Kuwait <sup>f</sup>       | 148  | 153  | 146  |
| Libya                     | 20   | 19   | 28   |
| Malaysia                  | 31   | 32   | 31   |
| Mexico                    | 134  | 127  | 115  |
| Nigeria                   | 106  | 91   | 95   |
| Norway                    | 96   | 98   | 97   |
| Oman                      | 49   | 50   | 48   |
| Qatar                     | 82   | 83   | 80   |
| Russia                    | 533  | 549  | 546  |
| Saudi Arabia <sup>f</sup> | 568  | 587  | 562  |
| USA                       | 588  | 564  | 600  |
| UAE                       | 176  | 182  | 176  |
| UK                        | 45   | 47   | 46   |
| Venezuela                 | 136  | 123  | 108  |
| Other countries           | 225  | 208  | 204  |

a:-Including oil from shale and coal

b:- including natural gas liquids

f:- Including shares of production from  
the Neutral Zone

**Production of Phosphate Rock  
(By Principal Countries)**

(In '000 tonnes )

| Country                 | 2015   | 2016              | 2017              |
|-------------------------|--------|-------------------|-------------------|
| Algeria                 | 1289   | 1274              | 1300 <sup>e</sup> |
| Australia               | 1028   | 1037              | 942               |
| Brazil <sup>b</sup>     | 6100   | 6500              | 5500              |
| China                   | 142039 | 144398            | 123132            |
| Egypt                   | 3427   | 3000 <sup>e</sup> | 3000 <sup>e</sup> |
| India                   | 1572   | 1124              | 1534              |
| Israel                  | 3427   | 3591              | 2637              |
| Jordan                  | 8336   | 7991              | 8688              |
| Kazakhstan <sup>e</sup> | 1830   | 1830              | 1830              |
| Mexico                  | 1929   | 3294              | 2307              |
| Morocco                 | 26264  | 26900             | 32800             |
| Peru                    | 11162  | 10561             | 8450              |
| Russia                  | 11500  | 12300             | 12500             |
| Saudi Arabia            | 2002   | 5400              | 5670              |
| Senegal                 | 1062   | 1609              | 1385              |
| South Africa            | 1852   | 1697              | 2079              |
| Togo                    | 1150   | 850               | 733               |
| Tunisia                 | 3228   | 3664              | 4422              |
| USA                     | 27400  | 27100             | 27700             |
| Vietnam                 | 2923   | 3143              | 3239              |
| Other countries         | 4494   | 4014              | 3458              |

e:- Estimated

b:- Including beneficiated and directly shipped material



**Mine Production of Platinum Group Metals  
(By Principal Countries)**

(In tonnes of metal content )

| Country                   | 2015    | 2016    | 2017             |
|---------------------------|---------|---------|------------------|
| <b>Botswana</b>           |         |         |                  |
| Platinum                  | 0.031   | 0       | 0                |
| Palladium                 | 0.156   | 0       | 0                |
| <b>Canada<sup>e</sup></b> |         |         |                  |
| Platinum                  | 11.9    | 11.3    | 9.8              |
| Palladium                 | 20.8    | 19.7    | 17.1             |
| Other platinum metals     | 1.4     | 1.3     | 1.1              |
| <b>China<sup>e</sup></b>  |         |         |                  |
| Platinum                  | 2.3     | 2.3     | 2.3              |
| Palladium                 | 1.2     | 1.2     | 1.2              |
| <b>Russia</b>             |         |         |                  |
| Platinum                  | 20.8    | 22.5    | 20.2             |
| Palladium                 | 75.5    | 86.3    | 82.5             |
| Other platinum metals     | 2.5     | 2.6     | 2                |
| <b>South Africa</b>       |         |         |                  |
| Platinum                  | 139.125 | 133.241 | 131.247          |
| Palladium                 | 82.691  | 76.273  | 80.134           |
| Other platinum metals     | 53.699  | 54.139  | 48.895           |
| <b>USA</b>                |         |         |                  |
| Platinum                  | 3.67    | 3.89    | 3.9 <sup>e</sup> |
| Palladium                 | 12.5    | 13.1    | 13 <sup>e</sup>  |
| <b>Zimbabwe</b>           |         |         |                  |
| Platinum                  | 12.564  | 15.11   | 14.257           |
| Palladium                 | 10.055  | 12.222  | 11.822           |
| Other platinum metals     | 2.612   | 3.093   | 3                |
| Other countries           | 3.265   | 3.819   | 3.868            |

Source:- World Mineral Production, 2013-17, BGS

e:- Estimated

**Production of Potash  
(By Principal Countries)**

(In '000 tonnes of K<sub>2</sub>O content )

| Country                  | 2015  | 2016  | 2017  |
|--------------------------|-------|-------|-------|
| Belarus                  | 6468  | 6180  | 7102  |
| Canada (Chloride)        | 11506 | 10208 | 12214 |
| Chile (Chloride)         | 1119  | 1237  | 1197  |
| China <sup>e</sup>       | 5710  | 5700  | 5700  |
| Germany (Potassic salts) | 3110  | 2694  | 2906  |
| Israel (Chloride)        | 950   | 2307  | 2479  |
| Jordan                   | 1437  | 1222  | 1415  |
| Russia (Chloride)        | 6954  | 6588  | 6600  |
| USA (Potassic salts)     | 740   | 500   | 480   |
| Other countries          | 1751  | 1599  | 1579  |

e:- Estimated

**World Production of Rare Earth Oxides  
(By Principal Countries)**

|                      | (In tonnes ) |                   |                   |
|----------------------|--------------|-------------------|-------------------|
| Country              | 2015         | 2016              | 2017              |
| Australia            | 8799         | 12631             | 16003             |
| China <sup>e a</sup> | 140000       | 140000            | 140000            |
| India                | 956          | 1000 <sup>e</sup> | 1000 <sup>e</sup> |
| Malaysia             | 365          | 1221              | 196               |
| Russia               | 2312         | 3063              | 2500              |
| USA                  | 3540         | 0                 | 0                 |
| Vietnam <sup>e</sup> | 250          | 220               | 100               |

e:- Estimated

a :- Includes production from iron ore extraction, bastnasite concentrates and ion absorption clays  
absorption clays.

**World Production of Refined Selenium  
(By Principal Countries)**

| Country                  | (In tonnes ) |      |                  |
|--------------------------|--------------|------|------------------|
|                          | 2015         | 2016 | 2017             |
| Belgium <sup>e</sup>     | 200          | 200  | 200              |
| Canada                   | 154          | 176  | 49               |
| Chile <sup>e</sup>       | 50           | 50   | 50               |
| China                    | 720          | 750  | 770              |
| Finland                  | 93           | 104  | 100              |
| Germany <sup>e</sup>     | 790          | 790  | 790              |
| Japan                    | 772          | 753  | 792              |
| Kazakhstan <sup>e</sup>  | 130          | 130  | 130              |
| Mexico                   | 99           | 121  | 112              |
| Peru                     | 40           | 45   | 50 <sup>e</sup>  |
| Philippines <sup>e</sup> | 70           | 70   | 70               |
| Poland                   | 87           | 82   | 74               |
| Russia                   | 143          | 197  | 197 <sup>e</sup> |
| USA <sup>e</sup>         | 90           | 122  | 116              |
| Other countries          | 75           | 76   | 76               |

e:- Estimated

**World Production of Rutile  
(By Principal Countries)**

(In '000 tonnes )

| Country                   | 2015 | 2016            | 2017             |
|---------------------------|------|-----------------|------------------|
| Australia                 | 295  | 285             | 226              |
| India                     | 17   | 17 <sup>e</sup> | 17 <sup>e</sup>  |
| Kazakhstan <sup>e</sup>   | 17   | 17              | 17               |
| Kenya                     | 79   | 88              | 91               |
| Sierra Leone              | 126  | 149             | 166 <sup>e</sup> |
| South Africa <sup>e</sup> | 67   | 67              | 65               |
| Ukraine <sup>e</sup>      | 90   | 90              | 90               |
| Other countries           | 15   | 21              | 24               |

e:- estimated

The figures in this table refer to gross tonnage of titanium concentrates

**World Mine Production of Silver**  
**(By Principal Countries)**

(In tonnes of metal content )

| Country         | 2015 | 2016 | 2017 |
|-----------------|------|------|------|
| Argentina       | 1079 | 933  | 995  |
| Australia       | 1430 | 1418 | 1120 |
| Bolivia         | 1306 | 1353 | 1196 |
| Canada          | 384  | 385  | 390  |
| Chile           | 1504 | 1501 | 1319 |
| China           | 3421 | 3496 | 3502 |
| Guatemala       | 863  | 838  | 337  |
| Kazakhstan      | 1309 | 1187 | 1059 |
| Mexico          | 5955 | 5409 | 5815 |
| Peru            | 4102 | 4375 | 4304 |
| Poland          | 1407 | 1482 | 1490 |
| Russia a        | 1580 | 1449 | 1306 |
| USA             | 1090 | 1150 | 1020 |
| Other countries | 2365 | 2738 | 2707 |

a :- Smelter and/or refinery production

**World Production of Sand & Gravel  
(By Principal Countries)**

| Country              | (In '000 tonnes ) |        |        |
|----------------------|-------------------|--------|--------|
|                      | 2015              | 2016   | 2017   |
| Austria              | 29470             | 29347  | 29658  |
| Belgium              | 19000             | 20000  | 20000  |
| Croatia              | 3545              | 3444   | 3767   |
| Czech Republic       | 19546             | 18338  | 19848  |
| Finland <sup>e</sup> | 32000             | 35000  | 35000  |
| France               | 117875            | 120382 | 120000 |
| Germany              | 239000            | 247000 | 257000 |
| Italy                | 46552             | 59912  | 64397  |
| Latvia               | 9716              | 9182   | 11418  |
| Netherlands          | 61900             | 55900  | 56000  |
| Norway               | 13000             | 14959  | 14696  |
| Poland               | 140000            | 140000 | 153000 |
| Romania              | 69895             | 70000  | 70000  |
| Spain                | 34000             | 31000  | 32600  |
| Other countries      | 251696            | 250634 | 256216 |

e : Estimated

**World Production of Sulphur & Pyrites  
(By Principal Countries)**

| Country                                 | (In tonnes of sulphur content ) |       |       |
|---|---------------------------------|-------|-------|
|   | 2015                            | 2016  | 2017  |
| World: Total (Sulphur)                  | 74500                           | 74800 | 74900 |
| (Pyrites) (rounded off)                 | 8200                            | 8000  | 8100  |
| Brazil (Sulphur)                        | 514                             | 531   | 531   |
| Brazil (Pyrites)                        | 20                              | 20    | 20    |
| Canada (Sulphur) <sup>a b</sup>         | 5745                            | 5381  | 5464  |
| China (Sulphur) <sup>e</sup>            | 12500                           | 12500 | 12500 |
| China (Pyrites) <sup>e</sup>            | 7700                            | 7700  | 7700  |
| Chile (Sulphur) <sup>b</sup>            | 1488                            | 1596  | 1524  |
| Finland (Sulphur) <sup>a b</sup>        | 479                             | 480   | 474   |
| Finland (Pyrites)                       | 353                             | 206   | 291   |
| Germany (Sulphur) <sup>a c</sup>        | 1012                            | 930   | 866   |
| India (Sulphur) <sup>a b e</sup>        | 2700                            | 2700  | 2700  |
| Iran (Sulphur) <sup>d</sup>             | 2200                            | 2200  | 2200  |
| Italy (Sulphur) <sup>a d</sup>          | 740                             | 550   | 550   |
| Japan (Sulphur) <sup>a b</sup>          | 3363                            | 3518  | 3372  |
| Jordan (Sulphur) <sup>a e</sup>         | 490                             | 490   | 490   |
| Kazakhstan (Sulphur) <sup>a b</sup>     | 3119                            | 3151  | 3551  |
| Korea, Rep. of (Sulphur) <sup>a b</sup> | 2528                            | 3078  | 3078  |
| Mexico (Sulphur) <sup>a b</sup>         | 1415                            | 1229  | 1107  |
| Netherlands (Sulphur) <sup>a b e</sup>  | 517                             | 522   | 496   |
| Peru (Sulphur) <sup>d e</sup>           | 556                             | 556   | 556   |
| Poland (Sulphur) <sup>a b e</sup>       | 931                             | 925   | 966   |
| Qatar (Sulphur) <sup>a e</sup>          | 1724                            | 1733  | 1678  |
| Russia (Sulphur) <sup>a c e</sup>       | 7156                            | 7140  | 7142  |
| Russia (Pyrites) <sup>e</sup>           | 71                              | 71    | 71    |
| Spain (Sulphur) <sup>a b e</sup>        | 1054                            | 1054  | 1054  |
| Saudi Arabia (Sulphur) <sup>a e</sup>   | 3800                            | 3900  | 3700  |
| South Africa (Sulphur) <sup>a b e</sup> | 277                             | 281   | 257   |
| Turkey (Pyrites)                        | 22                              | 61    | 31    |
| Turkey (Sulphur)                        | 74                              | 73    | 78    |
| Turkmenistan (Sulphur) <sup>a e</sup>   | 410                             | 410   | 410   |
| UAE (Sulphur) <sup>a e</sup>            | 2530                            | 2530  | 2530  |
| USA (Sulphur) <sup>a b</sup>            | 9536                            | 9743  | 9660  |
| Venezuela (Sulphur) <sup>a e</sup>      | 450                             | 410   | 360   |
| Other countries(Sulphur)                | 7643                            | 7601  | 7965  |

e- Estimated, a: From petroleum refining and/or natural gas

b: From metal sulphide processing, c: Other, d: Sulphur, all forms



**World Production of Talc  
(By Principal Countries)**

| Country                       | (In '000 tonnes) |                  |                  |
|-------------------------------|------------------|------------------|------------------|
|                               | 2015             | 2016             | 2017             |
| Argentina <sup>e b</sup>      | 25               | 14               | 14               |
| Australia <sup>e</sup>        | 80               | 111              | 119              |
| Austria                       | 122              | 123              | 124              |
| Brazil <sup>b</sup>           | 650              | 650 <sup>e</sup> | 650 <sup>e</sup> |
| Canada                        | 181              | 217              | 225              |
| China <sup>e</sup>            | 1800             | 1800             | 1900             |
| Egypt                         | 22               | 21               | 21               |
| Finland                       | 332              | 346              | 355              |
| France                        | 350              | 370 <sup>e</sup> | 370 <sup>e</sup> |
| India (Steatite )             | 770              | 770              | 770              |
| Iran                          | 137              | 119              | 120              |
| Italy <sup>e</sup>            | 165              | 165              | 165              |
| Japan <sup>e</sup>            | 25               | 25               | 25               |
| Korea, Dem. P.R. <sup>e</sup> | 6                | 2                | 3                |
| Mexico                        | 20               | 11               | 1                |
| Pakistan                      | 116              | 126              | 152              |
| Peru                          | 27               | 12               | 19               |
| Russia <sup>e</sup>           | 150              | 150              | 150              |
| USA                           | 615              | 536              | 550              |
| Other countries               | 55               | 417              | 439              |

e:- Estimated

b:- Including talc, agalmatolite and pyrophyllite.

**Production of Refined Tellurium metal**  
**(By Principal Countries)**

(In tonnes )

| Country          | 2015 | 2016 | 2017            |
|------------------|------|------|-----------------|
| Canada           | 9    | 18   | 17              |
| China            | 210  | 279  | 281             |
| Japan            | 34   | 28   | 34              |
| Russia           | 34   | 40   | 40 <sup>e</sup> |
| Sweden           | 33   | 39   | 35              |
| USA <sup>e</sup> | 50   | 50   | 50              |

e. Estimated

**World Mine Production of Tin**  
**(By Principal Countries)**

| Country              | (In tonnes of metal content ) |       |                    |
|----------------------|-------------------------------|-------|--------------------|
|                      | 2015                          | 2016  | 2017               |
| Australia            | 7158                          | 6635  | 7402               |
| Bolivia              | 20135                         | 17460 | 18341              |
| Brazil               | 18900                         | 15183 | 13900              |
| China                | 110156                        | 97165 | 93400 <sup>e</sup> |
| Congo, Dem. P. R.    | 4567                          | 6503  | 10391              |
| Indonesia            | 71309                         | 66358 | 83200              |
| Laos                 | 692                           | 1005  | 975                |
| Malaysia             | 4125                          | 4158  | 4819               |
| Myanmar <sup>e</sup> | 43000                         | 57000 | 68000              |
| Nigeria              | 2298                          | 3443  | 6550               |
| Peru                 | 19511                         | 18789 | 17790              |
| Rwanda               | 2884                          | 2662  | 3570               |
| Vietnam              | 4530                          | 4579  | 4500               |
| Other countries      | 1017                          | 1230  | 1967               |

e:- Estimated

**World Mine Production of Tungsten  
(By Principal Countries)**

(In tonnes of metal content )

| Country                       | 2015  | 2016             | 2017             |
|-------------------------------|-------|------------------|------------------|
| Austria                       | 870   | 950              | 950              |
| Bolivia                       | 1116  | 848              | 1400             |
| Brazil <sup>c</sup>           | 432   | 400 <sup>e</sup> | 400 <sup>e</sup> |
| Burundi                       | 78    | 131              | 150 <sup>e</sup> |
| Canada                        | 2114  | -                | -                |
| China                         | 66545 | 63956            | 65000            |
| Congo, Democratic Republic    | 65    | 93               | 153              |
| Korea, Dem. P.R. <sup>e</sup> | 70    | 50               | 300              |
| Kyrgyzstan <sup>c</sup>       | 100   | 100              | 100              |
| Peru                          | 139   | -                | -                |
| Russia                        | 2608  | 3048             | 2072             |
| Rwanda                        | 1081  | 1040             | 923              |
| UK                            | 195   | 923              | 1370             |
| Uzbekistan <sup>c</sup>       | 300   | 300              | 300              |
| Vietnam                       | 5123  | 6357             | 6483             |
| Zimbabwe <sup>c</sup>         | 200   | 1200             | 1000             |
| Other countries               | 1812  | 1695             | 1866             |

e:- Estimated

c :- Mainly scheelite.

**World Mine Production of Vanadium**  
**(By Principal Countries)**

(In tonnes of metal content )

| Country                   | 2015  | 2016  | 2017  |
|---------------------------|-------|-------|-------|
| Brazil                    | 3254  | 4461  | 5206  |
| China <sup>e</sup>        | 45000 | 45000 | 43000 |
| Kazakhstan <sup>e</sup>   | 1000  | 1000  | 1000  |
| Russia                    | 16195 | 16886 | 18636 |
| South Africa <sup>e</sup> | 17788 | 18000 | 18000 |

e:- Estimated

**World Production of Vermiculite  
(By Principal Countries)**

(In '000 tonnes )

| Country               | 2015 | 2016 | 2017            |
|-----------------------|------|------|-----------------|
| Brazil <sup>e</sup>   | 60   | 60   | 60              |
| Bulgaria <sup>e</sup> | 10   | 10   | 10              |
| China <sup>e</sup>    | 15   | 15   | 15              |
| India                 | 23   | 9    | 6               |
| Russia                | 8    | 12   | 12 <sup>e</sup> |
| South Africa          | 138  | 166  | 166             |
| USA <sup>e</sup>      | 100  | 100  | 100             |
| Zimbabwe <sup>e</sup> | 30   | 35   | 35              |
| Other countries       | 10   | 5    | 6               |

e:- Estimated

**Production of Wollastonite  
(By Principal Countries)**

(In tonnes )

| Country              | 2015    | 2016    | 2017    |
|----------------------|---------|---------|---------|
| China <sup>e</sup>   | 1000000 | 1100000 | 1100000 |
| Finland <sup>e</sup> | 10000   | 10000   | 10000   |
| India                | 175348  | 166186  | 153049  |
| Mexico               | 57451   | 63683   | 87562   |
| Spain                | 17700   | 13553   | 19135   |
| USA <sup>e</sup>     | 70000   | 60000   | 50000   |
| Other countries      | 2428    | 1797    | 1749    |

e. Estimated

**Mine Production of Zinc****(By Principal Countries)**

(In'000 tonnes of metal content )

| Country         | 2015 | 2016 | 2017              |
|-----------------|------|------|-------------------|
| Australia       | 1610 | 884  | 841               |
| Bolivia         | 442  | 487  | 504               |
| Canada          | 290  | 301  | 344               |
| China           | 4749 | 4711 | 4300 <sup>e</sup> |
| India           | 741  | 756  | 784               |
| Ireland         | 236  | 148  | 131               |
| Kazakhstan      | 384  | 366  | 375               |
| Mexico          | 787  | 662  | 671               |
| Peru            | 1421 | 1337 | 1473              |
| USA             | 825  | 805  | 730 <sup>e</sup>  |
| Other countries | 1902 | 2095 | 2346              |

e:- estimated



**World Production of Zirconium Minerals  
(By Principal Countries)**

| Country                   | (In '000 tonnes) |                 |                 |
|---------------------------|------------------|-----------------|-----------------|
|                           | 2015             | 2016            | 2017            |
| Australia                 | 608              | 620             | 536             |
| Brazil <sup>b</sup>       | 25 <sup>e</sup>  | 25 <sup>e</sup> | 25 <sup>e</sup> |
| China <sup>e</sup>        | 34               | 34              | 34              |
| India                     | 18               | 18              | 18              |
| Indonesia <sup>e</sup>    | 31               | 35              | 27              |
| Kenya                     | 26               | 35              | 35              |
| Madagascar                | 12               | 9               | 21              |
| Mozambique                | 52               | 68              | 74              |
| Senegal                   | 45               | 53              | 62              |
| South Africa <sup>e</sup> | 390              | 400             | 460             |
| USA <sup>e</sup>          | 50               | 50              | 30              |
| Ukraine <sup>e</sup>      | 25               | 25              | 25              |
| Other countries           | 12               | 24              | 39              |

e:- Estimated

b :- Including caldasite rock containing zircon and baddeleyite.