



# World Mineral Production

2016–2020



British  
Geological  
Survey



BRITISH GEOLOGICAL SURVEY

# WORLD MINERAL PRODUCTION 2016–20

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## PREFACE

Welcome to the latest edition of World Mineral Production, which includes global mineral production data for 2020 and is a continuation of the dataset that began in 1913.

This publication is compiled from a comprehensive database, maintained by the British Geological Survey (BGS), through which we aim to provide a reliable, comprehensive and continuous set of data covering most of the minerals that enter international trade. In this volume we have set out the production figures by country for more than 70 mineral commodities, over the five-year period from 2016 to 2020. The objective of this series remains to present the latest production information obtained from official bodies in individual countries, although other sources are also used to ensure completeness and accuracy. The cooperation afforded to the BGS by numerous national and international organisations is gratefully acknowledged.

Since the beginning of 2020 the world has been struggling to manage the COVID-19 pandemic, which is still affecting the economy. The pandemic has had a significant impact on the global minerals industry. Total world production of two-thirds of the commodities considered in this volume decreased during 2020 relative to 2019 levels. A recent study by BGS explored this issue. It used our long running World Mineral Statistics dataset to understand the impact of extreme shocks, such as pandemics, on global raw material supply chains.

Despite the challenges faced by the mining industry and the scale of the recession caused by the pandemic, the production of several commodities increased during 2020. Global production of potash and bauxite increased by more than 5 per cent on the previous year. Potash performed better than many commodities, owing to continued strong demand for fertilisers for food production. Canada produced the most potash (31% of total world production), followed by Belarus (17%).

Australia is the world's largest producer of bauxite with 28 per cent of total production, followed by Guinea (24%) and then China (17%). Although China is the world's third largest bauxite producer it imports significant amounts of bauxite from Australia and Guinea. This is due to depletion of its domestic resources that are generally of lower quality, coupled with its expanding alumina industry.

Relative to 2019, global production of bismuth increased by 9 per cent in 2020, linked to its use in pharmaceuticals. China dominated world production, accounting for 43 per cent, followed by Vietnam (26%). However, over the past 5 years total world bismuth production has decreased by more than 21 per cent, related to reduced production in Vietnam (<42%), Mexico (<100%) and Peru (<60%).

Production of the key battery raw materials, cobalt (3.7% increase) and nickel (5.2% increase) increased in 2020 relative to 2019. Lithium production declined slightly during the same period; however, considering a 5-year period lithium production has increased by more than 104 per cent.

Certain commodities experienced significant reductions in production during 2020. Diamond production decreased by more than 22 per cent in 2020 relative to 2019. 75 per cent of diamond producing countries reported a decrease in their total output, owing to reduced demand during the pandemic. Diamond production from Guyana and Tanzania decreased by more than 60 per cent relative to 2019 levels. In contrast production from the Central African Republic (113% relative to 2019) and the Congo (277% relative to 2019) increased considerably. Production of chromium ores and concentrates decreased by more than 20 per cent in 2020 relative to the previous year. This was due to mine closures, related to the pandemic in several countries and a decline in industrial demand. World graphite production decreased by 15 per cent, as mines were either placed in care and maintenance or production was temporary suspended, owing to pandemic restrictions in some countries. This decrease in output followed two years of growth in graphite production. China is the world's largest producer of graphite, accounting for 67 per cent of total world output.

International interest in the security of supply of minerals continues to grow. In its 'Net Zero Strategy: Build Back Greener' the UK Government committed to publishing a critical minerals strategy. It has established an Expert Committee on Critical Minerals to inform this process. It also plans to create a Critical Minerals Intelligence Centre to inform decision-making. During the past year, the BGS has provided advice on critical minerals to several UK Government departments. In particular, BGS was commissioned by the Department for Business, Energy and Industrial Strategy to produce the first UK list of critical minerals.

BGS has a large programme of UK and international research on critical raw materials, with increasing focus on those required for the clean energy transition. Notable publications during the last year include two reports considering lithium and graphite resources, and their potential to support battery supply chains in Africa. Another international collaborative research project examined the global lithium market. It employed material flow analysis to understand global flows of lithium, from primary extraction to lithium-ion battery use in different industrial sectors.

As always, I would welcome any comments and suggestions that you have relating to this volume, which might help us to meet your ongoing needs.

Karen Hanghøj  
Director

British Geological Survey  
Keyworth  
Nottingham

March 2022

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## EXPLANATORY NOTES

### Coverage

*World Mineral Production* covers the majority of economically important mineral commodities. For each commodity constant efforts are made to ensure that as many producing countries as possible are reported. For some commodities, where statistics on production are not publicly available, estimates are made. Users of this compilation are advised that more statistical information than can be included in a publication of this nature is held in the British Geological Survey files and is available for consultation. Historical data (from 1913 for many commodities) can be obtained from the predecessors to this series entitled *World Mineral Statistics* and the *Statistical Summary of the Mineral Industry*. Copies of these publications are available in the World Archive section of the website: [www.mineralsUK.com](http://www.mineralsUK.com).

### Arrangement of countries

Countries are ordered alphabetically in geographical groupings as follows:

- Europe
- Africa
- North and Central America, including the Caribbean
- South America
- Asia
- Australasia, including the Pacific Islands

### Metals

Mine production of many metals is expressed in terms of metal content. This is clearly indicated at the head of the table, adjacent to the unit used. For aluminium, cobalt, copper, iron, lead, nickel, tin and zinc, mine production and metal production are shown in separate tables. Unless otherwise specified, metal production statistics relate to metal recovered from both domestic and imported materials, whether primary or secondary, but exclude remelted material wherever possible.

### World totals

For certain minerals and metals no world total is shown due to the non-availability of certain individual country totals.

### Exclusion of Warranty

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## Acknowledgements

Compilation of this volume of mineral statistics has been possible only by obtaining information from a very large number of organisations throughout the world, chiefly home and overseas government departments and specialist national or international authorities concerned with particular sectors of the minerals or metals industries. To all these bodies the British Geological Survey expresses its grateful acknowledgement for the information made available, whether in published form or provided by direct correspondence. Particular acknowledgement is made to the Mines Departments and other government agencies of many countries whose regular statements, yearbooks and other reports are worthy of direct consultations by readers in search of detail.

Specialist commodity organisations which have kindly allowed information to be reproduced include the International Copper Study Group, the International Lead and Zinc Study Group, the International Nickel Study Group and the Barytes Association. In a few instances, information on specific commodities has been obtained directly from company sources. The co-operation of other members of the International Consultative Group on Non-Ferrous Metal Statistics is also gratefully acknowledged.

Appendix 2 contains a fuller list of organisations to whom acknowledgement is made.

## Units

The Statistics shown in this volume are expressed in metric units. The following factors are given for converting to non-metric units:

tonnes  $\times$  0.9842 = long tons  
tonnes  $\times$  1.1023 = short tons  
kilograms  $\times$  2.2046 = pounds  
kilograms  $\times$  32.1507 = troy ounces  
cubic metres  $\times$  35.3147 = cubic feet  
1 tonne of crude petroleum equals on average 7 barrels of crude petroleum.  
1 flask mercury = 34.5 kilograms

## Symbols

... figures not available  
0 quantity less than half unit shown  
— nil  
\* estimated  
BGS British Geological Survey





# **STATISTICAL INFORMATION**

## Production of bauxite

tonnes (metric)

| Country              | 2016        | 2017         | 2018        | 2019         | 2020         |
|----------------------|-------------|--------------|-------------|--------------|--------------|
| Bosnia & Herzegovina | 738 609     | 740 384      | 760 244     | 1 043 343    | 619 748      |
| Croatia              | 9 780       | 12 215       | 11 780      | 14 342       | 14 080       |
| France (a)           | * 110 000   | * 110 000    | * 110 000   | * 110 000    | 124 000      |
| Greece               | 1 880 000   | 1 927 000    | 1 607 000   | 1 492 000    | 1 428 000    |
| Hungary              | 16 700      | 1 300        | 4 200       | —            | —            |
| Montenegro           | * 516 200   | 927 847      | 468 164     | 774 725      | 897 057      |
| Russia               | 5 432 000   | 5 523 000    | 5 651 000   | 5 574 000    | 5 570 000    |
| Turkey               | 989 156     | 1 719 144    | 678 138     | 2 255 480    | 2 399 680    |
| Ghana                | 1 143 676   | 1 476 966    | 1 011 302   | 1 116 334    | 1 162 086    |
| Guinea (b)           | 32 423 932  | 51 701 564   | 59 573 707  | 70 173 326   | 87 766 199   |
| Ivory Coast          | —           | —            | —           | —            | 272 300      |
| Mozambique           | 1 451       | 3 182        | 9 912       | 8 024        | 6 491        |
| Sierra Leone         | 1 429 600   | 1 823 570    | 2 034 360   | 1 962 500    | 1 301 584    |
| Tanzania             | 73          | 12           | 7           | —            | —            |
| Dominican Republic   | 8 796       | —            | 6 525       | 7 551        | 9 475        |
| Jamaica              | 8 540 130   | 8 244 628    | 10 058 228  | 9 022 286    | 7 546 139    |
| USA (c)(d)           | 272 908     | 352 096      | 399 712     | 154 870      | 16 438       |
| Brazil               | 39 244 200  | 39 244 200   | 32 377 000  | 31 937 900   | 32 897 800   |
| Colombia             | 693         | 2 400        | 13 666      | 13 533       | —            |
| Guyana               | 1 479 090   | 1 459 223    | 1 926 053   | 1 919 747    | 595 943      |
| Venezuela            | 340 000     | 242 099      | 92 000      | * 50 000     | *—           |
| China                | 66 157 689  | * 69 000 000 | 70 751 214  | * 62 000 000 | * 62 000 000 |
| India (e)            | 24 745 487  | 22 786 106   | 23 687 721  | 22 073 398   | 19 700 000   |
| Indonesia            | * 1 485 000 | * 4 200 000  | 13 243 197  | 16 592 739   | 25 860 000   |
| Iran (f)             | 868 255     | 1 046 634    | 805 231     | 1 163 159    | * 1 170 000  |
| Kazakhstan           | 4 801 300   | 4 846 100    | 5 736 200   | 4 118 400    | 4 057 800    |
| Malaysia             | 342 924     | 189 131      | 589 684     | 900 561      | 594 714      |
| Pakistan (g)         | 57 024      | 75 375       | 145 189     | 93 308       | * 60 000     |
| Saudi Arabia         | 4 768 000   | 4 117 000    | 4 730 690   | 5 031 412    | 4 945 927    |
| Vietnam              | * 1 400 000 | * 2 800 000  | 3 569 700   | * 3 200 000  | * 3 120 000  |
| Australia            | 83 517 148  | 89 420 589   | 95 947 593  | 105 543 787  | 103 626 811  |
| Fiji                 | 59 500      | * 60 000     | * 58 000    | —            | —            |
| Solomon Islands (h)  | * 234 000   | * 1 524 000  | * 1 646 000 | * 1 234 000  | * 842 000    |
| World total          | 283 000 000 | 315 600 000  | 337 700 000 | 349 600 000  | 368 600 000  |

### Note(s)

(1) This table includes production of refractory bauxite.

(2) In addition to the countries listed, some bauxite continues to be produced in Mexico but it is all used as construction aggregates and figures are not reported.

(a) For non-metallurgical uses

(b) No adjustment has been made for moisture content

(c) Data for Alabama only

(d) Years ended 30 September of that stated

(e) Years ended 31 March following that stated

(f) Years ended 20 March following that stated

(g) Years ended 30 June of that stated

(h) Conservative BGS estimate based on reported exports

## Production of alumina

tonnes (Al<sub>2</sub>O<sub>3</sub> content)

| Country              | 2016        | 2017        | 2018         | 2019        | 2020        |
|----------------------|-------------|-------------|--------------|-------------|-------------|
| Bosnia & Herzegovina | 187 515     | 247 449     | 261 700      | 213 518     | 122 241     |
| France               | * 500 000   | * 500 000   | * 500 000    | * 500 000   | * 500 000   |
| Germany              | * 1 000 000 | * 1 000 000 | * 1 000 000  | 1 025 000   | 1 050 000   |
| Greece               | 693 460     | 695 400     | 677 000      | 672 400     | 680 000     |
| Ireland, Republic of | 1 898 054   | 1 880 057   | 1 818 065    | 1 860 970   | 1 822 368   |
| Romania              | 467 031     | 472 606     | 571 772      | 460 911     | 426 393     |
| Russia               | 2 682 000   | 2 822 000   | 2 763 000    | 2 755 000   | 2 873 000   |
| Spain                | 1 579 000   | 1 588 000   | 1 589 000    | 1 595 000   | 1 553 000   |
| Turkey               | * 260 000   | * 260 000   | * 260 000    | * 260 000   | * 260 000   |
| Ukraine              | 1 510 000   | 1 676 000   | 1 715 000    | 1 690 000   | 1 725 000   |
| Guinea               | —           | —           | 182 000      | 368 000     | 453 353     |
| Canada               | 1 566 467   | 1 570 000   | 1 568 000    | 1 522 000   | 1 518 000   |
| Jamaica              | 1 865 278   | 1 782 373   | 2 483 572    | 2 172 977   | 1 620 943   |
| USA                  | 2 360 000   | 1 430 000   | 1 570 000    | 1 410 000   | 1 340 000   |
| Brazil               | 10 885 500  | 11 060 600  | 8 258 000    | 9 170 800   | 10 185 000  |
| Venezuela            | * 312 000   | * 212 000   | —            | * 50 000    | * 50 000    |
| China                | 61 034 354  | 69 056 100  | 73 607 591   | 71 474 166  | 73 131 900  |
| India (a)            | 6 075 839   | 6 119 449   | 6 446 370    | 6 706 500   | 6 624 500   |
| Indonesia            | * 495 000   | 917 099     | 842 536      | 1 148 422   | 1 162 100   |
| Iran (b)             | 235 081     | 240 168     | 237 563      | 233 267     | 232 000     |
| Japan                | * 17 000    | * 19 000    | * 21 000     | * 25 000    | * 18 000    |
| Kazakhstan           | 1 500 013   | 1 508 240   | 1 493 072    | 1 406 229   | 1 399 949   |
| Saudi Arabia         | 1 429 000   | 1 484 000   | 1 774 000    | 1 798 340   | 1 782 041   |
| United Arab Emirates | —           | —           | —            | 1 100 000   | 1 920 000   |
| Vietnam              | * 597 000   | 1 062 000   | 1 301 300    | 1 382 100   | 1 384 706   |
| Australia            | 20 680 827  | 20 485 770  | 20 061 795   | 20 239 198  | 20 836 304  |
| World total          | 119 800 00  | 128 100 000 | 131 000 0006 | 131 200 000 | 134 700 000 |

### Note(s)

- (1) Where possible figures in this table show the alumina equivalent (Al<sub>2</sub>O<sub>3</sub>) of total hydrate produced, whether or not calcined.  
(2) The figures in this table represent alumina produced from bauxite. Alumina-rich materials can also be derived from salt slags formed during the production of secondary aluminium.

- (a) Years ended 31 March following that stated  
(b) Years ended 20 March following that stated

## Production of primary aluminium

tonnes (metric)

| Country              | 2016       | 2017       | 2018       | 2019       | 2020        |
|----------------------|------------|------------|------------|------------|-------------|
| Azerbaijan           | 36 811     | 28 500     | 44 710     | 32 693     | 30 248      |
| Bosnia & Herzegovina | 106 649    | 125 536    | 131 508    | 67 690     | 17 858      |
| France               | 424 600    | 430 000    | 390 000    | 402 000    | * 350 000   |
| Germany              | 546 806    | 549 995    | 528 868    | 507 934    | 529 056     |
| Greece               | 181 189    | 181 630    | 187 465    | 182 100    | 181 900     |
| Iceland              | 700 080    | 763 618    | 733 523    | 689 995    | 728 104     |
| Montenegro           | 38 915     | 39 379     | 40 163     | 36 522     | 37 208      |
| Netherlands          | 36 300     | 29 300     | 41 300     | 81 100     | 70 600      |
| Norway               | 1 247 000  | 1 253 000  | 1 295 000  | 1 312 000  | 1 330 000   |
| Romania              | 272 507    | 282 074    | 282 810    | 280 326    | 271 307     |
| Russia               | 3 561 000  | 3 584 000  | 3 627 000  | 3 637 000  | 3 638 000   |
| Slovakia             | 173 600    | 173 500    | 173 700    | 174 794    | 151 875     |
| Slovenia             | 84 365     | 84 424     | 80 544     | 68 255     | 50 185      |
| Spain                | * 360 000  | * 360 000  | * 350 000  | * 220 000  | * 200 000   |
| Sweden               | 124 000    | 123 000    | 125 000    | 120 000    | 117 000     |
| Turkey               | 79 000     | 76 000     | 73 300     | 78 100     | 79 900      |
| United Kingdom       | 46 000     | 48 000     | 44 400     | 39 400     | 35 700      |
| Cameroon             | * 74 000   | * 76 000   | * 66 000   | * 54 000   | * 60 000    |
| Egypt (a)            | 355 000    | 298 000    | 317 000    | * 260 000  | * 268 000   |
| Ghana (b)            | 33 010     | 33 364     | 42 867     | 43 908     | 37 566      |
| Mozambique (a)       | 571 125    | 577 495    | 571 125    | 569 002    | 562 633     |
| South Africa         | 701 000    | 716 000    | 714 000    | 717 000    | 717 000     |
| Canada               | 3 208 707  | 3 211 882  | 2 923 204  | 2 853 771  | 3 154 493   |
| USA                  | 818 430    | 740 884    | 898 652    | 1 126 032  | 1 026 617   |
| Argentina            | 424 996    | 433 391    | 437 771    | 438 200    | 309 800     |
| Brazil               | 793 000    | 801 700    | 659 000    | 650 200    | 685 100     |
| Venezuela            | 147 000    | 136 000    | 64 700     | * 10 000   | * 10 000    |
| Bahrain              | 971 420    | 981 016    | 1 011 101  | 1 365 005  | 1 548 000   |
| China                | 32 698 082 | 35 189 100 | 36 447 290 | 35 043 604 | 37 080 400  |
| India (c)            | 2 896 629  | 3 400 618  | 3 696 181  | 3 635 089  | 3 619 237   |
| Indonesia            | 245 483    | 218 816    | 242 043    | 250 393    | 245 000     |
| Iran (d)             | 341 207    | 337 608    | 301 033    | 275 717    | 376 800     |
| Kazakhstan           | 240 171    | 255 090    | 258 400    | 264 900    | 265 000     |
| Malaysia             | 620 000    | 760 000    | 760 000    | * 800 000  | * 1 000 000 |
| Oman                 | 386 000    | 253 000    | 380 000    | 391 000    | 397 000     |
| Qatar                | 643 514    | 650 000    | 616 000    | 653 000    | 655 000     |
| Saudi Arabia         | 871 000    | 916 000    | 932 000    | 967 000    | 1 010 563   |
| Tajikistan           | 129 300    | 103 100    | 95 796     | 100 800    | 84 000      |
| United Arab Emirates | 2 471 000  | 2 600 000  | 2 640 000  | 2 600 000  | 2 520 000   |
| Australia            | 1 633 904  | 1 487 555  | 1 574 240  | 1 569 591  | 1 585 017   |
| New Zealand          | 339 000    | 337 000    | 341 000    | 351 000    | 333 000     |
| World total          | 59 600 000 | 62 600 000 | 64 100 000 | 62 900 000 | 65 400 000  |

### Note(s)

(1) The figures in this table are for primary aluminium only. Aluminium can also be produced from secondary sources and may be recovered from salt slags.

(a) Years ended 30 June of that stated

(b) Exports

(c) Years ended 31 March following that stated

(d) Years ended 20 March following that stated

## Mine production of antimony

tonnes (metal content)

| Country       | 2016    | 2017    | 2018    | 2019    | 2020    |
|---------------|---------|---------|---------|---------|---------|
| Russia        | 11 900  | 14 400  | 30 828  | 21 671  | 17 532  |
| Turkey        | 2 700   | 4 750   | 3 500   | 3 815   | 2 570   |
| South Africa  | 350     | —       | —       | ...     | ...     |
| Canada        | 0       | 1       | 6       | 6       | 2       |
| Guatemala     | 25      | —       | —       | * 160   | —       |
| Honduras      | * 6     | 4       | 20      | * 10    | * 10    |
| Mexico        | 166     | 240     | 299     | 290     | 136     |
| Bolivia       | 2 669   | 2 881   | 3 110   | 2 747   | 2 629   |
| Ecuador       | —       | 261     | —       | —       | —       |
| Burma         | * 5 000 | * 7 000 | * 5 400 | * 5 000 | * 3 800 |
| China         | 107 535 | 97 683  | 95 286  | 60 229  | 64 530  |
| Iran (a)      | 1 765   | 2 489   | 2 551   | 5 264   | * 5 300 |
| Kazakhstan    | * 900   | * 200   | * 100   | * —     | * —     |
| Kyrgyzstan    | * 1 900 | * 1 380 | * 680   | * 7     | * 30    |
| Laos          | 242     | 320     | —       | 70      | —       |
| Pakistan (b)  | 21      | 15      | —       | —       | —       |
| Tajikistan    | 26 970  | 26 450  | 28 881  | 29 898  | 22 500  |
| Thailand      | 32      | —       | —       | —       | —       |
| Vietnam       | 229     | 230     | 244     | 395     | 388     |
| Australia (b) | 5 004   | 4 294   | 2 866   | 2 170   | 3 903   |
| World total   | 167 000 | 163 000 | 174 000 | 132 000 | 123 000 |

### Note(s)

(1) This table includes antimony content of antimonial lead alloys.

(a) Years ended 31 March following that stated

(b) Years ended 30 June of that stated

## Production of white arsenic

tonnes (metric)

| Country | 2016     | 2017     | 2018     | 2019     | 2020     |
|---------|----------|----------|----------|----------|----------|
| Belgium | * 1 000  | * 1 000  | * 1 000  | * 1 000  | * 1 000  |
| Russia  | * 1 500  | * 1 500  | * 1 500  | * 1 500  | * 1 500  |
| Morocco | 6 122    | 6 879    | 5 578    | 5 055    | * 5 000  |
| Namibia | * 1 900  | * 700    | —        | —        | —        |
| Bolivia | 38       | 20       | 238      | * 130    | * 130    |
| Peru    | 23 252   | 22 319   | 20 408   | 24 915   | 19 014   |
| China   | * 25 000 | * 24 000 | * 24 000 | * 24 000 | * 24 000 |
| Japan   | * 45     | * 45     | * 45     | * 45     | * 40     |

### Note(s)

(1) This table includes calculated trioxide equivalent of arsenic metal produced except where this would involve double counting.

## Production of asbestos

tonnes (metric)

| Country     | 2016      | 2017      | 2018      | 2019      | 2020      |
|-------------|-----------|-----------|-----------|-----------|-----------|
| Russia      | 691 712   | 714 105   | 752 917   | 790 000   | * 670 000 |
| Brazil      | 117 677   | 129 000   | 101 000   | * 100 000 | * 100 000 |
| Colombia    | 10 465    | 4 423     | 3 550     | —         | —         |
| China       | 191 632   | 124 723   | * 125 000 | * 150 000 | * 100 000 |
| Kazakhstan  | 192 500   | 192 700   | 202 700   | 210 900   | 227 000   |
| World total | 1 200 000 | 1 200 000 | 1 200 000 | 1 300 000 | 1 100 000 |

### Note(s)

(1) In addition to the countries listed, asbestos may also be produced in Afghanistan, North Korea, Romania and Slovakia.

## Production of barytes

tonnes (metric)

| Country        | 2016      | 2017        | 2018        | 2019        | 2020        |
|----------------|-----------|-------------|-------------|-------------|-------------|
| Bulgaria       | 50 000    | 67 000      | * 70 000    | * 70 000    | * 70 000    |
| Georgia        | 400       | 400         | —           | —           | —           |
| Germany        | 49 373    | 34 177      | 39 218      | 30 474      | 26 656      |
| Italy          | * 3 000   | * 3 000     | * 3 000     | * 3 000     | * 3 000     |
| Russia         | 434 000   | 178 000     | 163 000     | 163 000     | * 160 000   |
| Slovakia       | 25 000    | 15 690      | 9 500       | 5 770       | * 6 000     |
| Turkey         | 321 239   | 292 447     | 465 138     | 413 811     | 283 161     |
| United Kingdom | * 56 000  | * 55 000    | * 55 000    | * 50 000    | * 50 000    |
| Algeria        | 52 000    | * 52 000    | * 52 000    | * 52 000    | * 52 000    |
| Egypt (a)      | 4 000     | 4 000       | * 4 000     | * 4 000     | * 4 000     |
| Morocco        | 676 940   | 818 016     | 899 365     | 1 119 810   | * 1 000 000 |
| Nigeria        | 540       | 717         | 387         | 370         | 544         |
| Tunisia        | 10 000    | —           | *—          | *—          | *—          |
| Zimbabwe       | 200       | 200         | * 200       | * 200       | * 200       |
| Canada         | 32 000    | 32 000      | * 32 000    | * 30 000    | * 30 000    |
| Guatemala      | 500       | 43          | 63          | * 60        | —           |
| Mexico         | 156 854   | 359 912     | 366 234     | 378 295     | 372 262     |
| USA (b)        | 232 000   | 334 000     | 366 000     | 414 000     | * 450 000   |
| Argentina      | 12 389    | 5 977       | 7 225       | 3 898       | —           |
| Bolivia        | 16 632    | 29 114      | 53 163      | * 46 000    | 9 611       |
| Brazil         | 105 176   | * 100 000   | * 100 000   | * 100 000   | * 100 000   |
| Colombia       | 3 068     | 2 028       | 3 210       | 2 270       | 1 413       |
| Peru           | 7 953     | 9 182       | 15 621      | 16 373      | 5 242       |
| Afghanistan    | * 500     | * 500       | * 500       | * 500       | * 500       |
| Burma          | 2 627     | 3 206       | 2 935       | 12 439      | * 12 500    |
| China          | 3 200 000 | * 3 100 000 | * 2 900 000 | * 2 800 000 | * 2 500 000 |
| India (c)      | 1 246 371 | 2 038 915   | 2 390 000   | * 2 000 000 | * 1 500 000 |
| Iran (d)       | 399 750   | 239 132     | 201 721     | 224 412     | * 220 000   |
| Kazakhstan     | 190 000   | 160 000     | 420 000     | 530 600     | * 530 000   |
| Laos           | 82 000    | 77 000      | 35 000      | 486 009     | 96 278      |
| Malaysia       | 16 600    | 16 600      | —           | —           | 16 000      |
| Pakistan (a)   | 157 858   | 91 711      | 88 847      | 116 480     | * 110 000   |
| Thailand       | 211 920   | 147 954     | 67 490      | 33 644      | 22 394      |
| Vietnam        | 30 000    | 26 000      | 48 000      | * 50 000    | * 50 000    |
| Australia      | 7 139     | 8 957       | 6 534       | 1 982       | —           |
| World total    | 7 800 000 | 8 300 000   | 8 900 000   | 9 200 000   | 7 700 000   |

### Note(s)

(1) This table may include small quantities of witherite.

(a) Years ended 30 June of that stated

(b) Sold or used by producers

(c) Years ended 31 March following that stated

(d) Years ended 20 March following that stated

## Production of bentonite and fuller's earth

tonnes (metric)

| Country              | 2016      | 2017      | 2018      | 2019      | 2020      |
|----------------------|-----------|-----------|-----------|-----------|-----------|
| Armenia              |           |           |           |           |           |
| Bentonite            | 5 543     | 11 724    | 21 029    | 32 424    | 5 956     |
| Azerbaijan           |           |           |           |           |           |
| Bentonite            | 49 328    | 225 288   | 212 336   | 222 519   | 155 112   |
| Bosnia & Herzegovina |           |           |           |           |           |
| Bentonite            | 102 858   | 92 344    | 87 358    | 94 601    | 69 183    |
| Bulgaria             |           |           |           |           |           |
| Bentonite            | 37 100    | 54 100    | * 54 000  | * 54 000  | * 54 000  |
| Cyprus               |           |           |           |           |           |
| Bentonite            | 117 184   | 95 593    | 98 800    | 83 113    | 92 645    |
| Czech Republic       |           |           |           |           |           |
| Bentonite            | 374 000   | 254 000   | 277 000   | 357 000   | 226 000   |
| Denmark              |           |           |           |           |           |
| Bentonite            | 66 278    | 69 594    | 56 173    | 48 197    | 40 054    |
| France               |           |           |           |           |           |
| Bentonite (a)        | 42 567    | 24 497    | 35 696    | * 36 000  | * 36 000  |
| Georgia              |           |           |           |           |           |
| Bentonite            | * 20 000  | * 21 000  | 25 894    | 27 872    | 25 872    |
| Germany              |           |           |           |           |           |
| Bentonite            | 393 000   | 416 000   | 379 000   | 366 000   | 335 000   |
| Greece               |           |           |           |           |           |
| Bentonite            | 883 220   | 1 087 800 | 1 355 000 | 1 300 000 | 1 170 000 |
| Attapulgitite        | 44 500    | 54 280    | 53 300    | 36 700    | 28 050    |
| Hungary              |           |           |           |           |           |
| Bentonite            | 16 006    | 9 852     | 35 156    | 33 166    | * 30 000  |
| Italy                |           |           |           |           |           |
| Bentonite            | 45 978    | 86 106    | 100 067   | 82 720    | 65 989    |
| North Macedonia      |           |           |           |           |           |
| Bentonite            | 1 968     | 912       | 2 945     | 682       | 2 196     |
| Poland               |           |           |           |           |           |
| Bentonite            | 1 000     | —         | 560       | 500       | 920       |
| Romania              |           |           |           |           |           |
| Bentonite            | 26 758    | 33 777    | 34 809    | 41 964    | 45 495    |
| Russia               |           |           |           |           |           |
| Bentonite            | 589 000   | 91 000    | 50 100    | * 50 000  | * 50 000  |
| Slovakia             |           |           |           |           |           |
| Bentonite            | 158 000   | 226 082   | 270 000   | 251 000   | 275 570   |
| Slovenia             |           |           |           |           |           |
| Bentonite            | 182       | 147       | 113       | 99        | 77        |
| Spain                |           |           |           |           |           |
| Bentonite            | 155 038   | 177 565   | 178 463   | 160 477   | 221 495   |
| Attapulgitite        | 28 809    | 58 952    | 28 021    | 30 348    | 30 653    |
| Sepiolite            | 518 699   | 482 550   | 698 058   | 595 448   | 531 660   |
| Turkey               |           |           |           |           |           |
| Bentonite            | 1 744 912 | 1 481 617 | 1 331 955 | 1 533 547 | 1 658 837 |
| Sepiolite            | 56 038    | 15 624    | 26 300    | 68 999    | 65 427    |
| Ukraine              |           |           |           |           |           |
| Bentonite            | * 210 000 | 113 000   | 178 000   | 180 000   | * 180 000 |
| Algeria              |           |           |           |           |           |
| Bentonite            | 37 200    | 35 600    | 36 000    | 36 700    | * 36 000  |
| Angola               |           |           |           |           |           |
| Fuller's earth       | * 98 000  | * 98 000  | * 98 000  | * 98 000  | * 98 000  |
| Egypt                |           |           |           |           |           |
| Bentonite            | * 1 900   | * 4 600   | * 9 600   | * 6 900   | * 500     |
| Kenya                |           |           |           |           |           |
| Bentonite            | * 110     | * 110     | * 110     | * 110     | * 110     |
| Morocco              |           |           |           |           |           |
| Bentonite            | 103 266   | 174 546   | 172 749   | 188 080   | * 188 000 |
| Fuller's earth (b)   | 141 760   | 119 070   | 99 256    | 99 790    | * 99 000  |
| Mozambique           |           |           |           |           |           |
| Bentonite            | 322       | 284       | * 290     | 77 734    | 80 189    |
| Senegal              |           |           |           |           |           |
| Attapulgitite        | 172 300   | 165 900   | 177 900   | 197 673   | 201 919   |
| South Africa         |           |           |           |           |           |
| Bentonite            | 148 742   | 165 141   | 173 486   | 105 084   | 85 688    |
| Attapulgitite        | 16 374    | 18 333    | 17 121    | 11 422    | 11 957    |



## Production of bentonite and fuller's earth

tonnes (metric)

| Country                       | 2016        | 2017        | 2018        | 2019        | 2020        |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|
| Canada                        |             |             |             |             |             |
| Bentonite (a)                 | 468         | *—          | *—          | *—          | *—          |
| Cuba                          |             |             |             |             |             |
| Bentonite                     | 389         | 589         | 630         | 504         | 486         |
| Guatemala                     |             |             |             |             |             |
| Bentonite                     | 18 081      | 20 562      | 16 953      | 850         | 371         |
| Mexico                        |             |             |             |             |             |
| Bentonite                     | 109 176     | 148 475     | 264 800     | 24 321      | * 24 000    |
| Fuller's earth                | 111 713     | 110 860     | —           | *—          | —           |
| USA                           |             |             |             |             |             |
| Bentonite (c)                 | 3 600 000   | 4 430 000   | 4 670 000   | 4 490 000   | * 4 300 000 |
| Fuller's earth (c)            | 1 860 000   | 1 840 000   | 1 880 000   | 1 920 000   | * 2 000 000 |
| Argentina                     |             |             |             |             |             |
| Bentonite                     | 145 723     | 121 735     | 184 969     | 113 750     | 46 288      |
| Bolivia                       |             |             |             |             |             |
| Bentonite                     | 525         | 68          | 2           | *—          | *—          |
| Brazil                        |             |             |             |             |             |
| Bentonite                     | 352 920     | * 350 000   | * 350 000   | * 350 000   | * 350 000   |
| Chile                         |             |             |             |             |             |
| Bentonite                     | 1 288       | 1 584       | 525         | 395         | 170         |
| Colombia                      |             |             |             |             |             |
| Bentonite                     | * 9 000     | * 9 000     | * 9 000     | * 9 000     | * 9 000     |
| Peru                          |             |             |             |             |             |
| Bentonite                     | 19 410      | 756         | 2 384       | 46 887      | 25 532      |
| Uruguay                       |             |             |             |             |             |
| Bentonite                     | 6 650       | 6 640       | 7 760       | 6 726       | 16 550      |
| Burma                         |             |             |             |             |             |
| Bentonite (d)                 | 600         | 600         | —           | * 500       | * 500       |
| China                         |             |             |             |             |             |
| Bentonite                     | * 5 600 000 | * 5 600 000 | * 5 600 000 | * 2 000 000 | * 2 000 000 |
| India                         |             |             |             |             |             |
| Bentonite (d)                 | 2 837 896   | 3 313 358   | 3 385 450   | * 3 400 000 | * 3 500 000 |
| Fuller's earth (d)            | 478 204     | 797 684     | 553 294     | * 550 000   | * 730 000   |
| Indonesia                     |             |             |             |             |             |
| Bentonite                     | * 6 000     | * 6 000     | * 6 000     | * 6 000     | * 6 000     |
| Iran                          |             |             |             |             |             |
| Bentonite (e)                 | 842 421     | 723 718     | 731 908     | 1 021 481   | * 1 100 000 |
| Iraq                          |             |             |             |             |             |
| Bentonite                     | * 6 300     | * 6 300     | * 6 300     | * 6 300     | * 6 300     |
| Japan                         |             |             |             |             |             |
| Bentonite                     | * 420 000   | * 420 000   | * 420 000   | * 420 000   | * 420 000   |
| Korea (Rep. of)               |             |             |             |             |             |
| Bentonite                     | 63 834      | 47 306      | 31 824      | 43 886      | 5 314       |
| Fuller's earth                | 81 688      | 115 568     | 118 177     | 185 718     | 71 855      |
| Pakistan                      |             |             |             |             |             |
| Bentonite (f)                 | 42 038      | 42 770      | 74 268      | 47 525      | * 45 000    |
| Fuller's earth (f)            | 13 740      | 18 185      | 9 188       | 12 529      | * 12 000    |
| Philippines                   |             |             |             |             |             |
| Bentonite                     | 3 361       | 1 249       | 658         | * 650       | * 650       |
| Uzbekistan                    |             |             |             |             |             |
| Bentonite                     | * 40 000    | * 40 000    | 12 559      | 32 588      | 48 739      |
| Australia                     |             |             |             |             |             |
| Bentonite (f)                 | 90 917      | 116 762     | 87 330      | 56 215      | 42 713      |
| Fuller's earth                | 12 200      | 11 871      | * 10 000    | * 8 000     | * 9 000     |
| New Zealand                   |             |             |             |             |             |
| Bentonite                     | * 750       | * 750       | * 750       | * 750       | * 750       |
| World total bentonite         | 19 500 000  | 20 400 000  | 21 000 000  | 17 400 000  | 17 100 000  |
| World total fullers earth (g) | 3 600 000   | 3 900 000   | 3 800 000   | 3 800 000   | 3 900 000   |

See notes on the following page.

## Production of bentonite and fuller's earth

### Note(s)

- (1) Bentonites consist of montmorillonite (one of the smectite group of clay minerals) and occur in two main varieties, calcium bentonite, the most commonly occurring, and sodium bentonite, industrially the more important.
- (2) Calcium bentonite can be converted to sodium bentonite by a sodium-exchange process.
- (3) In some countries, such as the United Kingdom, calcium bentonite is known as fuller's earth, a term which is also used to refer attapulgit, a mineralogically distinct clay mineral but exhibiting similar properties.
- (4) In addition to the countries listed, Vietnam may produce bentonite and Algeria, France, Iran and Japan may produce fuller's earth.

- (a) Sales
- (b) Smectite
- (c) Sold or used by producers
- (d) Years ended 31 March following that stated
- (e) Years ended 20 March following that stated
- (f) Years ended 30 June of that stated
- (g) Including attapulgit and sepiolite

## Production of beryl

tonnes (metric)

| Country        | 2016    | 2017    | 2018    | 2019    | 2020    |
|----------------|---------|---------|---------|---------|---------|
| Madagascar (a) | * 16    | * 16    | * 16    | * 16    | * 16    |
| Mozambique     | 181     | 53      | 416     | * 100   | 80      |
| Uganda         | 14      | —       | 24      | 15      | 186     |
| Zambia         | 5       | 3       | 5       | 6       | * 6     |
| USA (b)        | 3 870   | 3 760   | 4 130   | * 4 000 | * 3 750 |
| China          | * 1 200 | * 1 200 | * 1 200 | * 1 800 | * 1 800 |

### Note(s)

- (a) Includes ornamental and industrial products
- (b) Includes bertrandite ore, calculated as equivalent to beryl containing 11% beryllium oxide

## Mine production of bismuth

tonnes (metal content)

| Country     | 2016    | 2017  | 2018  | 2019    | 2020    |
|-------------|---------|-------|-------|---------|---------|
| Armenia     | * 4     | * 4   | * 4   | * 4     | * 4     |
| Russia      | * 45    | * 45  | * 45  | * 45    | * 45    |
| Canada      | 2       | 5     | 5     | 6       | 4       |
| Mexico      | 539     | 513   | 333   | 251     | —       |
| Bolivia     | 15      | —     | 19    | * 20    | * 20    |
| Peru (a)    | 188     | 124   | 145   | 73      | 74      |
| China       | 1 672   | 1 748 | 1 804 | * 1 650 | * 1 650 |
| Japan (a)   | 409     | 489   | 547   | 527     | 574     |
| Kazakhstan  | * 270   | * 240 | * 290 | * 7     | * 450   |
| Vietnam     | * 1 700 | 2 743 | 3 099 | 917     | 993     |
| World total | 4 800   | 5 900 | 6 300 | 3 500   | 3 800   |

### Note(s)

- (1) The figures in this table are in some instances derived from reported bismuth content of refined and impure metal plus recoverable in ores and concentrates exported.
- (2) Production for some countries may include bismuth produced from imported ores but it is thought that any resulting duplication is insignificant in the countries shown.
- (3) In addition to the countries listed, the Republic of Korea may produce bismuth but data are confidential.

(a) Metal production

## Production of borates

tonnes (metric)

| Country    | 2016        | 2017        | 2018        | 2019        | 2020        |
|------------|-------------|-------------|-------------|-------------|-------------|
| Russia     | * 80 000    | * 75 000    | * 80 000    | * 80 000    | * 80 000    |
| Turkey     | 2 070 257   | 2 494 627   | 3 970 486   | 8 555 690   | 2 819 111   |
| USA (a)    | * 1 300 000 | * 1 300 000 | * 1 300 000 | * 1 300 000 | * 1 300 000 |
| Argentina  | 148 390     | 129 918     | 71 212      | 181 818     | 134 604     |
| Bolivia    | 199 924     | 223 515     | 232 268     | * 214 500   | 258 143     |
| Chile      | 558 854     | 607 076     | 398 411     | 352 255     | 288 103     |
| Peru       | 33 792      | —           | 100 552     | 111 108     | 43 645      |
| China (b)  | * 80 000    | * 70 000    | * 75 000    | * 250 000   | * 250 000   |
| Iran (c)   | —           | 1 150       | 1 200       | 2 519       | * 2 500     |
| Kazakhstan | * 510 000   | * 500 000   | * 500 000   | * 500 000   | * 500 000   |

### Note(s)

- (a) Sold or used by producers
- (b) B<sub>2</sub>O<sub>3</sub> equivalent
- (c) Years ended 20 March following that stated

## Production of bromine

kilograms

| Country      | 2016          | 2017          | 2018          | 2019          | 2020          |
|--------------|---------------|---------------|---------------|---------------|---------------|
| Germany      | * 1 500 000   | * 1 500 000   | * 1 500 000   | * 1 500 000   | * 1 500 000   |
| Russia       | ...           | ...           | ...           | ...           | * 500 000     |
| Ukraine      | 4 866 000     | * 4 500 000   | * 4 500 000   | * 4 500 000   | * 4 500 000   |
| USA (a)      | * 225 000 000 | * 225 000 000 | * 225 000 000 | * 225 000 000 | * 225 000 000 |
| China        | * 57 600 000  | * 60 000 000  | * 60 000 000  | * 64 000 000  | * 63 000 000  |
| India (b)    | 2 717 210     | 2 266 000     | 2 813 000     | * 2 800 000   | * 2 800 000   |
| Israel       | 161 986 000   | 180 000 000   | 175 000 000   | 180 000 000   | 173 000 000   |
| Japan        | * 20 000 000  | * 20 000 000  | * 20 000 000  | * 20 000 000  | * 20 000 000  |
| Jordan       | 80 690 000    | 84 800 000    | 88 620 000    | * 110 000 000 | * 84 000 000  |
| Turkmenistan | * 500 000     | * 500 000     | * 500 000     | * 500 000     | * 500 000     |

Note(s)

(a) Elemental bromine sold as such or used in the preparation of bromine compounds by primary producers

(b) Years ended 31 March following that stated

## Production of cadmium

tonnes (metric)

| Country             | 2016    | 2017    | 2018    | 2019     | 2020     |
|---------------------|---------|---------|---------|----------|----------|
| Bulgaria            | 362     | 333     | 313     | 315      | * 315    |
| Germany             | * 400   | * 500   | * 500   | * 450    | * 450    |
| Netherlands         | * 620   | * 620   | * 1 100 | * 1 100  | * 1 100  |
| Norway              | 355     | 416     | * 400   | * 340    | * 340    |
| Poland              | 319     | 309     | 305     | 199      | * 200    |
| Russia              | * 1 500 | * 1 700 | * 1 700 | * 1 400  | * 1 400  |
| Canada (a)          | 2 305   | 1 802   | 1 857   | 1 803    | 140      |
| Mexico              | 1 244   | 1 142   | 1 307   | 952      | 978      |
| USA (a)             | * 400   | * 550   | * 550   | * 550    | * 550    |
| Argentina           | 91      | 96      | 74      | 80       | 46       |
| Brazil              | * 200   | * 200   | * 300   | * 450    | * 25     |
| Peru                | 820     | 797     | 765     | 772      | 687      |
| China               | 8 222   | 8 411   | 10 349  | * 10 300 | * 10 300 |
| India (b)           | 35      | 47      | —       | —        | —        |
| Japan               | 1 989   | 2 142   | 1 980   | 2 000    | 1 800    |
| Kazakhstan          | 2 682   | * 1 500 | * 1 500 | * 1 400  | * 1 500  |
| Korea (Rep. of)     | 4 000   | 4 000   | 4 905   | * 4 500  | * 4 500  |
| Korea, Dem. P.R. of | * 200   | * 200   | * 200   | * 200    | * 200    |
| World total         | 25 700  | 24 800  | 28 100  | 26 800   | 24 500   |

Note(s)

(1) Data in this table excludes secondary metal unless otherwise stated.

(a) Including cadmium sponge and/or secondary metal

(b) Years ended 31 March following that stated

## Production of chromium ores and concentrates

tonnes (metric)

| Country              | 2016       | 2017       | 2018       | 2019        | 2020        |
|----------------------|------------|------------|------------|-------------|-------------|
| Albania              | 726 671    | 808 016    | 1 142 719  | 1 288 315   | 626 627     |
| Finland (a)          | 1 070 281  | 972 028    | 1 099 438  | 1 183 862   | 1 131 336   |
| Russia               | 485 000    | 434 000    | 469 000    | 698 000     | 689 000     |
| Turkey               | 2 024 821  | 2 554 222  | 2 896 651  | 3 363 791   | * 3 100 000 |
| Madagascar           | 71 043     | 64 200     | 35 381     | (h)* 76 100 | (h)* 12 400 |
| South Africa         | 14 705 180 | 16 586 863 | 17 829 038 | 17 664 239  | 13 243 231  |
| Sudan                | 45 000     | 32 000     | 27 000     | 12 728      | 9 000       |
| Zimbabwe             | 112 026    | 688 838    | 894 660    | 1 550 064   | 1 272 139   |
| Brazil               | * 500 000  | 542 989    | 567 300    | 511 100     | * 500 000   |
| Afghanistan          | 4 545      | * 4 500    | * 4 500    | * 4 500     | * 4 500     |
| China                | 25 444     | * 30 000   | * 30 000   | * 30 000    | * 30 000    |
| India (b)            | 3 727 780  | 3 480 941  | 3 970 691  | 3 929 260   | 2 863 869   |
| Iran (c)(d)          | 342 332    | 301 119    | 259 918    | 244 656     | * 250 000   |
| Kazakhstan           | 5 542 900  | 6 313 300  | 6 888 800  | 7 019 000   | 6 327 000   |
| Oman                 | 450 800    | 631 600    | 884 900    | 732 600     | 382 100     |
| Pakistan             | * 230 000  | * 350 000  | * 324 700  | * 467 400   | * 460 000   |
| Philippines (c)      | 25 745     | 20 849     | 50 650     | 36 423      | 35 112      |
| Papua New Guinea (e) | —          | 90 121     | 92 139     | 112 749     | * 113 000   |
| World total          | 30 100 000 | 33 900 000 | 37 500 000 | 38 900 000  | 31 000 000  |

### Note(s)

(a) Concentrates

(b) Years ended 31 March following that stated

(c) Including foundry sand and/or lumpy ore

(d) Years ended 20 March following that stated

(e) Exports

## Production of coal

tonnes (metric)

| Country                 | 2016        | 2017        | 2018         | 2019         | 2020         |
|-------------------------|-------------|-------------|--------------|--------------|--------------|
| Albania                 |             |             |              |              |              |
| Lignite                 | 4 000       | 46 000      | 98 000       | 31 000       | —            |
| Bosnia & Herzegovina    |             |             |              |              |              |
| Brown coal & lignite    | 13 488 147  | 14 033 504  | 14 378 767   | 13 376 548   | 13 365 730   |
| Bulgaria                |             |             |              |              |              |
| Anthracite & Bituminous | 10          | —           | *—           | *—           | *—           |
| Lignite                 | 29 294 200  | 32 136 500  | * 29 000 000 | * 29 000 000 | * 29 000 000 |
| Brown coal              | 2 140 000   | 2 451 500   | * 1 300 000  | * 1 300 000  | * 1 300 000  |
| Czech Republic          |             |             |              |              |              |
| Bituminous              | 6 074 000   | 4 870 000   | 4 110 000    | 3 150 000    | 1 861 000    |
| Brown coal              | 38 646 000  | 39 310 000  | 39 187 000   | 37 465 000   | 29 505 000   |
| Georgia                 | 296 500     | 268 113     | 137 912      | 15 900       | 99 134       |
| Germany                 |             |             |              |              |              |
| Anthracite & Bituminous | 4 079 000   | 3 840 000   | 2 762 000    | —            | *—           |
| Brown coal              | 171 546 550 | 171 286 000 | 166 258 371  | 131 314 116  | 107 377 260  |
| Greece                  |             |             |              |              |              |
| Lignite                 | 32 674 790  | 37 802 600  | 36 574 360   | 26 000 000   | 14 000 000   |
| Hungary                 |             |             |              |              |              |
| Bituminous              | 748         | 789         | 2 083        | 6 095        | 1 513        |
| Lignite                 | 9 164 000   | 7 890 000   | 7 843 000    | 6 790 000    | 6 069 000    |
| Brown coal              | 68 061      | 83 341      | 53 606       | 50 742       | 51 591       |
| Kosovo                  |             |             |              |              |              |
| Lignite                 | 8 800 848   | 7 574 697   | 7 169 767    | 8 063 051    | 8 537 948    |
| Montenegro              |             |             |              |              |              |
| Lignite                 | 1 349 729   | 1 419 655   | 1 539 118    | 1 561 712    | 1 656 900    |
| Brown coal              | 47 800      | 55 200      | 56 758       | 43 477       | 8 500        |

## Production of coal

tonnes (metric)

| Country                    | 2016        | 2017        | 2018         | 2019        | 2020        |
|----------------------------|-------------|-------------|--------------|-------------|-------------|
| North Macedonia            |             |             |              |             |             |
| Lignite                    | 5 130 055   | 5 056 918   | 4 946 486    | 5 066 083   | 4 532 745   |
| Norway                     |             |             |              |             |             |
| Bituminous (a)             | 962 000     | 134 000     | 142 500      | 107 900     | 74 503      |
| Poland                     |             |             |              |             |             |
| Coking coal                | 13 204 000  | 12 482 000  | 12 047 000   | 12 071 000  | 12 274 000  |
| Other bituminous coal      | 57 580 000  | 53 493 000  | 51 767 000   | 50 031 000  | 42 467 000  |
| Lignite                    | 60 273 000  | 63 060 000  | 61 144 000   | 52 855 000  | 47 300 000  |
| Romania                    |             |             |              |             |             |
| Anthracite & Bituminous    | 1 068 507   | 784 433     | 538 092      | 410 765     | 428 368     |
| Lignite                    | 22 156 556  | 25 232 160  | 23 319 839   | 21 653 000  | 15 161 420  |
| Russia                     | 386 000 000 | 410 000 000 | 439 000 000  | 439 000 000 | 398 000 000 |
| Serbia                     |             |             |              |             |             |
| Bituminous                 | 105 000     | 79 000      | 101 000      | 108 000     | 30 000      |
| Lignite (b)                | 37 934 000  | 39 353 000  | 37 253 000   | 38 420 000  | 39 330 000  |
| Brown coal                 | 355 000     | 342 000     | 277 000      | 350 000     | 306 000     |
| Slovakia                   |             |             |              |             |             |
| Lignite                    | 195 000     | 56 000      | 169 000      | 270 000     | 211 600     |
| Brown coal                 | 1 622 000   | 1 619 000   | 1 257 000    | 1 157 000   | 745 000     |
| Slovenia                   |             |             |              |             |             |
| Lignite                    | 3 348 889   | 3 355 664   | 3 216 735    | 3 218 696   | 3 259 309   |
| Spain                      |             |             |              |             |             |
| Anthracite                 | 736 035     | 370 445     | 292 898      | —           | —           |
| Bituminous                 | 365 872     | 791 303     | 483 159      | —           | —           |
| Sub-bituminous             | 730 470     | 1 833 357   | 1 630 088    | —           | —           |
| Turkey                     |             |             |              |             |             |
| Anthracite                 | 1 881 664   | 1 764 028   | 1 620 682    | 1 805 118   | 1 613 624   |
| Lignite                    | 77 896 048  | 84 303 492  | 97 017 695   | 92 993 461  | 84 265 524  |
| Ukraine                    |             |             |              |             |             |
| Bituminous (c)             | 31 630 000  | 24 167 000  | 26 254 000   | 25 530 400  | 24 168 300  |
| United Kingdom             |             |             |              |             |             |
| Bituminous (d)             | 4 178 000   | 3 041 000   | 2 782 000    | 2 591 000   | 1 673 000   |
| Botswana                   | 1 873 547   | 2 215 782   | 2 482 313    | 2 110 891   | 1 939 700   |
| Congo, Democratic Republic |             |             |              |             |             |
| Bituminous                 | 8 200       | * 8 000     | * 8 000      | * 8 000     | * 8 000     |
| Eswatini (Swaziland)       |             |             |              |             |             |
| Anthracite                 | 158 418     | 202 277     | 144 375      | 109 926     | 161 768     |
| Ethiopia                   |             |             |              |             |             |
| Lignite                    | 14 582      | 35 000      | 2 767        | * 2 800     | * 2 800     |
| Malawi                     | 43 338      | 45 230      | 49 753       | 54 728      | 54 876      |
| Mozambique                 |             |             |              |             |             |
| Bituminous                 | 5 500 000   | 11 260 000  | 12 926 416   | 10 339 536  | 8 041 211   |
| Niger                      | 246 631     | 233 792     | 221 580      | 225 920     | 246 880     |
| Nigeria                    |             |             |              |             |             |
| Bituminous                 | 51 000      | 56 000      | 53 000       | 60 000      | 49 000      |
| South Africa               |             |             |              |             |             |
| Anthracite                 | 2 612 215   | 2 886 078   | 3 316 837    | 3 077 839   | 4 301 386   |
| Bituminous                 | 248 399 455 | 249 456 924 | 249 939 594  | 251 332 874 | 244 090 581 |
| Tanzania                   |             |             |              |             |             |
| Bituminous                 | 276 030     | 563 053     | 627 652      | 712 136     | 689 989     |
| Zambia                     |             |             |              |             |             |
| Bituminous                 | 129 470     | 208 608     | 361 871      | 335 042     | * 400 000   |
| Zimbabwe                   |             |             |              |             |             |
| Bituminous                 | 1 635 800   | 2 928 000   | 3 347 500    | 2 729 922   | 2 750 883   |
| Canada                     | 61 461 000  | 60 866 000  | 54 600 000   | 51 801 000  | 40 791 647  |
| Mexico                     |             |             |              |             |             |
| Bituminous                 | 13 676 593  | 12 748 000  | * 12 000 000 | * 1 000 000 | * 7 000 000 |
| USA                        |             |             |              |             |             |
| Anthracite                 | 1 509 856   | 1 734 636   | 1 719 706    | 2 368 120   | 2 151 782   |
| Bituminous                 | 293 286 820 | 320 642 381 | 326 777 482  | 307 431 973 | 215 789 949 |
| Sub-bituminous             | 299 530 054 | 318 812 663 | 305 613 307  | 282 577 367 | 222 923 550 |
| Lignite                    | 66 299 871  | 61 381 007  | 51 733 060   | 48 245 042  | 44 773 678  |

## Production of coal

tonnes (metric)

| Country                 | 2016          | 2017          | 2018          | 2019          | 2020            |
|-------------------------|---------------|---------------|---------------|---------------|-----------------|
| Argentina               |               |               |               |               |                 |
| Bituminous              | 17 000        | 14 000        | 17 000        | 16 000        | 14 000          |
| Brazil                  |               |               |               |               |                 |
| Bituminous & lignite    | 7 005 281     | 4 818 058     | 5 017 000     | 5 963 000     | 6 042 000       |
| Chile                   |               |               |               |               |                 |
| Bituminous              | 114 887       | 70 281        | 38 021        | 41 385        | 25 778          |
| Lignite                 | 2 410 284     | 2 425 109     | 2 256 656     | 1 565 169     | 165 784         |
| Colombia                |               |               |               |               |                 |
| Anthracite (e)          | 29 721        | 25 051        | * 26 000      | * 25 400      | * 14 500        |
| Coking coal             | 4 411 104     | 5 981 970     | * 4 900 000   | * 4 860 000   | * 2 780 000     |
| Other bituminous coal   | 86 582 319    | 84 542 025    | * 81 000 000  | * 79 860 000  | * 45 650 000    |
| Peru                    |               |               |               |               |                 |
| Anthracite & Bituminous | 266 208       | 301 050       | 216 581       | 181 010       | 114 864         |
| Venezuela               |               |               |               |               |                 |
| Bituminous              | 900 000       | 500 000       | 200 000       | 100 000       | 200 000         |
| Afghanistan (f)         | 1 698 200     | 2 191 400     | 2 444 600     | 2 139 200     | 56 620          |
| Bangladesh (g)          | 1 021 638     | 1 160 658     | 923 276       | 805 696       | 811 138         |
| Bhutan                  | 117 783       | 161 527       | 186 824       | 184 785       | 72 838          |
| Burma                   | 506 262       | 677 774       | 1 200 619     | 1 941 558     | * 1 942 000     |
| China                   | 3 411 000 000 | 3 524 000 000 | 3 698 000 000 | 3 846 000 000 | * 3 850 000 000 |
| India                   |               |               |               |               |                 |
| Bituminous (h)          | 657 868 000   | 675 400 000   | 728 718 000   | 729 023 000   | 716 084 000     |
| Lignite (h)             | 45 230 000    | 46 644 000    | 44 282 000    | 42 185 000    | 36 615 000      |
| Indonesia               |               |               |               |               |                 |
| Anthracite & Bituminous | 456 197 775   | 461 248 184   | 557 772 940   | 616 159 594   | 563 728 255     |
| Iran                    |               |               |               |               |                 |
| Bituminous (i)          | 1 340 000     | 1 496 000     | * 1 650 000   | * 1 600 000   | * 1 600 000     |
| Kazakhstan              |               |               |               |               |                 |
| Bituminous              | 97 308 600    | 101 797 300   | 107 576 600   | 104 809 100   | 104 084 100     |
| Lignite                 | 5 750 400     | 6 094 500     | 6 560 800     | 5 928 900     | 5 422 100       |
| Korea (Rep. of)         |               |               |               |               |                 |
| Anthracite              | 1 727 000     | 1 485 000     | 1 201 920     | 1 084 000     | 1 019 298       |
| Korea, Dem. P.R. of     | 35 741 000    | 21 738 000    | * 18 250 000  | * 18 000 000  | * 17 000 000    |
| Kyrgyzstan              | 1 851 300     | 1 870 400     | 2 395 200     | 2 606 000     | 2 488 400       |
| Laos                    |               |               |               |               |                 |
| Anthracite              | 138 809       | 133 284       | 142 994       | 161 494       | 320 231         |
| Lignite                 | 13 097 121    | 13 439 492    | 15 903 277    | 15 263 562    | 14 366 628      |
| Malaysia                | 2 414 765     | 2 988 212     | 2 652 813     | 3 459 122     | 2 978 248       |
| Mongolia                | 35 522 300    | 48 145 100    | 51 401 300    | 55 799 400    | 43 844 800      |
| Nepal                   |               |               |               |               |                 |
| Sub-bituminous (j)      | 1 722         | 7 270         | 11 522        | 61 179        | 69 418          |
| Pakistan (c)(g)         | 3 749 312     | 3 953 992     | 4 470 000     | 5 371 865     | * 5 300 000     |
| Philippines             |               |               |               |               |                 |
| Bituminous              | 11 211 254    | 11 932 328    | 11 755 360    | 13 751 291    | 12 951 291      |
| Tajikistan              | 1 361 400     | 1 759 700     | 1 903 015     | 2 024 789     | 2 029 139       |
| Thailand                |               |               |               |               |                 |
| Lignite                 | 17 069 712    | 16 258 637    | 14 851 950    | 14 071 710    | 13 250 574      |
| Uzbekistan              |               |               |               |               |                 |
| Bituminous              | 160 000       | 124 000       | 181 000       | 249 100       | 263 700         |
| Lignite                 | 3 707 000     | 3 915 000     | 3 993 400     | 3 806 000     | 3 868 100       |
| Vietnam                 |               |               |               |               |                 |
| Anthracite              | 38 735 000    | 38 409 000    | 42 384 000    | 47 158 000    | 48 377 000      |
| Australia               |               |               |               |               |                 |
| Bituminous (f)          | 443 449 000   | 435 889 000   | 457 325 000   | 462 994 000   | 426 303 000     |
| Brown coal (g)          | 59 757 000    | 56 095 000    | 45 062 000    | 42 256 000    | 40 372 000      |
| New Zealand             |               |               |               |               |                 |
| Bituminous              | 1 205 388     | 1 212 126     | 1 318 966     | 1 291 197     | 1 128 917       |
| Sub-bituminous          | 1 348 199     | 1 386 950     | 1 604 454     | 1 454 956     | 1 392 075       |
| Lignite                 | 313 035       | 319 487       | 307 378       | 287 830       | 297 690         |
| World total             | 7 474 000 000 | 7 681 000 000 | 8 022 000 000 | 8 105 000 000 | 7 658 000 000   |

See notes on the following page

## Production of coal

### Note(s)

- (1) There is no international agreement as to the separate definition of lignite and brown coal. In some cases they are distinguished. Elsewhere both may be aggregated under one or other term.
  - (2) Data for coking coal is not always distinguished from other types of bituminous coal. The term "bituminous" in this table may include coking coal where the latter is not separately shown.
  - (3) Where no sub-commodity is shown the figures relate to all ranks of coal.
- (a) Spitzbergen: not including production from mines controlled by Russia
  - (b) Excluding production in Kosovo
  - (c) Including lignite
  - (d) Including anthracite
  - (e) May also include other types of coal
  - (f) Including sub-bituminous
  - (g) Years ended 30 June of that stated
  - (h) Years ended 31 March following that stated
  - (i) Years ended 20 March following that stated
  - (j) Years ended 15 July of that shown

## Mine production of cobalt

tonnes (metal content)

| Country                    | 2016    | 2017    | 2018    | 2019    | 2020    |
|----------------------------|---------|---------|---------|---------|---------|
| Finland                    | 2 260   | * 1 900 | 1 377   | 1 454   | 1 559   |
| Russia                     | 8 600   | 4 900   | 5 450   | 5 500   | 5 700   |
| Botswana                   | 248     | —       | —       | —       | —       |
| Congo, Democratic Republic | 68 822  | 82 461  | 109 402 | 77 964  | 85 856  |
| Madagascar                 | 3 660   | 3 090   | 2 890   | 2 947   | 963     |
| Morocco (a)                | 2 081   | 1 924   | 1 806   | 2 397   | 2 416   |
| South Africa (a)           | 1 101   | 1 062   | 1 007   | 1 027   | 960     |
| Zambia (a)                 | 5 276   | 2 649   | 1 766   | 1 271   | 367     |
| Zimbabwe                   | 409     | 445     | 403     | 400     | 956     |
| Canada                     | 7 148   | 6 058   | 5 608   | 5 132   | 4 279   |
| Cuba                       | * 4 700 | * 4 900 | * 5 000 | * 5 200 | * 5 500 |
| USA                        | 690     | 640     | 590     | 500     | * 600   |
| Brazil                     | 852     | 185     | 8       | —       | —       |
| China                      | 9 293   | 10 237  | 2 241   | * 2 000 | * 2 500 |
| Indonesia                  | * 350   | * 350   | * 350   | * 350   | * 350   |
| Philippines                | 4 400   | 3 700   | 5 400   | 6 700   | 3 600   |
| Vietnam                    | 134     | —       | —       | —       | —       |
| Australia (b)              | 6 020   | 5 221   | 5 616   | 5 693   | 5 632   |
| New Caledonia              | 3 188   | 2 780   | 2 104   | 1 703   | 2 197   |
| Papua New Guinea           | 2 191   | 3 308   | 3 275   | 2 915   | 2 941   |
| World total                | 131 000 | 136 000 | 154 000 | 123 000 | 126 000 |

### Note(s)

- (1) There is frequently a considerable disparity between the cobalt content of ore raised and cobalt actually recovered.
  - (2) In many countries it is not clear whether cobalt that is known to be present in the extracted ore is subsequently recovered, nor whether the reported figure is contained or recovered cobalt.
  - (3) Consequently, the figures in this table may relate either to cobalt recovered or to cobalt contained in ore raised.
  - (4) In addition to the countries listed, cobalt is contained within copper ores in Poland but this is not currently recovered.
- (a) Metal and/or refined
  - (b) Years ended 30 June of that stated



## Production of refined cobalt

tonnes (metric)

| Country                        | 2016   | 2017   | 2018    | 2019     | 2020     |
|--------------------------------|--------|--------|---------|----------|----------|
| Belgium (a)                    | 6 329  | 6 987  | 6 360   | * 6 500  | * 6 500  |
| Finland                        | 12 393 | 13 585 | 14 295  | 14 283   | 15 148   |
| France                         | 119    | 277    | 48      | —        | —        |
| Norway                         | 3 541  | 3 473  | 4 166   | 4 354    | 4 384    |
| Russia                         | 3 092  | 2 077  | * 1 800 | * 1 900  | * 1 800  |
| Congo, Democratic Republic (b) | 82     | 120    | 68      | —        | —        |
| Madagascar                     | 3 273  | 3 053  | 2 850   | 2 897    | 963      |
| Morocco                        | 2 081  | 1 924  | 1 806   | 2 397    | 2 416    |
| South Africa (c)               | 1 101  | 1 062  | 1 007   | 1 027    | 897      |
| Zambia                         | 4 725  | 2 520  | 1 613   | 1 271    | —        |
| Canada (d)                     | 6 302  | 5 152  | 6 349   | 6 075    | 5 965    |
| Brazil                         | 400    | 185    | 8       | —        | —        |
| China (a)                      | 45 046 | 69 600 | 78 360  | * 86 000 | * 86 000 |
| India                          | * 100  | * 100  | —       | —        | —        |
| Japan                          | 4 305  | 4 159  | 3 669   | 3 680    | 3 467    |
| Australia                      | 3 200  | 3 042  | 3 244   | 3 700    | 3 300    |
| New Caledonia (e)              | 2 531  | 2 302  | 1 662   | 1 240    | 681      |

### Note(s)

(1) Refined cobalt can be in the form of metal, oxides, carbonates, sulphates and many other compounds. Efforts are made to avoid double-counting but it is not always possible to be certain.

(a) Some refined cobalt production in China is recorded in Belgium

(b) Excludes white alloy and matte which are believed to be further processed in Belgium and elsewhere

(c) Includes metal and cobalt contained in sulphate

(d) Including oxides

(e) Carbonate

## Mine production of copper

tonnes (metal content)

| Country                    | 2016       | 2017       | 2018       | 2019       | 2020        |
|----------------------------|------------|------------|------------|------------|-------------|
| Albania                    | 218        | —          | 2 601      | 3 551      | 3 070       |
| Armenia                    | 93 248     | 102 847    | 76 166     | 97 870     | 90 154      |
| Azerbaijan                 | 1 941      | 1 991      | 1 645      | 2 210      | 2 591       |
| Bulgaria                   | 70 573     | 73 003     | 69 841     | 70 927     | * 72 500    |
| Cyprus                     | 1 754      | 1 293      | 908        | 703        | —           |
| Finland                    | 47 488     | 53 144     | 46 755     | 32 592     | 35 494      |
| Georgia                    | * 14 000   | * 15 000   | 15 704     | 9 547      | 10 036      |
| North Macedonia            | 10 200     | 9 000      | 8 000      | 7 100      | 12 582      |
| Poland                     | 424 000    | 419 000    | 401 300    | 449 000    | 442 000     |
| Portugal                   | 74 453     | 63 812     | 49 064     | 41 553     | 32 032      |
| Romania                    | 7 300      | 7 400      | 8 722      | 9 200      | 9 100       |
| Russia                     | 702 300    | 761 100    | 870 500    | 812 400    | 924 100     |
| Serbia                     | 41 300     | 44 800     | 44 100     | 44 000     | 52 000      |
| Slovakia                   | 39         | 32         | 21         | 17         | 20          |
| Spain                      | 167 736    | 198 353    | 187 714    | 170 556    | 179 814     |
| Sweden                     | 78 992     | 104 450    | 106 142    | 99 332     | 100 065     |
| Turkey                     | * 100 000  | 83 000     | 79 600     | 73 500     | 107 000     |
| Botswana                   | 12 415     | 1 239      | 1 462      | —          | —           |
| Congo, Democratic Republic | 1 023 687  | 1 094 638  | 1 225 227  | 1 420 386  | 1 587 459   |
| Eritrea                    | 25 300     | 7 900      | 17 300     | 16 008     | 21 725      |
| Mauritania                 | 32 820     | 28 791     | 28 138     | 29 620     | 28 491      |
| Morocco                    | 31 800     | 35 400     | 32 400     | * 34 000   | * 34 000    |
| Namibia                    | 16 653     | 15 534     | 15 177     | 16 108     | 10 853      |
| South Africa               | 65 257     | 65 503     | 46 900     | 52 501     | 29 068      |
| Tanzania                   | * 17 400   | * 11 500   | * 10 000   | * 10 000   | * 12 000    |
| Zambia                     | 725 359    | 786 731    | 851 089    | 797 518    | 869 061     |
| Zimbabwe                   | 9 101      | 8 839      | 9 077      | 8 700      | 7 900       |
| Canada                     | 693 059    | 597 194    | 548 011    | 560 781    | 584 608     |
| Dominican Republic         | 9 725      | 9 618      | 8 588      | 6 047      | 2 193       |
| Mexico                     | 766 129    | 742 246    | 696 580    | 713 704    | 732 863     |
| Panama                     | —          | —          | —          | 147 480    | 205 548     |
| USA                        | 1 430 000  | 1 260 000  | 1 220 000  | 1 260 000  | * 1 200 000 |
| Argentina                  | 81 900     | 33 300     | 17 400     | —          | —           |
| Bolivia                    | 8 718      | 7 219      | 5 216      | 4 478      | 2 822       |
| Brazil                     | 337 600    | 384 542    | 385 800    | 363 300    | 352 600     |
| Chile                      | 5 552 600  | 5 503 500  | 5 831 600  | 5 787 400  | 5 733 100   |
| Colombia                   | 8 493      | 9 355      | 9 918      | 7 641      | 9 356       |
| Ecuador                    | 2 009      | 410        | 2 112      | 495        | 2 170       |
| Peru                       | 2 353 859  | 2 445 585  | 2 437 035  | 2 455 440  | 2 150 126   |
| Burma                      | * 95 000   | * 116 000  | * 180 000  | * 219 000  | * 186 000   |
| China                      | 1 900 188  | 1 706 400  | 1 615 234  | 1 683 700  | 1 723 100   |
| India (a)                  | 30 500     | 31 800     | 34 100     | 28 000     | 22 800      |
| Indonesia                  | 728 000    | 622 030    | 651 136    | 351 000    | 507 000     |
| Iran                       | 282 000    | 295 621    | 310 000    | 310 000    | 315 000     |
| Kazakhstan                 | 474 800    | 557 800    | 635 500    | 562 100    | 551 800     |
| Korea, Dem. P.R. of        | 12 600     | 1 800      | * 2 000    | * 2 000    | * 2 000     |
| Kyrgyzstan                 | 8 200      | 7 500      | 7 200      | 7 000      | 5 100       |
| Laos                       | 177 939    | 153 304    | 154 948    | 140 935    | 91 300      |
| Mongolia                   | 335 700    | 310 700    | 308 400    | 297 500    | 290 900     |
| Pakistan                   | * 14 000   | 10 052     | 12 538     | 13 049     | 13 200      |
| Philippines                | 83 649     | 68 156     | 69 933     | 71 892     | 60 856      |
| Saudi Arabia               | 27 500     | 36 279     | 57 300     | 67 300     | 75 400      |
| Tajikistan                 | 2 500      | 6 100      | 8 500      | * 8 500    | —           |
| Uzbekistan                 | 135 000    | 140 100    | 141 200    | 137 300    | 142 800     |
| Vietnam                    | 22 636     | 21 451     | 26 235     | 30 192     | 37 994      |
| Australia                  | 947 555    | 849 121    | 910 896    | 925 157    | 879 522     |
| Papua New Guinea           | 80 022     | 105 419    | 96 287     | 99 398     | 82 500      |
| World total                | 20 400 000 | 20 000 000 | 20 600 000 | 20 600 000 | 20 600 000  |

Note(s)

(a) Years ended 31 March following that stated

## Smelter production of copper

tonnes (metric)

| Country                    | 2016       | 2017       | 2018       | 2019       | 2020        |
|----------------------------|------------|------------|------------|------------|-------------|
| Armenia                    | 12 920     | 12 051     | 8 831      | —          | —           |
| Bulgaria                   | 245 000    | 322 700    | 316 900    | 255 200    | * 320 000   |
| Finland                    | 145 189    | 133 197    | 157 288    | 133 378    | 148 438     |
| Germany                    | 342 800    | 332 600    | 311 200    | 288 600    | 312 600     |
| Norway                     | 28 123     | 22 695     | 20 590     | 21 962     | 20 535      |
| Poland                     | 446 902    | 457 549    | 461 865    | 489 242    | 462 868     |
| Russia                     | 665 000    | 730 000    | 789 000    | 790 500    | 815 200     |
| Serbia                     | 61 000     | 68 200     | 66 200     | 82 400     | 88 000      |
| Spain                      | 292 300    | 272 000    | 284 800    | 245 800    | 257 700     |
| Sweden                     | 131 500    | 150 000    | 150 000    | 135 900    | 155 000     |
| Turkey                     | 46 200     | 53 400     | 85 400     | 83 700     | 78 900      |
| Congo, Democratic Republic | —          | —          | —          | * 2 000    | 107 800     |
| Namibia                    | 40 181     | 40 476     | 48 971     | 45 953     | 49 392      |
| South Africa               | 51 000     | 52 600     | 33 300     | 20 000     | 10 000      |
| Tanzania                   | * 10 000   | * 10 000   | * 10 000   | * 10 000   | * 10 000    |
| Zambia (a)                 | 698 100    | 787 900    | 828 700    | 638 500    | 750 600     |
| Canada                     | 304 349    | 289 400    | 290 100    | 290 000    | 290 000     |
| Mexico                     | 267 843    | 270 213    | 286 242    | 277 654    | 283 683     |
| USA                        | 563 000    | 470 000    | 536 000    | 466 000    | 315 000     |
| Brazil                     | 188 500    | 118 800    | 125 500    | 115 400    | 85 400      |
| Chile                      | 1 365 300  | 1 264 600  | 1 246 100  | 1 011 200  | 1 206 300   |
| Peru                       | 309 469    | 316 882    | 327 821    | 294 315    | 342 738     |
| China                      | 6 115 035  | 6 424 200  | 6 575 016  | 7 082 700  | * 7 700 000 |
| India                      | 773 000    | 823 100    | 491 500    | 344 300    | 243 200     |
| Indonesia                  | 255 700    | 245 800    | 258 800    | 246 100    | 276 900     |
| Iran                       | 153 400    | 114 200    | 204 100    | 201 100    | 223 300     |
| Japan                      | 1 289 885  | 1 192 179  | 1 263 456  | 1 169 664  | 1 277 303   |
| Kazakhstan                 | 289 400    | 296 500    | 308 900    | 311 000    | 319 100     |
| Korea (Rep. of)            | 510 000    | 510 000    | 530 000    | 520 000    | 513 900     |
| Oman                       | 3 481      | 264        | —          | —          | —           |
| Pakistan                   | * 14 000   | 10 052     | 12 538     | 13 049     | 13 200      |
| Philippines                | 215 000    | 240 000    | 170 900    | 217 800    | 247 000     |
| Uzbekistan                 | * 100 000  | * 100 000  | 117 000    | 147 300    | 148 000     |
| Vietnam                    | 11 600     | 11 500     | 15 100     | 19 200     | 19 200      |
| Australia                  | 445 202    | 359 832    | 360 993    | 401 277    | 399 292     |
| World total                | 16 400 000 | 16 500 000 | 16 700 000 | 16 400 000 | 17 500 000  |

### Note(s)

(1) This table shows primary metal in the form of blister and anode produced from concentrates, and may include copper produced from scrap but this is excluded when it can be separately identified.

(a) Including leach cathodes

## Production of refined copper

tonnes (metric)

| Country                    | 2016       | 2017       | 2018       | 2019       | 2020       |
|----------------------------|------------|------------|------------|------------|------------|
| Austria                    | 103 215    | 109 800    | 107 200    | 128 200    | 129 400    |
| Belgium                    | 366 700    | 398 900    | 390 200    | 356 600    | 321 400    |
| Bulgaria                   | 216 428    | 228 457    | 224 098    | 207 196    | 225 000    |
| Cyprus                     | 1 754      | 1 293      | 908        | 703        | —          |
| Finland                    | 145 189    | 133 197    | 139 100    | 120 400    | 145 847    |
| Germany                    | 671 400    | 694 400    | 672 400    | 629 700    | 643 000    |
| Italy                      | 6 600      | 8 700      | 7 500      | 9 800      | 1 500      |
| North Macedonia            | 1 396      | 958        | 768        | 719        | 722        |
| Norway                     | 28 123     | 22 695     | 20 590     | 21 962     | 20 535     |
| Poland                     | 535 597    | 522 022    | 501 817    | 565 588    | 560 364    |
| Russia                     | 860 100    | 949 000    | 1 016 000  | 1 028 000  | 1 055 000  |
| Serbia                     | 61 309     | 67 179     | 72 087     | 74 000     | 70 900     |
| Spain                      | 429 400    | 415 200    | 423 800    | 386 700    | 399 700    |
| Sweden                     | 207 220    | 219 462    | 224 487    | 201 345    | 225 987    |
| Turkey                     | 52 400     | 95 000     | 126 300    | 116 000    | 126 100    |
| Ukraine                    | 27 100     | 25 186     | 24 901     | 20 409     | 24 335     |
| Congo, Democratic Republic | 818 925    | 825 346    | 999 513    | 1 160 223  | 1 138 200  |
| Egypt                      | * 4 000    | * 4 000    | * 4 000    | * 4 000    | * 4 000    |
| Namibia                    | 16 391     | 15 466     | 15 177     | 15 743     | 10 641     |
| South Africa               | 53 900     | 66 200     | 43 900     | 20 000     | * 10 000   |
| Zambia                     | 426 400    | 466 200    | 458 200    | 264 500    | 378 400    |
| Zimbabwe                   | —          | —          | 100        | —          | —          |
| Canada                     | 314 183    | 330 386    | 291 250    | 281 176    | 276 100    |
| Mexico                     | 462 300    | 436 000    | 423 500    | 428 100    | 415 100    |
| USA                        | 1 226 000  | 1 080 000  | 1 110 000  | 1 030 000  | 918 000    |
| Argentina                  | * 14 000   | * 14 000   | * 14 000   | * 14 000   | * 14 000   |
| Bolivia                    | 2 199      | 2 269      | 3 300      | 3 100      | 1 800      |
| Brazil                     | 225 558    | 143 000    | 147 000    | 174 000    | 109 900    |
| Chile                      | 2 612 500  | 2 429 500  | 2 461 200  | 2 269 100  | 2 329 300  |
| Peru                       | 331 324    | 335 329    | 336 798    | 307 862    | 256 322    |
| Burma                      | 92 560     | * 115 100  | 179 000    | 218 000    | * 185 000  |
| China                      | 8 420 611  | 8 915 100  | 9 023 965  | 9 784 238  | 10 025 300 |
| India                      | 773 300    | 823 100    | 550 600    | 826 303    | 697 109    |
| Indonesia                  | 253 460    | 270 769    | 274 641    | 257 977    | 278 377    |
| Iran (a)                   | 193 028    | 160 128    | 247 384    | 250 130    | 280 000    |
| Japan                      | 1 553 133  | 1 488 080  | 1 594 517  | 1 495 359  | 1 580 086  |
| Kazakhstan                 | 408 435    | 426 191    | 438 115    | 472 327    | 477 016    |
| Korea (Rep. of)            | 644 788    | 663 327    | 673 364    | 665 727    | 657 000    |
| Laos                       | 78 714     | 62 941     | 71 268     | 71 651     | 39 730     |
| Mongolia                   | 15 010     | 14 689     | 14 175     | 11 758     | 9 488      |
| Oman (b)                   | 3 481      | 264        | —          | —          | —          |
| Philippines                | 185 100    | 205 000    | 170 800    | 217 300    | 220 900    |
| Uzbekistan                 | * 100 000  | * 100 000  | 107 400    | 147 300    | 148 000    |
| Vietnam                    | 11 600     | 11 500     | 15 100     | 19 200     | 19 200     |
| Australia                  | 474 954    | 386 249    | 377 036    | 426 739    | 426 997    |
| World total                | 23 400 000 | 23 700 000 | 24 000 000 | 24 700 000 | 24 900 000 |

### Note(s)

(1) Figures relate to both primary and secondary refined copper, whether electrolytic or fire refined. Metal recovered from secondary materials by remelting alone is excluded.

(2) In addition to the countries listed, Albania and Colombia produce refined copper.

(a) Years ended 20 March following that stated

(b) Sales

## Production of diamond

Carats

| Country                    | 2016        | 2017        | 2018        | 2019        | 2020        |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| Russia                     | 40 322 030  | 42 614 780  | 43 161 058  | 45 271 212  | 31 186 551  |
| Angola                     | 9 021 767   | 9 438 802   | 8 408 688   | 9 149 746   | 7 734 281   |
| Botswana                   | 20 954 000  | 22 900 000  | 27 373 000  | 23 687 000  | 16 868 000  |
| Cameroon (a)               | * 3 000     | * 3 500     | * 3 600     | * 3 500     | * 4 200     |
| Central African Republic   | 10 654      | 47 637      | 13 572      | 26 235      | 55 926      |
| Congo                      | 12 107      | 46 758      | 47 579      | 2 963       | 11 157      |
| Congo, Democratic Republic | 15 523 000  | 18 891 800  | 15 131 210  | 13 469 699  | 10 782 600  |
| Ghana                      | 143 005     | 86 925      | 57 531      | 33 789      | 25 292      |
| Guinea                     | 112 796     | 181 450     | 292 707     | 229 180     | 128 575     |
| Ivory Coast                | 20 235      | 7 361       | 5 678       | 3 990       | 4 015       |
| Lesotho                    | 342 014     | 1 126 409   | 1 294 283   | 1 113 526   | 481 243     |
| Liberia                    | 60 367      | 60 636      | 75 554      | 55 936      | 54 599      |
| Namibia                    | 1 584 168   | 1 815 709   | 2 091 781   | 1 745 281   | 1 484 290   |
| Sierra Leone               | 549 502     | 288 260     | 739 600     | 824 430     | 669 000     |
| South Africa               | 8 450 758   | 9 685 235   | 9 911 460   | 7 177 435   | 8 478 398   |
| Tanzania                   | 216 032     | 304 456     | 381 302     | 416 750     | 147 191     |
| Togo                       | —           | 2           | —           | 16          | —           |
| Zimbabwe                   | 2 102 873   | 2 507 862   | 3 252 418   | 2 119 189   | 2 670 458   |
| Canada                     | 11 103 500  | 23 198 761  | 22 789 001  | 18 491 388  | 15 035 711  |
| Brazil                     | 183 500     | 254 896     | 250 940     | 165 992     | 124 548     |
| Guyana                     | 139 890     | 52 161      | 62 111      | 54 993      | 19 240      |
| China                      | * 127       | * 230       | * 99        | * 51        | * 21        |
| India (b)                  | 36 491      | 39 699      | 38 437      | 28 816      | 13 917      |
| Australia                  | 13 958 000  | 17 135 000  | 14 008 054  | 12 154 544  | 9 980 000   |
| World total                | 124 800 000 | 150 700 000 | 149 400 000 | 136 200 000 | 106 000 000 |

### Note(s)

(1) This table does not show production of synthetic diamond.

(2) So far as possible the amounts shown include estimates for artisanal and/or illegal production.

(a) Including artisanal production

(b) Years ended 31 March following that stated

## Production of diatomite

tonnes (metric)

| Country         | 2016      | 2017      | 2018      | 2019      | 2020      |
|-----------------|-----------|-----------|-----------|-----------|-----------|
| Armenia         | 25 486    | 23 465    | * 20 000  | * 20 000  | * 20 000  |
| Czech Republic  | 26 000    | 34 000    | 31 000    | 43 000    | 46 000    |
| Denmark         |           |           |           |           |           |
| Moler (a)       | 114 375   | 110 000   | 99 375    | 108 750   | 115 000   |
| France          | * 90 000  | * 90 000  | * 90 000  | * 90 000  | * 90 000  |
| Germany         | 54 764    | 56 721    | 58 340    | 53 802    | 51 511    |
| Hungary         | 738       | 1 173     | 853       | 860       | * 850     |
| Poland          | 500       | 500       | 580       | 680       | 810       |
| Russia          | 47 300    | 52 000    | 50 600    | * 51 000  | * 51 000  |
| Spain (b)       | 48 231    | 70 550    | 61 056    | 62 741    | 59 250    |
| Turkey          | 61 722    | 169 584   | 242 789   | 220 757   | 100 327   |
| Algeria         | 2 500     | 2 439     | 2 468     | 2 437     | * 2 500   |
| Ethiopia (c)    | * 5 000   | * 5 000   | * 5 000   | * 5 000   | * 5 000   |
| Kenya           | 1 238     | 1 406     | 1 548     | 921       | 928       |
| Mozambique      | 728       | 179       | 66 429    | 72 439    | * 70 000  |
| Costa Rica      | 1 953     | 1 953     | 1 839     | 1 546     | 3 763     |
| Mexico          | 96 686    | 96 374    | 152 058   | 129 274   | 144 102   |
| USA (d)         | 686 000   | 768 000   | 957 000   | 768 000   | * 770 000 |
| Argentina       | 57 113    | 70 419    | 72 436    | 84 610    | 98 575    |
| Brazil          | 16 408    | * 16 000  | * 16 000  | * 16 000  | * 16 000  |
| Chile           | 26 937    | 27 557    | 24 736    | 21 328    | 21 477    |
| Peru            | 107 265   | 96 590    | 96 532    | 91 103    | 85 406    |
| China           | * 420 000 | * 420 000 | * 420 000 | * 150 000 | * 150 000 |
| Iran (e)        | 15 000    | 2 660     | 3 000     | —         | *—        |
| Japan           | * 100 000 | * 100 000 | * 40 000  | * 40 000  | * 40 000  |
| Korea (Rep. of) | 20 564    | 133 741   | 25 902    | 40 910    | 65 240    |
| Australia (f)   | 1 033     | 1 081     | 7         | 3         | 10        |
| New Zealand     | * 44 000  | * 44 000  | * 44 000  | * 44 000  | * 44 000  |
| World total     | 2 100 000 | 2 400 000 | 2 600 000 | 2 100 000 | 2 100 000 |

### Note(s)

(1) In addition to the countries listed, Georgia, Saudi Arabia and Vietnam may produce diatomite.

(a) Moler is an impure diatomite containing a large proportion of clay

(b) Including the mineral Tripoli

(c) Years ended 7 July of that stated

(d) Sold or used by producers

(e) Years ended 20 March following that stated

(f) Years ended 30 June of that stated

## Production of feldspar

tonnes (metric)

| Country         | 2016        | 2017        | 2018        | 2019        | 2020        |
|-----------------|-------------|-------------|-------------|-------------|-------------|
| Austria         | 35 000      | 35 000      | 35 000      | 35 000      | 35 000      |
| Czech Republic  | 454 000     | 368 000     | 449 000     | 460 000     | 419 000     |
| Finland         | 18 549      | 14 926      | 17 469      | 17 997      | 16 137      |
| France          | * 550 000   | * 550 000   | * 500 000   | * 500 000   | * 450 000   |
| Germany         | 284 569     | 276 747     | 252 693     | 235 289     | 213 899     |
| Greenland       | —           | —           | —           | 19 456      | * 20 000    |
| Italy           | 4 000 000   | 3 500 000   | 4 000 000   | 4 000 000   | * 4 000 000 |
| North Macedonia | 19 919      | 21 237      | 30 813      | 29 519      | 13 115      |
| Norway          | 70 015      | 87 894      | * 88 000    | * 88 000    | * 88 000    |
| Poland          | 510 900     | 568 600     | 593 100     | 593 004     | * 590 000   |
| Portugal (a)    | 249 996     | 228 491     | 227 367     | 179 584     | 204 843     |
| Romania         | 4 501       | * 7 500     | * 23 000    | * 20 000    | * 20 000    |
| Russia          | 278 142     | 281 236     | 294 411     | * 294 000   | * 294 000   |
| Serbia          | * 20 000    | * 20 000    | * 20 000    | * 20 000    | * 20 000    |
| Slovakia        | 8 000       | 15 800      | 17 000      | 19 100      | 29 140      |
| Spain           | 634 519     | 819 218     | 616 229     | 855 139     | 750 000     |
| Sweden          | 22 000      | 22 000      | 28 000      | * 28 000    | * 20 000    |
| Turkey          | 11 033 578  | 10 273 573  | 11 474 040  | 9 447 810   | 10 050 911  |
| Ukraine (b)     | 33 627      | * 30 000    | * 30 000    | * 30 000    | * 30 000    |
| Algeria         | 168 400     | * 170 000   | * 170 000   | * 170 000   | * 170 000   |
| Egypt           | * 230 000   | * 230 000   | * 230 000   | * 230 000   | * 230 000   |
| Ethiopia (c)    | * 600       | * 600       | * 600       | * 600       | * 600       |
| Morocco         | 35 000      | 40 000      | 40 000      | * 40 000    | * 40 000    |
| Nigeria         | 34 144      | 27 660      | 41 355      | 33 226      | 19 453      |
| South Africa    | 131 023     | 116 400     | 76 803      | 76 255      | 48 392      |
| Sudan           | 49 000      | 29 000      | 36 000      | 15 300      | 25 000      |
| Cuba            | 3 900       | 3 600       | 3 000       | 2 100       | 14 100      |
| Guatemala       | 30 428      | 29 000      | 30 257      | 28 771      | 25 578      |
| Mexico          | 127 213     | 233 050     | 209 770     | 304 084     | 318 120     |
| USA             | 470 000     | 440 000     | 550 000     | 450 000     | * 420 000   |
| Argentina       | 155 217     | 88 465      | 56 500      | * 56 500    | 32 000      |
| Brazil          | 486 684     | 400 000     | 400 000     | * 400 000   | * 400 000   |
| Chile           | 6 352       | 4 421       | 2 789       | 55          | 329         |
| Colombia        | 151 759     | 150 334     | 141 794     | 179 856     | 80 601      |
| Ecuador         | 148 506     | 92 871      | 43 197      | * 40 000    | * 40 000    |
| Peru            | 16 630      | 14 930      | 31 588      | 29 134      | 24 132      |
| Uruguay         | 460         | 370         | 380         | 100         | 208         |
| Venezuela       | * 75 000    | 36 313      | * 30 000    | * 30 000    | * 30 000    |
| China           | * 2 684 000 | * 1 618 000 | * 2 000 000 | * 2 000 000 | * 2 000 000 |
| India (d)       | 6 434 788   | 4 270 245   | * 4 300 000 | * 4 300 000 | * 4 300 000 |
| Indonesia       | * 18 000    | * 39 000    | * 11 000    | * 11 000    | * 11 000    |
| Iran (e)        | 784 412     | 1 339 453   | 2 057 640   | 2 368 957   | * 2 400 000 |
| Japan (f)       | * 100 000   | * 100 000   | * 100 000   | * 100 000   | * 100 000   |
| Korea (Rep. of) | 654 398     | 717 177     | 617 166     | 396 896     | 415 426     |
| Malaysia        | 441 857     | 412 004     | 414 441     | 206 798     | —           |
| Pakistan (g)    | 316 289     | 273 468     | 151 743     | 346 236     | * 340 000   |
| Philippines     | 46 630      | * 46 600    | * 46 600    | * 46 600    | * 46 000    |
| Saudi Arabia    | 188 000     | 197 000     | 206 000     | 216 000     | * 220 000   |
| Sri Lanka       | 25 211      | 26 137      | * 26 000    | * 26 000    | * 26 000    |
| Taiwan          | 0           | —           | 0           | —           | —           |
| Thailand        | 1 232 532   | 1 385 925   | 1 117 803   | 1 251 143   | 1 105 344   |
| Uzbekistan      | * 4 300     | * 4 300     | 26 841      | 47 784      | 63 595      |
| Vietnam         | * 100 000   | * 100 000   | * 100 000   | * 100 000   | * 100 000   |
| Australia (g)   | * 36 000    | * 5 000     | * 5 100     | * 5 800     | * 6 700     |
| World total     | 33 614 000  | 29 762 000  | 31 970 000  | 30 382 000  | 30 317 000  |

See notes on the following page.

## Production of feldspar

### Note(s)

- (a) Includes feldspathic sand
- (b) Figures do not include production from Crimea or Sevastopol
- (c) Years ended 6 July of that stated
- (d) Years ended 31 March following that stated
- (e) Years ended 20 March following that stated
- (f) Including weathered granite feldspar
- (g) Years ended 30 June of that stated

## Production of fluorspar

tonnes (metric)

| Country             | 2016        | 2017        | 2018        | 2019        | 2020        |
|---------------------|-------------|-------------|-------------|-------------|-------------|
| Bulgaria            | 4 400       | —           | —           | —           | —           |
| Germany             | 52 552      | 45 375      | 49 197      | 79 959      | 64 933      |
| Russia              | 3 000       | 2 700       | 6 000       | 4 000       | 32 000      |
| Spain               | 162 989     | 154 931     | 176 188     | 145 185     | 185 958     |
| Turkey              | 10 339      | 20 150      | 6 200       | 14 400      | 19 896      |
| United Kingdom      | * 12 000    | * 11 000    | * 11 000    | * 14 000    | * 15 000    |
| Egypt (a)           | 1 000       | * 1 000     | * 1 000     | * 1 000     | * 1 000     |
| Kenya               | 42 656      | 6 945       | —           | —           | —           |
| Morocco             | 73 920      | 75 509      | 87 874      | 73 240      | * 70 000    |
| Namibia             | 1 495       | —           | —           | —           | —           |
| South Africa        | * 165 000   | * 257 000   | * 242 000   | * 210 000   | * 320 000   |
| Mexico              | 655 555     | 741 678     | 1 182 058   | 1 231 465   | 914 597     |
| Argentina           | 14 222      | 13 696      | 7 924       | 1 500       | 4 800       |
| Brazil              | 18 260      | 24 000      | 26 000      | * 18 000    | * 18 000    |
| Colombia            | 75          | 57          | 46          | —           | —           |
| Afghanistan         | * 4 000     | * 4 000     | * 4 000     | * 4 000     | * 4 000     |
| China               | * 3 470 000 | * 3 700 000 | * 4 000 000 | * 4 300 000 | * 4 300 000 |
| India (b)           | 1 175       | 1 314       | 1 079       | 1 315       | 1 052       |
| Iran (c)            | 122 427     | 36 511      | 89 102      | 49 705      | * 50 000    |
| Kazakhstan          | * 100 000   | * 100 000   | * 100 000   | 87 800      | * 88 000    |
| Korea, Dem. P.R. of | * 5 000     | * 7 000     | * 7 000     | * 7 000     | * 6 000     |
| Kyrgyzstan          | * 4 000     | * 4 000     | * 4 000     | * 4 000     | * 4 000     |
| Mongolia            | 167 700     | 108 900     | 101 200     | 156 100     | 127 300     |
| Pakistan (a)        | 9 494       | 2 263       | 2 777       | 4 208       | * 4 000     |
| Thailand            | 31 948      | 5 500       | 16 700      | 17 747      | 9 807       |
| Vietnam             | * 217 900   | 234 905     | 238 702     | 238 003     | 219 920     |
| World total         | 5 400 000   | 5 600 000   | 6 400 000   | 6 700 000   | 6 500 000   |

### Note(s)

- (1) In addition, the USA produced the following amounts of fluorspar equivalent in fluorosilicic acid derived from processing phosphate rock ('000 t): 2016: 44; 2017: 40; 2018: 33; 2019: 29; 2020: 22.

- (a) Years ended 30 June of that stated
- (b) Years ended 31 March following that stated
- (c) Years ended 20 March following that stated



## Production of primary gallium

tonnes (metric)

| Country             | 2016 | 2017 | 2018 | 2019 | 2020  |
|---------------------|------|------|------|------|-------|
| Germany             | 23   | —    | —    | —    | —     |
| Russia              | * 13 | * 13 | * 13 | * 13 | * 13  |
| Ukraine             | * 9  | * 4  | * 4  | * 8  | * 4   |
| China               | 171  | 319  | 404  | 357  | * 350 |
| Japan               | 3    | 3    | 3    | 3    | 3     |
| Korea (Rep. of) (a) | * 3  | * 3  | * 3  | * 3  | * 2   |

### Note(s)

- (1) Accurate data for gallium is difficult to obtain because it is produced only as a by-product of bauxite or zinc processing using proprietary techniques. As a consequence, this table may not be complete.
- (2) Lower grade production is often subsequently refined to higher grade material which complicates the collection of data as double counting is a significant risk.
- (3) In addition to the above primary production, there is also believed to be significant production of refined gallium from scrap recycling.

(a) Primary production only

## Production of germanium metal

tonnes (metric)

| Country | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------|------|------|------|------|------|
| Finland | 0    | —    | —    | —    | —    |
| Russia  | * 6  | * 6  | * 6  | * 5  | * 5  |
| USA (a) | * 2  | * 3  | * 3  | * 3  | * 3  |
| China   | 82   | 79   | 95   | 86   | * 85 |

### Note(s)

- (1) Germanium is also believed to be recovered from imported or domestic material in Belgium, Canada, Germany, Japan.

(a) Including production of secondary metal

## Mine production of gold

In addition to 'industrial scale' gold mines around the world, a significant quantity of gold is mined by small scale or artisanal producers, both on a legal and illegal basis. In some countries the quantities involved with artisanal mining can be relatively large. The compilation of reliable data for the quantity produced by artisanal mining in each country is difficult, particularly where the actions are illegal. Artisanal mining can be seasonal, temporary and highly variable, on both geographical and temporal scales.

Where possible, the table attempts to include estimates for artisanal mining of gold in order that the calculated world totals are as complete as possible. However, the difficulties noted above mean that these totals cannot be completely accurate and they are consequently rounded to a greater degree than the individual country figures may suggest is appropriate. This is an attempt to convey the level of uncertainty associated with these total figures.

For clarity, additional comments on specific countries are shown below (there may be other countries where artisanal mining also occurs; these comments are not intended to be exhaustive):-

Benin – artisanal gold mining is known to take place but no reliable estimates are available. It has been estimated to be in the region of 20 kg per year, but it could be larger in some years.

Burkina Faso – official figures include 332 kg for artisanal mining in 2020; 259 kg in 2019; 306 kg in 2018; 150 kg in 2017; and 235 kg in 2016. It is believed the actual artisanal production is likely to be higher.

Burma – the figures shown in the table are reported and are believed to include artisanal mining.

Cameroon – all gold mining is currently small scale or artisanal. Available estimates vary widely, from as low as 500 kg per year to something in the order of 1500 kg or 2000 kg per year.

Central African Republic – artisanal gold mining is known to take place. No reliable estimates are available but it could be in the region of 50-80 kg per year. The figures shown are reported and it is assumed these are artisanal but they may not be fully inclusive in every year.

Colombia – Artisanal and small-scale mining, both legal and illegal, is extensive within Colombia. Although the government is taking steps to improve the licencing of legal artisanal mining and also to crack down on illegal activities, during the last decade it is believed that illegal mining has grown to the extent that it has become more widespread than legal mining. Some illegal mining and trade is thought to be coordinated by organised crime groups. It is possible that illegally mined material is brought into or out of the country without being recorded. It can therefore be assumed that the total mine production of gold significantly exceeds the reported figure, however it has not been possible to make a reliable estimate for this additional material.

Congo – all gold mining is believed to be small scale or artisanal and it is believed there are more than 200 locations where this occurs. A nominal estimate of 150 kg per year is shown in the table.

Costa Rica – all gold mining is currently artisanal. The figures in the table are reported by an official source.

Democratic Republic of Congo – artisanal mining is quite extensive, the figures shown include estimates for artisanal mining ranging from 4000 to 11000 kg per year.

Equatorial Guinea – artisanal gold mining is very likely to be taking place but no accurate information is available. A nominal estimate of 200 kg per year is included in the table but it could be more or less than this.

Ethiopia – small scale and artisanal gold mining is significant, but not all of it is illegal because some artisanal miners operate under a formal license. A proportion of the gold mined from artisanal sources is sold to the national bank but illicit sales to non-licensed buyers remains widespread. National bank purchases of gold from artisanal sources in fiscal year 2014/15 amounted to 5473 kg; in 2015/16 to 4145 kg and in 2016/17 to 1920 kg. Actual artisanal production could be higher.

France (French Guiana) – the table includes an estimate of 5000 kg to 9000 kg per year for artisanal mining which is not included in the official reported figures.

Gabon – attempts to regulate artisanal gold mining are being undertaken with gold from artisanal miners being purchased by a government agency from 2013. The figures in the table include 50 kg for artisanal mining in 2016 and 40 kg in 2017. Data from 2018 is all artisanal.

Germany – legal artisanal mining is known to occur along the Rhine Valley but the amounts recovered are unknown. A nominal estimate has been included.

Ghana – gold produced by artisanal mining is purchased by a state-owned marketing organisation but official figures of the quantity vary depending on the source. They are also reported in publications produced by under the Extractive Industry Transparency Initiative (EITI). In the table below the following figures are included for artisanal production: 35 292 kg in 2016; 45 992 kg in 2017; 61 812 kg in 2018; 49 398 kg in 2019; and 36 547 in 2020.

Guinea – the figures in the table include reported figures for artisanal mining. However, actual artisanal production may be higher than those reported because it is difficult to distinguish the material derived from artisanal mining within Guinea from that moved across the border from Mali or other countries.

Ivory Coast – efforts are being made within Ivory Coast to rationalise artisanal mining as part of the EITI process. Reports suggest that it varies considerably from year to year and may range between 1000 kg and 10 000 kg per year. A conservative estimate has been added to reported industrial scale mine output of 4500 kg per year for 2016 to 2020.

Kenya – The reported figures shown are believed to include artisanal mining but in reality, it could be much higher.

Liberia – official figures are believed to include both the industrial mine and artisanal production.

Madagascar – estimates of artisanal mining are in the order of 100 kg to 3000 kg per year.

Mali – the figures include an estimate for artisanal mining of 6000 kg per year, but it is likely the real figure varies more than this from year to year.

Nigeria – Official reporting of artisanal gold production by the Ministry is low (160 kilograms in 2020). However, imports of gold to other countries from Nigeria are reported to be much larger, which suggests the quantity of production may be higher and the estimates in the table reflect this. The EITI reports plans for formalising the artisanal mining sector and for the support of 10 000 artisanal miners in five regions of the federation.

Panama – artisanal mining is known to occur but no reliable estimates are available. A nominal estimate of 100 kg per year has been included.

Papua New Guinea – official estimates of "alluvial and small scale" mining is approximately 3500 to 4000 kg per year.

Rwanda – it is believed that the reported and estimated figures are actually gold that originated in Nigeria or other countries in the region but is not recorded in those countries.

Senegal – an estimate of 2200kg has been added to each year for artisanal mining.

South Sudan – artisanal mining is known to occur but reliable estimates are difficult to obtain. It has been estimated as approximately 200 kg per year.

Tanzania – Artisanal mining is known to occur, in 2016 this was reported as approximately 30 kg per year.

Togo – the reported figures are exports of gold which is transiting through the country. It is believed the majority of this originates in Burkina Faso from artisanal mining but it is not recorded within the production figures for that country. Consequently, it is recorded here for completeness. Some artisanal mining is also believed to occur in Togo.

Venezuela – artisanal mining is believed to be quite extensive and increasing. Estimates of quantities vary widely from less than 1000 kg up to 9000 kg per year. The Central Bank aims to purchase all the artisanally mined gold, however, actual output is believed to be larger than the reported figures and therefore higher estimates have been used.

Vietnam – artisanal mining is believed to be taking place at the site of a former industrial mine. No information is available to indicate likely scale.

## Mine production of gold

kilograms

| Country                    | 2016     | 2017     | 2018      | 2019      | 2020      |
|----------------------------|----------|----------|-----------|-----------|-----------|
| Armenia                    | * 3 730  | * 4 270  | 4 908     | 5 825     | 5 317     |
| Azerbaijan                 | 1 895    | 3 667    | 3 476     | 3 712     | 3 572     |
| Bulgaria                   | 7 918    | 8 682    | 8 995     | 7 467     | 9 349     |
| Cyprus                     | —        | 48       | 47        | 33        | 61        |
| Finland                    | 8 865    | 9 102    | 8 732     | 7 927     | 8 668     |
| Georgia                    | * 3 600  | * 3 000  | 4 299     | 4 052     | 4 768     |
| Germany                    | —        | —        | —         | * 10      | * 10      |
| Greece                     | 86       | 749      | 2 839     | 2 333     | 2 177     |
| North Macedonia            | 664      | 972      | 767       | 593       | 448       |
| Poland                     | 402      | 572      | 523       | 674       | 878       |
| Romania                    | * 500    | * 500    | * 500     | * 500     | * 500     |
| Russia                     | 253 200  | 270 300  | 279 900   | 305 100   | 308 600   |
| Serbia (a)                 | 805      | 1 199    | 839       | 1 452     | 1 550     |
| Slovakia                   | 466      | 447      | 515       | 346       | 336       |
| Spain                      | 1 291    | 1 605    | 1 991     | 1 913     | 1 602     |
| Sweden                     | 6 463    | 7 858    | 7 866     | 7 972     | 8 249     |
| Turkey                     | 24 030   | 23 090   | 28 000    | 38 000    | 42 100    |
| United Kingdom             | (n) 6    | —        | —         | * 50      | 28        |
| Algeria                    | 102      | 137      | 286       | 70        | 58        |
| Benin                      | * 7      | * 5      | * 5       | * 5       | * 5       |
| Botswana                   | 833      | 913      | 1 105     | 942       | 851       |
| Burkina Faso               | 38 520   | 46 436   | 52 898    | 51 500    | 62 470    |
| Burundi                    | 396      | 953      | 598       | 573       | 1 003     |
| Cameroon                   | 542      | 713      | 478       | * 450     | * 450     |
| Central African Republic   | 33       | 118      | 142       | 359       | * 360     |
| Congo                      | * 150    | * 150    | * 150     | * 150     | * 150     |
| Congo, Democratic Republic | * 37 100 | * 37 100 | * 43 800  | * 43 000  | * 40 000  |
| Egypt                      | 17 139   | 16 941   | 14 694    | 14 946    | 14 069    |
| Equatorial Guinea          | * 200    | * 200    | * 200     | * 200     | * 200     |
| Eritrea                    | * 1 400  | * 2 700  | * 3 700   | * 3 700   | * 3 800   |
| Eswatini (Swaziland)       | —        | —        | 12        | 6         | 1         |
| Ethiopia (b)               | 8 573    | 5 390    | 3 495     | 3 299     | 7 500     |
| Gabon                      | * 1 070  | * 600    | * 100     | * 100     | * 100     |
| Ghana                      | 114 488  | 133 303  | 149 067   | 142 371   | 125 114   |
| Guinea                     | 29 192   | 46 847   | 25 823    | 27 708    | 91 800    |
| Ivory Coast                | * 25 100 | * 25 200 | * 24 500  | * 29 100  | * 29 600  |
| Kenya                      | 200      | 503      | 472       | 395       | 150       |
| Liberia                    | 4 704    | 6 071    | 7 289     | 5 068     | 4 396     |
| Madagascar                 | 586      | 2 833    | (c) 3 000 | (c) 2 100 | (c) 1 500 |
| Mali                       | * 48 200 | * 51 500 | * 61 000  | * 63 000  | * 65 000  |
| Mauritania                 | 7 126    | 9 096    | 9 235     | 13 554    | 14 125    |
| Morocco (a)                | 352      | 220      | 386       | 221       | 143       |
| Mozambique                 | 201      | 166      | 507       | 430       | 488       |
| Namibia                    | 6 756    | 7 469    | 6 632     | 6 526     | 6 254     |
| Niger                      | 999      | 914      | 6 207     | 5 224     | 2 361     |
| Nigeria (c)                | * 21 000 | * 19 000 | * 18 000  | * 9 000   | * 4 900   |
| Rwanda (c)                 | * 4 900  | * 8 800  | * 18 100  | * 11 400  | * 11 800  |
| Senegal                    | 9 700    | 11 700   | 14 900    | 16 700    | 14 600    |
| Sierra Leone               | 188      | 142      | 464       | 75        | 14        |
| South Africa               | 142 077  | 136 833  | 117 150   | 105 185   | 95 883    |
| South Sudan                | * 200    | * 200    | * 200     | * 200     | * 200     |
| Sudan                      | 93 400   | 107 300  | 93 600    | 55 400    | 35 700    |
| Tanzania                   | 45 155   | 43 489   | 39 304    | 48 408    | 55 508    |
| Togo (c)                   | * 14 000 | * 20 000 | * 10 000  | * 10 000  | * 10 000  |

## Mine production of gold

kilograms

| Country                | 2016      | 2017      | 2018      | 2019      | 2020      |
|------------------------|-----------|-----------|-----------|-----------|-----------|
| Uganda                 | 11        | 4         | 12        | 10        | 7         |
| Zambia (d)             | 4 610     | 4 373     | 4 044     | 4 522     | 3 994     |
| Zimbabwe               | 22 747    | 23 929    | 35 054    | 29 429    | 20 873    |
| Canada                 | 163 888   | 171 111   | 194 155   | 182 783   | 182 352   |
| Costa Rica             | 750       | 4 255     | 3 699     | 4 500     | 599       |
| Dominican Republic     | 37 932    | 35 242    | 31 633    | 31 801    | 28 117    |
| Guatemala              | 3 910     | 1 647     | —         | —         | —         |
| Honduras               | 2 607     | 2 596     | 2 148     | 1 760     | 1 790     |
| Mexico                 | 132 413   | 126 820   | 141 143   | 133 893   | 110 361   |
| Nicaragua              | 8 391     | 7 367     | 7 703     | 9 190     | 7 935     |
| Panama                 | * 100     | * 100     | * 100     | 1 969     | 2 733     |
| USA                    | 232 230   | 236 986   | 225 528   | 200 370   | * 190 000 |
| Argentina              | 56 648    | 60 956    | 58 397    | 53 092    | 35 000    |
| Bolivia                | 21 876    | 28 726    | 31 599    | 42 000    | 23 207    |
| Brazil                 | 93 921    | 79 717    | 85 198    | 89 988    | 98 922    |
| Chile                  | 46 333    | 37 911    | 37 066    | 38 455    | 33 895    |
| Colombia (d)           | 63 157    | 43 158    | 35 905    | 37 476    | 47 635    |
| Ecuador                | 6 761     | 6 368     | 8 212     | 6 293     | 9 086     |
| France (French Guiana) | * 6 100   | * 8 000   | * 10 000  | * 10 000  | * 10 000  |
| Guyana                 | 22 167    | 20 334    | 19 069    | 19 963    | 18 209    |
| Peru                   | 153 006   | 151 964   | 140 211   | 128 413   | 88 053    |
| Suriname               | 12 926    | 25 844    | 26 002    | 24 516    | 21 215    |
| Uruguay (e)            | 993       | 1 062     | 465       | —         | —         |
| Venezuela              | * 5 000   | * 8 100   | * 9 100   | * 9 000   | * 9 000   |
| Burma (f)              | 1 446     | 1 620     | 70        | * 230     | * 230     |
| China (a)              | 453 490   | 426 142   | 401 119   | 380 230   | 365 340   |
| India (a)              | 1 595     | 1 651     | 1 664     | 1 724     | 1 127     |
| Indonesia              | 80 868    | 99 030    | 111 858   | 108 690   | 65 900    |
| Iran (g)               | 4 537     | 7 100     | * 7 000   | * 7 000   | * 7 000   |
| Japan                  | 6 455     | 6 369     | 6 453     | 6 312     | 7 590     |
| Kazakhstan             | 74 737    | 85 339    | 100 299   | 106 559   | 116 964   |
| Korea (Rep. of)        | 205       | 283       | 239       | 181       | 189       |
| Korea, Dem. P.R. of    | * 10 000  | * 10 000  | * 10 000  | * 10 000  | * 10 000  |
| Kyrgyzstan             | 19 700    | 20 500    | 19 000    | 21 200    | 19 300    |
| Laos                   | 6 729     | 5 988     | 5 579     | 5 207     | 4 251     |
| Malaysia               | 2 249     | 2 124     | 2 978     | 3 151     | 1 715     |
| Mongolia               | 9 331     | 19 849    | 20 655    | 16 251    | 20 226    |
| Philippines            | 23 053    | 22 749    | 20 765    | 20 646    | 17 564    |
| Saudi Arabia           | 7 010     | 10 333    | 11 831    | 12 258    | 12 715    |
| Taiwan                 | —         | 4         | 4         | 6         | 3         |
| Tajikistan             | * 5 000   | * 5 500   | 6 432     | 8 100     | 8 764     |
| Thailand               | 4 250     | —         | —         | —         | —         |
| Uzbekistan             | * 89 000  | * 89 900  | 92 716    | * 93 000  | * 100 000 |
| Vietnam                | 584       | 557       | 570       | 540       | 618       |
| Australia              | 290 767   | 292 022   | 313 028   | 326 304   | 327 889   |
| Fiji                   | 1 500     | 1 425     | 1 281     | 1 106     | 1 090     |
| New Zealand            | 9 866     | 10 288    | 10 045    | 8 217     | 5 860     |
| Papua New Guinea       | 61 952    | 65 246    | 67 562    | 74 386    | * 52 500  |
| World total            | 3 250 000 | 3 350 000 | 3 400 000 | 3 330 000 | 3 190 000 |

### Note(s)

- (1) In several countries substantial amounts of gold produced in small and/or artisanal operations are not recorded in the official statistics. Estimates have been added where possible but these have varying degrees of uncertainty.
- (2) In addition to the countries listed, Cambodia, El Salvador, Haiti, Malawi, Pakistan, Paraguay and Portugal may produce gold.

- (a) Metal production  
 (b) Years ended 7 July of that stated  
 (c) Exports  
 (d) Contained in blister copper, refinery muds and electrolytic copper  
 (e) Year ended 30 November of the year stated  
 (f) Years ended 31 March following that stated  
 (g) Years ended 20 March following that stated

## Production of graphite

tonnes (metric)

| Country             | 2016      | 2017      | 2018      | 2019       | 2020       |
|---------------------|-----------|-----------|-----------|------------|------------|
| Austria (a)(b)      | 23 200    | 24 400    | 25 000    | 20 000     | 16 500     |
| Germany             | 502       | 422       | 222       | 207        | 108        |
| Norway              | 9 600     | * 9 600   | * 9 600   | * 9 600    | * 9 000    |
| Russia              | 19 400    | 25 200    | 17 800    | 16 600     | * 16 600   |
| Turkey              | —         | —         | 16 752    | 9 990      | 15 205     |
| Ukraine             | 14 630    | 14 855    | * 15 000  | * 15 000   | * 15 000   |
| Madagascar          | 5 419     | 12 852    | 54 587    | (c) 53 400 | (c) 48 500 |
| Mozambique          | 580       | 802       | 106 773   | 113 803    | 18 159     |
| Namibia             | —         | 2 216     | 3 456     | —          | —          |
| Zimbabwe            | 5 622     | 1 577     | 174       | * 100      | * 150      |
| Canada              | * 16 000  | 14 000    | 11 000    | 11 000     | 8 841      |
| Mexico              | 14 200    | 10 310    | 4 130     | 2 342      | 1 461      |
| Brazil (d)          | 61 687    | 90 000    | 95 000    | 96 000     | * 95 000   |
| China (e)           | * 625 000 | * 625 000 | * 693 000 | * 700 000  | * 650 000  |
| India (a)(f)        | 122 438   | 33 649    | 39 030    | 31 991     | 30 168     |
| Korea, Dem. P.R. of | * 50 000  | * 140 000 | * 40 000  | * 40 000   | * 30 000   |
| Pakistan (g)        | 360       | —         | 1 840     | —          | *—         |
| Sri Lanka           | 3 908     | 3 769     | * 3 700   | * 3 700    | * 3 700    |
| World total         | 900 000   | 1 000 000 | 1 100 000 | 1 100 000  | 1 000 000  |

### Note(s)

(1) This table includes all forms of amorphous and crystalline graphite but excludes synthetic material.

- (a) Crude
- (b) Sales
- (c) Exports
- (d) Including beneficiated and directly shipped material
- (e) Including flake graphite
- (f) Years ended 31 March following that stated
- (g) Years ended 30 June of that stated

## Production of gypsum

tonnes (metric)

| Country                  | 2016        | 2017        | 2018        | 2019        | 2020        |
|--------------------------|-------------|-------------|-------------|-------------|-------------|
| Albania                  | 131 925     | 104 120     | 102 016     | 106 070     | 111 880     |
| Armenia                  | 14 800      | 14 300      | 20 400      | 22 900      | 29 000      |
| Austria (a)              | 674 346     | 712 469     | 836 862     | 900 217     | 900 619     |
| Azerbaijan               | 110 501     | 33 037      | 12 043      | 14 675      | 24 198      |
| Bosnia & Herzegovina (a) | 61 231      | 99 001      | 122 421     | 130 778     | 140 994     |
| Bulgaria                 | 60 900      | 88 000      | * 88 000    | * 88 000    | * 88 000    |
| Croatia                  | 170 107     | 200 932     | 267 155     | 279 719     | 308 214     |
| Cyprus                   | 682 024     | 703 079     | 625 721     | 623 545     | 646 340     |
| Czech Republic           | 10 000      | 7 000       | 8 000       | 10 000      | 17 000      |
| France (a)(b)            | 1 734 975   | 1 873 581   | 2 836 329   | 1 950 850   | 1 891 190   |
| Georgia                  | 46 670      | 85 468      | 91 699      | 137 831     | 87 655      |
| Germany (a)              | 3 970 000   | 4 450 000   | 4 550 000   | 4 850 000   | 5 200 000   |
| Greece (a)               | 778 000     | 855 000     | 827 300     | 840 000     | 780 000     |
| Hungary                  | —           | 1 564       | 1 280       | 1 185       | * 1 100     |
| Ireland, Republic of     | * 250 000   | * 200 000   | * 200 000   | * 200 000   | * 150 000   |
| Italy (a)                | 617 188     | 469 044     | 188 618     | 298 242     | 163 749     |
| Latvia (a)               | 224 000     | 278 260     | 320 080     | 318 450     | * 320 000   |
| Moldova (c)              | * 300 000   | * 300 000   | * 300 000   | * 300 000   | * 300 000   |
| North Macedonia (a)      | 202 582     | 217 491     | 230 029     | 267 181     | 229 322     |
| Norway (a)(b)            | 82 386      | 87 891      | 89 655      | 102 100     | 94          |
| Poland (a)               | 1 118 484   | 1 108 000   | 1 120 344   | 1 150 000   | 1 132 368   |
| Portugal                 | 255 026     | 152 059     | 232 921     | 209 076     | 210 231     |
| Romania                  | 754 009     | 813 520     | 799 810     | 878 546     | 925 782     |
| Russia                   | * 4 400 000 | * 4 000 000 | * 3 800 000 | * 5 500 000 | * 3 800 000 |
| Slovakia (a)             | 53 000      | 45 700      | 55 000      | 50 000      | 65 560      |
| Spain                    | 8 936 364   | 9 545 228   | 10 593 056  | 11 279 443  | 13 142 429  |
| Switzerland              | * 340 000   | * 330 000   | * 330 000   | * 330 000   | * 320 000   |
| Turkey                   | 10 124 221  | 10 223 112  | 10 896 475  | 7 489 129   | 9 280 864   |
| Ukraine (a)              | 1 303 000   | 1 528 900   | 1 386 400   | 1 409 400   | 1 529 000   |
| United Kingdom           | * 1 600 000 | * 1 300 000 | * 1 400 000 | * 1 600 000 | * 1 300 000 |
| Algeria                  | 2 130 000   | 2 200 000   | 2 500 000   | 2 500 000   | * 2 500 000 |
| Angola                   | * 190 000   | * 190 000   | * 190 000   | * 190 000   | * 190 000   |
| Egypt (a)(d)             | 686 610     | 835 614     | * 800 000   | * 800 000   | * 850 000   |
| Eritrea                  | * 17 000    | * 18 000    | * 18 000    | * 18 000    | * 18 000    |
| Ethiopia (e)             | 89 520      | 74 299      | 52 503      | 53 897      | * 53 900    |
| Guinea                   | 273 245     | * 200 000   | * 200 000   | * 200 000   | * 200 000   |
| Kenya (a)                | 5 760       | * 5 800     | * 5 800     | * 5 800     | * 5 800     |
| Libya                    | 212 000     | 328 000     | 310 000     | * 210 000   | * 210 000   |
| Madagascar               | * 130       | * 130       | —           | —           | —           |
| Mauritania               | * 70 000    | * 70 000    | * 70 000    | * 70 000    | * 70 000    |
| Morocco                  | * 600 000   | * 600 000   | * 600 000   | * 600 000   | * 600 000   |
| Niger                    | —           | 3 395       | 507         | 6 211       | 9 083       |
| Nigeria                  | * 35 000    | * 35 000    | 39 052      | 22 300      | 30 706      |
| South Africa             | 266 811     | 317 990     | 313 909     | 277 102     | 205 542     |
| Sudan                    | 349 236     | 333 000     | 226 000     | 236 000     | 173 000     |
| Tanzania                 | 213 507     | 123 645     | 241 259     | 256 529     | 443 926     |
| Tunisia                  | 902 394     | 944 245     | 984 031     | 1 046 885   | 890 000     |
| Uganda                   | —           | 60          | —           | —           | —           |
| Canada (a)               | 1 704 000   | 3 010 000   | 3 246 000   | 2 446 000   | 2 915 270   |
| Cuba                     | 73 900      | 85 400      | 99 900      | 66 300      | 62 300      |
| Dominican Republic       | 123 553     | 94 595      | 82 896      | 137 143     | 132 575     |
| Guatemala                | 130 616     | 135 154     | 132 897     | 140 901     | 423 282     |
| Honduras                 | 41 750      | * 70 500    | * 62 200    | * 60 000    | * 60 000    |
| Jamaica                  | 49 703      | 46 000      | 94 350      | 55 391      | 65 847      |
| Mexico                   | 7 682 807   | 7 609 704   | 11 275 293  | 7 759 139   | * 7 500 000 |
| Nicaragua                | 41 800      | 66 800      | 70 341      | 39 925      | 64 573      |
| USA                      | 19 800 000  | 20 700 000  | 21 600 000  | 21 500 000  | 20 600 000  |
| Argentina                | 1 558 390   | 1 275 608   | 897 217     | 761 023     | 499 092     |
| Bolivia                  | 1 181       | * 1 100     | * 1 100     | * 1 100     | * 1 100     |
| Brazil                   | 3 471 328   | 3 400 000   | 3 200 000   | 3 000 000   | * 3 200 000 |
| Chile                    | 934 033     | 1 157 466   | 909 191     | 977 397     | 910 310     |
| Colombia                 | 472 511     | 406 623     | 394 182     | 293 179     | 223 800     |
| Paraguay                 | * 4 500     | * 4 500     | * 4 500     | * 4 500     | * 4 500     |
| Peru                     | 257 423     | 286 657     | 458 479     | 254 382     | 171 093     |

## Production of Gypsum

tonnes (metric)

| Country            | 2016         | 2017         | 2018         | 2019         | 2020         |
|--------------------|--------------|--------------|--------------|--------------|--------------|
| Afghanistan        | * 3 000      | * 3 000      | * 3 000      | * 3 000      | * 3 000      |
| Bhutan             | 317 597      | 328 128      | 461 128      | 490 596      | 331 050      |
| Burma              | 245 789      | 361 015      | 309 343      | 299 316      | * 299 000    |
| China              | * 15 500 000 | * 15 500 000 | * 15 500 000 | * 15 500 000 | * 16 000 000 |
| India (f)(g)       | 1 982 555    | 2 223 870    | 2 151 727    | * 2 000 000  | * 2 000 000  |
| Iran (h)           | 16 376 605   | 13 476 148   | 13 852 269   | 16 147 297   | * 16 000 000 |
| Iraq               | * 1 000 000  | * 1 000 000  | * 1 000 000  | * 1 000 000  | * 1 000 000  |
| Israel             | 147 000      | 116 000      | 75 800       | 72 000       | —            |
| Japan              | * 4 670 000  | * 4 700 000  | * 4 700 000  | * 4 300 000  | * 4 700 000  |
| Jordan             | 1 906 979    | 344 191      | 190 606      | * 200 000    | * 200 000    |
| Kazakhstan         | 137 400      | 133 200      | 121 100      | 78 200       | 94 500       |
| Laos               | 469 436      | 463 039      | 618 783      | 606 387      | 737 749      |
| Mongolia           | 56 000       | * 56 000     | * 56 000     | * 56 000     | * 56 000     |
| Oman               | 5 482 900    | 8 664 700    | 9 666 700    | 10 982 900   | 10 213 900   |
| Pakistan (d)       | 1 871 716    | 2 079 629    | 2 489 000    | 2 265 131    | * 2 200 000  |
| Saudi Arabia       | 3 000 000    | 3 150 000    | 3 307 000    | 3 472 000    | * 3 470 000  |
| Sri Lanka          | 1 996        | 2 213        | * 2 200      | * 2 200      | * 2 200      |
| Syria              | * 10 000     | * 10 000     | * 10 000     | * 10 000     | * 10 000     |
| Tajikistan         | 8 814        | 48 800       | 9 613        | 10 031       | 8 183        |
| Thailand           |              |              |              |              |              |
| Gypsum             | 10 718 622   | 9 253 951    | 9 680 429    | 8 367 700    | 8 012 293    |
| Anhydrite          | 1 240 724    | 1 392 693    | 1 517 228    | 1 419 587    | 1 266 826    |
| Uzbekistan         | * 80 000     | * 80 000     | 323 809      | 279 432      | 288 657      |
| Yemen, Republic of | * 12 000     | * 12 500     | * 9 500      | * 11 500     | * 11 500     |
| Australia (d)      | 3 746 298    | 3 629 716    | 4 066 464    | 4 286 774    | 3 734 078    |
| World total        | 150 400 000  | 151 500 000  | 161 500 000  | 157 200 000  | 157 000 000  |

### Note(s)

- (1) Some countries produce large quantities of synthetic gypsum. Where possible, this output is excluded from the table.  
(2) In addition to the countries listed, Indonesia and Vietnam may also produce gypsum.

- (a) Including anhydrite  
(b) Sales  
(c) Excluding output from the region east of the River Nistru and the Municipality of Bender  
(d) Years ended 30 June of that stated  
(e) Years ended 7 July of that stated  
(f) Years ended 31 March following that stated  
(g) Including selenite  
(h) Years ended 20 March following that stated

## Production of helium

million cubic metres

| Country   | 2016 | 2017 | 2018 | 2019 | 2020 |
|-----------|------|------|------|------|------|
| Poland    | 4    | 4    | 4    | 4    | 4    |
| Russia    | 5    | 5    | 5    | 5    | 5    |
| Algeria   | 10   | 14   | 14   | 14   | * 14 |
| USA       | 66   | 63   | 64   | 68   | * 61 |
| Qatar     | * 50 | * 45 | * 45 | * 45 | * 45 |
| Australia | * 4  | * 4  | * 4  | * 4  | * 4  |

## Refinery production of indium

tonnes (metric)

| Country         | 2016  | 2017  | 2018  | 2019  | 2020  |
|-----------------|-------|-------|-------|-------|-------|
| Belgium         | * 20  | * 20  | * 22  | * 20  | * 20  |
| France          | —     | 30    | 43    | * 40  | * 40  |
| Italy           | * 5   | * 5   | * 5   | * 5   | * 5   |
| Russia          | * 7   | * 7   | * 7   | * 7   | * 7   |
| Canada          | 71    | 67    | * 58  | * 61  | 61    |
| Brazil          | * 5   | * 5   | * 5   | * 5   | * 5   |
| Peru            | 10    | 10    | 11    | 12    | * 10  |
| China           | * 510 | 478   | 483   | 534   | * 500 |
| Japan           | 70    | 70    | 70    | 70    | 70    |
| Korea (Rep. of) | * 100 | * 100 | * 100 | * 100 | * 100 |

### Note(s)

(1) In addition to the countries listed, Kazakhstan is believed to produce small quantities of indium.

## Production of iodine

kilograms

| Country      | 2016        | 2017        | 2018        | 2019        | 2020        |
|--------------|-------------|-------------|-------------|-------------|-------------|
| Azerbaijan   | 207 600     | 198 400     | 185 100     | 190 300     | 182 800     |
| Russia       | 2 952       | 7 844       | 7 895       | 3 112       | * 1 300     |
| USA          | * 1 250 000 | * 1 150 000 | * 1 150 000 | * 1 150 000 | * 1 150 000 |
| Chile        | 18 444 000  | 17 976 000  | 20 216 000  | 20 826 000  | 21 941 000  |
| China        | * 600 000   | * 600 000   | * 600 000   | * 600 000   | * 600 000   |
| Indonesia    | * 35 000    | * 34 000    | * 38 000    | * 40 000    | * 31 000    |
| Iran (a)     | 348 000     | 400 000     | 368 000     | 682 000     | * 700 000   |
| Japan        | 9 993 000   | 8 839 000   | 9 136 000   | 9 122 000   | 8 876 000   |
| Turkmenistan | * 510 000   | 544 000     | * 540 000   | * 600 000   | * 600 000   |
| Uzbekistan   | * 2 000     | * 2 000     | —           | —           | —           |
| World total  | 31 400 000  | 29 800 000  | 32 200 000  | 33 200 000  | 34 100 000  |

### Note(s)

(a) Years ended 20 March following that stated



## Production of iron ore

tonnes (metric)

| Country              | 2016          | 2017          | 2018          | 2019          | 2020          |
|----------------------|---------------|---------------|---------------|---------------|---------------|
| Austria (a)          | 2 777 260     | 2 981 737     | 2 803 536     | 3 242 102     | 3 043 237     |
| Azerbaijan           | 25 500        | —             | —             | *—            | —             |
| Bosnia & Herzegovina | 1 751 800     | 1 621 907     | 1 380 488     | 1 450 205     | 1 427 410     |
| Germany (b)(c)       | 514 004       | * 447 300     | * 448 000     | * 533 700     | * 529 400     |
| Norway               | 1 757 851     | 1 622 477     | 1 700 000     | 1 600 000     | * 1 600 000   |
| Russia               | 101 000 000   | 95 000 000    | 96 100 000    | 97 500 000    | 100 200 000   |
| Sweden               | 31 843 000    | 31 763 000    | 35 774 000    | 38 913 000    | 39 228 000    |
| Turkey               | 7 137 233     | 9 992 455     | 15 650 305    | 14 473 363    | 21 454 649    |
| Ukraine              | 62 876 000    | 60 574 000    | 60 549 000    | 76 134 000    | 78 837 700    |
| Algeria              | 826 000       | * 830 000     | * 830 000     | * 830 000     | * 830 000     |
| Egypt (d)            | 565 229       | 556 934       | * 560 000     | * 560 000     | * 560 000     |
| Guinea               | —             | —             | —             | —             | 644 245       |
| Liberia              | 1 405 195     | 1 604 763     | 4 657 155     | 4 428 645     | 4 874 409     |
| Malawi               | 3 800         | 5 000         | 2 563         | 3 000         | 5 018         |
| Mauritania           | 13 268 061    | 11 813 000    | 10 710 305    | 12 196 491    | 12 515 312    |
| Morocco              | 21 033        | 100 000       | 51 000        | * 51 000      | * 51 000      |
| Namibia              | 8 478         | 2 450         | 3 824         | 15 646        | 66 164        |
| Nigeria              | 1 550         | * 1 550       | 1 582         | 160           | 127           |
| Sierra Leone         | 6 576 576     | 6 531 460     | 968 585       | 722 305       | * 13 000      |
| South Africa (e)     | 66 455 868    | 74 643 475    | 74 263 738    | 72 430 288    | 55 635 308    |
| Tunisia              | 210 697       | 197 965       | 175 853       | 186 519       | 171 858       |
| Uganda               | 2 163         | 2 320         | 4 500         | —             | —             |
| Canada (f)           | 48 999 000    | 51 836 000    | 52 358 000    | 59 013 000    | 60 059 572    |
| Mexico               | 18 317 700    | 17 746 262    | 21 244 460    | 26 089 068    | * 26 000 000  |
| USA (f) (g)          | 41 800 000    | 47 900 000    | 49 500 000    | 46 800 000    | 38 100 000    |
| Bolivia              | 22            | 38 330        | 71 662        | * 56 500      | 26 576        |
| Brazil               | 424 200 000   | 453 703 525   | 450 393 000   | 396 841 000   | * 388 000 000 |
| Chile                | 14 620 000    | 15 426 000    | 14 013 000    | 13 137 000    | 15 553 000    |
| Colombia             | 715 881       | 712 868       | 575 542       | 666 624       | 588 129       |
| Peru                 | 7 663 124     | 8 806 452     | 9 533 871     | 10 120 007    | 8 893 972     |
| Venezuela            | 7 306 000     | 4 601 000     | 2 800 000     | 4 000 000     | 2 600 000     |
| Bhutan               | 28 065        | 32 974        | 37 843        | 36 864        | 14 734        |
| China                | 1 280 893 000 | 1 229 373 000 | 763 374 000   | 844 356 000   | * 845 000 000 |
| India (h)            | 194 584 000   | 201 426 000   | 206 446 000   | 246 081 000   | 204 481 000   |
| Indonesia            | 3 800 000     | 1 955 926     | 1 321 249     | 3 450 000     | * 3 500 000   |
| Iran (i)             | 65 001 032    | 75 843 536    | 93 365 420    | 91 778 118    | * 91 800 000  |
| Kazakhstan           | 35 793 500    | 38 728 200    | 41 876 500    | 45 221 900    | 62 865 000    |
| Korea (Rep. of)      | 444 677       | 310 550       | 380 748       | 342 346       | 575 232       |
| Korea, Dem. P.R. of  | 4 280 000     | 4 473 000     | * 3 500 000   | * 3 000 000   | * 2 500 000   |
| Laos                 | 115 065       | 250 000       | 99 196        | 470 300       | 1 013 042     |
| Malaysia (g)         | 1 914 232     | 3 919 632     | 3 353 634     | 4 160 462     | 5 371 411     |
| Mongolia             | 4 936 200     | 7 694 700     | 6 225 400     | 8 572 200     | 9 224 400     |
| Nepal (j)            | —             | 772           | 396           | 267           | —             |
| Pakistan (d)         | 432 156       | 501 664       | 677 206       | 626 646       | * 620 000     |
| Philippines          | 17 088        | —             | —             | —             | 42 795        |
| Thailand             | —             | 135           | —             | 17 660        | 113 239       |
| Vietnam              | 3 056 000     | 5 515 000     | 5 588 496     | 6 106 000     | 5 239 000     |
| Australia            | 858 025 634   | 885 356 738   | 907 818 648   | 917 045 579   | 918 063 223   |
| New Zealand          | 3 495 818     | 4 008 000     | * 4 000 000   | * 4 000 000   | * 4 000 000   |
| World total          | 3 319 000 000 | 3 360 000 000 | 2 945 000 000 | 3 057 000 000 | 3 016 000 000 |

### Note(s)

- (a) Including micaceous iron oxide
- (b) Including manganiferous iron ore
- (c) Used as aggregate in the construction industry
- (d) Years ended 30 June of that stated
- (e) Including by-product magnetite
- (f) Including by-product iron ore
- (g) Including beneficiated and direct shipping ore
- (h) Years ended 31 March following that stated
- (i) Years ended 20 March following that stated
- (j) Years ended 15 July of that shown

## Production of pig iron

tonnes (metric)

| Country              | 2016          | 2017          | 2018          | 2019          | 2020          |
|----------------------|---------------|---------------|---------------|---------------|---------------|
| Austria              | 5 642 000     | 6 335 000     | 5 269 000     | 5 750 000     | 5 300 000     |
| Azerbaijan           | 2 533         | 315           | —             | 702           | 362           |
| Belgium              | 4 896 000     | 4 860 000     | 4 900 000     | 4 800 000     | 3 600 000     |
| Bosnia & Herzegovina | 778 123       | 738 476       | 664 291       | 744 778       | 739 058       |
| Czech Republic       | 4 165 000     | 3 691 000     | 4 000 000     | 3 635 000     | 3 500 000     |
| Finland              | 2 700 000     | 2 600 000     | 2 700 000     | 2 300 000     | 2 300 000     |
| France               | 9 724 062     | 10 677 830    | 10 529 559    | 9 877 027     | 7 695 671     |
| Germany              | 27 269 000    | 27 816 000    | 27 271 000    | * 25 400 000  | * 23 000 000  |
| Hungary              | 863 000       | 1 311 000     | 1 355 000     | 1 151 000     | 1 000 000     |
| Italy                | (a) 6 044 000 | (a) 5 052 000 | (a) 4 836 000 | 4 606 000     | 3 405 000     |
| Netherlands          | 6 092 000     | 6 145 000     | 6 150 000     | 5 900 000     | 5 400 000     |
| Norway               | 43 000        | 74 100        | 78 800        | 74 200        | * 70 000      |
| Poland               | 4 679 616     | 5 159 128     | 4 787 696     | 4 241 941     | 3 502 468     |
| Romania              | 1 922 001     | 1 766 958     | 1 979 200     | 2 107 300     | 1 800 000     |
| Russia               | 51 900 000    | 52 100 000    | 51 800 000    | 51 200 000    | 52 000 000    |
| Serbia               | 1 154 000     | 1 340 000     | 1 593 000     | 1 577 000     | * 1 500 000   |
| Slovakia             | 3 987 000     | 4 106 000     | 4 200 000     | * 3 100 000   | * 3 000 000   |
| Spain                | 4 115 000     | 4 462 000     | 4 500 000     | 3 900 000     | 2 900 000     |
| Sweden               | 3 079 000     | 3 111 000     | 2 877 000     | 3 172 000     | 2 854 000     |
| Turkey               | 10 304 000    | 10 589 000    | 10 536 000    | 9 900 000     | 10 000 000    |
| Ukraine              | 23 560 000    | 19 797 900    | 20 531 200    | 20 055 900    | 20 238 000    |
| United Kingdom       | 6 142 400     | 5 996 500     | 5 587 900     | 5 621 700     | 5 235 500     |
| Algeria              | 300 000       | 300 000       | 300 000       | * 300 000     | * 300 000     |
| Egypt                | 2 618 000     | 4 700 000     | 5 800 000     | 4 400 000     | 4 800 000     |
| Libya                | 698 852       | 561 956       | 611 763       | 880 470       | 834 550       |
| South Africa         | 5 013 000     | 5 277 000     | 5 400 000     | 4 500 000     | 2 300 000     |
| Canada               | 7 606 000     | 7 914 000     | 8 100 000     | 7 700 000     | 6 400 000     |
| Mexico               | 9 782 000     | 10 256 000    | 10 511 000    | 9 819 000     | * 7 780 000   |
| USA                  | 22 293 000    | 22 395 000    | 24 058 000    | 22 301 000    | 18 300 000    |
| Argentina            | 2 914 000     | 3 402 000     | 3 790 000     | 3 050 000     | 2 455 000     |
| Brazil               | 29 896 000    | 32 392 000    | 32 765 000    | 30 901 000    | 29 655 000    |
| Chile                | 677 000       | 670 000       | 661 000       | 595 000       | 681 000       |
| Colombia             | 225 000       | 203 000       | 205 000       | 207 000       | * 164 000     |
| Paraguay             | 50 000        | 38 000        | 39 000        | 41 000        | * 35 000      |
| Peru                 | 11 000        | —             | —             | —             | —             |
| Venezuela            | 908 000       | 491 000       | 400 000       | 405 000       | 300 000       |
| Bahrain              | 1 260 000     | 1 260 000     | 1 600 000     | 1 450 000     | * 1 500 000   |
| China                | 702 273 300   | 713 619 300   | 779 876 300   | 809 365 000   | 893 100 000   |
| India                | 77 254 000    | 96 313 000    | 106 823 000   | 111 574 000   | 101 400 000   |
| Indonesia            | 2 640 000     | 2 572 000     | 2 967 000     | 3 020 000     | * 3 100 000   |
| Iran                 | 18 264 000    | 21 694 000    | 28 100 000    | 31 000 000    | 32 700 000    |
| Japan                | 80 186 246    | 78 329 729    | 77 327 888    | 74 907 006    | 61 600 469    |
| Kazakhstan           | 3 595 090     | 3 766 322     | 3 174 116     | 3 208 744     | 3 212 375     |
| Korea (Rep. of)      | 46 336 000    | 47 100 000    | 47 124 000    | 47 521 000    | 45 359 000    |
| Korea, Dem. P.R. of  | * 250 000     | * 250 000     | * 200 000     | * 150 000     | * 100 000     |
| Malaysia             | 1 178 000     | 952 000       | 1 230 000     | 4 467 000     | * 4 000 000   |
| Oman                 | 1 439 000     | 1 526 000     | 1 500 000     | 1 750 000     | 1 800 000     |
| Qatar                | 2 506 000     | 2 548 000     | 2 525 000     | 2 423 000     | 752 569       |
| Saudi Arabia         | 5 119 000     | 4 812 000     | 5 000 000     | 4 700 000     | 5 200 000     |
| Taiwan               | 14 890 000    | 14 361 000    | 14 841 000    | 14 510 000    | 13 400 000    |
| United Arab Emirates | 3 479 000     | 3 608 000     | 3 784 000     | 3 700 000     | 3 000 000     |
| Vietnam              | 2 600 000     | 4 250 000     | 8 323 000     | 9 836 000     | * 10 000 000  |
| Australia            | 3 642 000     | 3 758 000     | 3 882 000     | 3 664 000     | 3 700 000     |
| New Zealand          | 670 000       | 683 000       | 700 000       | 672 000       | 600 000       |
| World total          | 1 230 000 000 | 1 268 000 000 | 1 358 000 000 | 1 382 000 000 | 1 418 000 000 |

### Note(s)

(1) The data in this table include sponge iron and direct reduced iron (DRI), where these have been separately identified.

(a) Includes ferro-manganese

## Production of crude steel

tonnes (metric)

| Country                    | 2016       | 2017       | 2018       | 2019        | 2020         |
|----------------------------|------------|------------|------------|-------------|--------------|
| Albania                    | * 50 000   | *—         | *—         | *—          | *—           |
| Austria                    | 7 438 000  | 8 135 000  | 6 885 000  | 7 424 000   | 6 765 000    |
| Azerbaijan                 | 345 340    | 387 258    | 381 617    | 325 895     | 249 317      |
| Belarus                    | 2 265 517  | 2 432 580  | 2 572 862  | 2 717 705   | 2 559 577    |
| Belgium                    | 7 687 000  | 7 842 000  | 7 980 000  | 7 760 000   | 6 120 000    |
| Bosnia & Herzegovina       | 783 045    | 734 518    | 677 443    | 801 000     | 740 194      |
| Bulgaria                   | 527 300    | 652 400    | 666 100    | 565 900     | * 570 000    |
| Croatia                    | —          | —          | 135 800    | 69 126      | 45 273       |
| Czech Republic             | 5 305 000  | 4 553 000  | 4 966 000  | 4 600 000   | 2 900 000    |
| Finland                    | 4 102 000  | 4 003 634  | 4 100 000  | 3 511 000   | 3 482 000    |
| France                     | 14 412 574 | 15 504 683 | 15 387 355 | 14 449 651  | 11 595 698   |
| Germany                    | 42 081 000 | 43 297 000 | 42 435 000 | 39 667 000  | 35 658 000   |
| Greece                     | 1 199 000  | 1 359 000  | 1 467 000  | 1 350 000   | 1 308 000    |
| Hungary                    | 1 279 000  | 1 901 000  | 1 989 000  | 1 769 000   | 1 513 000    |
| Italy                      | 23 312 000 | 24 008 000 | 24 497 000 | 23 192 000  | 20 379 000   |
| Latvia                     | * 4 000    | *—         | *—         | *—          | *—           |
| Luxembourg                 | 2 175 000  | 2 172 000  | 2 228 000  | 2 119 000   | 1 886 000    |
| Moldova (a)                | 126 000    | 455 000    | 497 000    | 392 000     | 465 000      |
| Montenegro                 | 26 246     | 27 638     | 26 552     | 24 262      | 19 364       |
| Netherlands                | 6 917 000  | 6 781 000  | 6 813 000  | 6 657 000   | 6 054 000    |
| North Macedonia            | 239 084    | 271 287    | 269 658    | 262 144     | 236 520      |
| Norway                     | 620 000    | 603 000    | 575 000    | 620 800     | 623 800      |
| Poland                     | 9 160 660  | 10 540 354 | 10 336 483 | 9 123 107   | 7 785 590    |
| Portugal                   | 2 010 000  | 2 075 900  | 2 215 300  | 2 032 800   | 2 202 800    |
| Romania                    | 3 369 582  | 3 442 786  | 3 529 286  | 3 421 199   | 2 818 866    |
| Russia                     | 69 600 000 | 72 968 168 | 74 144 495 | 73 740 141  | * 74 600 000 |
| Serbia                     | 1 172 600  | 1 476 700  | 1 973 400  | 1 929 400   | 1 455 700    |
| Slovakia                   | 4 808 000  | 4 980 000  | 4 947 000  | 3 931 000   | 3 444 000    |
| Slovenia                   | 613 000    | 648 000    | 653 800    | 623 000     | 570 000      |
| Spain                      | 13 654 000 | 14 444 000 | 14 320 500 | 13 934 700  | 10 934 000   |
| Sweden                     | 4 816 800  | 4 926 500  | 4 655 100  | 4 721 100   | 4 409 000    |
| Switzerland                | 1 498 021  | 1 569 963  | 1 561 826  | * 1 500 000 | * 1 500 000  |
| Turkey                     | 33 163 000 | 37 524 000 | 37 311 700 | 33 700 000  | 35 763 000   |
| Ukraine                    | 24 218 000 | 21 334 000 | 21 100 000 | 20 800 000  | 20 600 000   |
| United Kingdom             | 7 634 900  | 7 491 300  | 7 267 700  | 7 218 100   | 7 085 700    |
| Algeria                    | 650 000    | 415 000    | 2 300 000  | * 2 400 000 | * 4 000 000  |
| Congo, Democratic Republic | * 30 000   | * 30 000   | * 30 000   | * 30 000    | * 30 000     |
| Egypt                      | 5 036 000  | 6 870 000  | 7 806 800  | 7 257 000   | 8 229 000    |
| Ethiopia                   | * 690      | * 690      | * 690      | * 600       | * 600        |
| Ghana                      | * 200 000  | * 250 000  | * 250 000  | * 250 000   | * 250 000    |
| Kenya                      | * 20 000   | * 20 000   | * 20 000   | * 20 000    | * 20 000     |
| Libya                      | 491 500    | 421 648    | 396 342    | 606 153     | 538 176      |
| Mauritania                 | * 5 000    | * 5 000    | * 5 000    | * 5 000     | * 5 000      |
| Morocco                    | 520 000    | 550 000    | 520 000    | 500 000     | * 500 000    |
| Nigeria                    | * 100 000  | * 100 000  | * 100 000  | * 100 000   | * 100 000    |
| South Africa               | 6 141 000  | 6 301 000  | 6 327 000  | 6 152 000   | 3 877 000    |
| Tunisia                    | 50 000     | 50 000     | 50 000     | * 50 000    | * 50 000     |
| Uganda                     | * 30 000   | * 30 000   | * 30 000   | * 30 000    | * 30 000     |
| Zimbabwe                   | 2 785      | 1 294      | 1 322      | * 1 300     | * 1 300      |
| Canada                     | 12 672 000 | 13 614 000 | 13 443 100 | 12 897 000  | 11 078 000   |
| Cuba                       | 244 000    | 221 000    | 225 000    | 230 000     | * 185 000    |
| Dominican Republic         | * 60 000   | * 60 000   | * 60 000   | * 60 000    | * 60 000     |
| El Salvador                | 100 000    | 96 000     | 99 000     | 102 000     | 82 000       |
| Guatemala                  | 314 000    | 294 000    | 300 000    | 306 000     | * 243 000    |
| Mexico                     | 18 811 000 | 19 924 000 | 20 204 000 | 18 387 000  | * 16 277 000 |
| USA                        | 78 475 000 | 81 612 000 | 86 607 400 | 87 761 000  | 72 690 000   |
| Argentina                  | 4 126 500  | 4 624 200  | 5 161 700  | 4 645 000   | 3 651 000    |
| Brazil                     | 31 642 000 | 34 778 000 | 35 407 000 | 32 569 000  | 31 415 000   |
| Chile                      | 1 153 000  | 1 158 000  | 1 145 000  | 1 133 000   | 1 182 000    |
| Colombia                   | 1 272 000  | 1 252 800  | 1 219 000  | 1 332 800   | 1 148 900    |
| Ecuador                    | 576 000    | 561 000    | 583 000    | 607 000     | 482 000      |
| Paraguay                   | 35 000     | 24 000     | 25 000     | 26 000      | 22 000       |
| Peru                       | 1 168 000  | 1 207 000  | 1 217 000  | 1 230 000   | 731 000      |
| Uruguay                    | 61 000     | 58 000     | 60 000     | 62 000      | 49 000       |
| Venezuela                  | 553 000    | 443 800    | 129 000    | 50 800      | 29 200       |

## Production of crude steel

tonnes (metric)

| Country              | 2016          | 2017          | 2018          | 2019          | 2020          |
|----------------------|---------------|---------------|---------------|---------------|---------------|
| Burma                | * 200 000     | * 250 000     | * 300 000     | * 350 000     | * 350 000     |
| China                | 807 609 400   | 870 740 900   | 929 038 400   | 996 342 000   | 1 064 732 000 |
| India (b)            | 108 950 000   | 112 783 000   | 131 573 000   | 102 058 000   | 95 122 000    |
| Indonesia            | 4 745 908     | 5 195 000     | 6 183 000     | 7 783 000     | 9 300 000     |
| Iran (c)             | 15 143 286    | 18 143 471    | 19 344 198    | 20 626 585    | 22 630 000    |
| Israel               | * 300 000     | * 300 000     | * 300 000     | * 300 000     | * 300 000     |
| Japan                | 104 775 329   | 104 661 087   | 104 318 836   | 99 284 114    | 83 186 485    |
| Jordan               | * 330 000     | * 330 000     | * 350 000     | * 350 000     | * 350 000     |
| Kazakhstan           | 4 264 114     | 4 657 009     | 4 005 982     | 4 130 601     | 4 009 402     |
| Korea (Rep. of)      | 68 575 000    | 71 080 000    | 72 464 000    | 71 411 000    | 67 082 000    |
| Korea, Dem. P.R. of  | * 1 250 000   | * 1 090 000   | * 810 000     | * 800 000     | * 700 000     |
| Kuwait               | ...           | ...           | ...           | * 1 300 000   | * 1 300 000   |
| Malaysia             | 3 781 668     | 3 772 057     | 4 108 500     | 6 948 500     | 6 618 500     |
| Mongolia             | * 50 000      | * 50 000      | * 50 000      | * 50 000      | * 50 000      |
| Pakistan             | * 3 553 000   | * 4 966 000   | * 4 719 000   | * 3 304 000   | * 3 803 000   |
| Philippines          | 1 075 000     | 1 377 600     | 1 474 800     | 1 915 000     | 892 300       |
| Qatar                | 2 521 000     | 2 645 000     | 2 575 000     | 2 558 000     | 1 218 100     |
| Saudi Arabia         | 5 461 000     | 4 831 000     | 5 200 000     | 8 200 000     | 7 775 000     |
| Singapore            | 520 000       | 595 500       | 618 200       | 766 300       | 405 600       |
| Sri Lanka            | * 30 000      | * 30 000      | * 30 000      | * 30 000      | * 30 000      |
| Syria                | * 5 000       | * 5 000       | * 5 000       | * 5 000       | * 5 000       |
| Taiwan               | 20 858 000    | 21 370 000    | 22 290 000    | 21 322 000    | 20 498 000    |
| Thailand             | 5 400 000     | 6 761 800     | 6 402 500     | 4 246 000     | 4 467 200     |
| United Arab Emirates | 3 149 000     | 3 309 000     | 3 247 500     | 3 326 600     | 2 722 000     |
| Uzbekistan           | 654 000       | 680 000       | 646 000       | 666 000       | 950 000       |
| Vietnam              | 7 811 000     | 11 473 000    | 15 471 000    | 17 469 000    | 19 500 000    |
| Australia            | 5 160 489     | 5 335 000     | 5 775 000     | 5 493 000     | 5 489 000     |
| New Zealand          | 577 000       | 657 000       | 651 800       | 667 000       | 586 000       |
| World total          | 1 638 000 000 | 1 741 000 000 | 1 834 000 000 | 1 855 000 000 | 1 857 000 000 |

### Note(s)

(1) Unless otherwise indicated, these figures include production from scrap.

(a) Production from the region east of the River Nistru

(b) Years ended 31 March following that stated

(c) Years ended 20 March following that stated

## Production of ferro-alloys

tonnes (metric)

| Country                | 2016      | 2017      | 2018      | 2019      | 2020      |
|------------------------|-----------|-----------|-----------|-----------|-----------|
| Albania                |           |           |           |           |           |
| Ferro-chrome           | 44 551    | 23 987    | 92 850    | 66 402    | 53 543    |
| Armenia                |           |           |           |           |           |
| Ferro-molybdenum       | 6 526     | 6 588     | 7 279     | 7 712     | 6 718     |
| Austria                |           |           |           |           |           |
| Ferro-molybdenum       | 4 000     | 4 000     | 4 000     | 4 000     | 3 000     |
| Ferro-nickel           | 2 500     | 2 500     | 2 500     | 2 500     | 2 500     |
| Ferro-vanadium         | 7 000     | 8 000     | 7 000     | 7 000     | 7 000     |
| Bosnia & Herzegovina   |           |           |           |           |           |
| Ferro-alloys           | 28 138    | 30 473    | 31 460    | 31 911    | 14 641    |
| Czech Republic         |           |           |           |           |           |
| Ferro-vanadium         | * 6 300   | * 6 600   | * 6 400   | * 6 700   | * 5 600   |
| Finland                |           |           |           |           |           |
| Ferro-chrome           | 469 000   | 415 000   | 497 000   | 505 000   | 498 000   |
| France                 |           |           |           |           |           |
| Ferro-manganese        | 119 008   | 95 442    | 125 383   | * 115 000 | * 68 000  |
| Ferro-silico-manganese | 58 223    | 58 443    | 56 652    | * 68 000  | * 62 000  |
| Ferro-silicon          | * 45 000  | * 50 000  | * 50 000  | * 48 000  | * 41 000  |
| Silicon metal          | * 80 000  | 149 000   | * 138 000 | * 105 000 | * 87 000  |
| Georgia                |           |           |           |           |           |
| Ferro-manganese        | * 4 500   | * 4 500   | * 4 500   | * 4 500   | * 4 500   |
| Ferro-silico-manganese | 244 228   | 289 765   | 335 013   | 291 608   | 223 799   |
| Germany                |           |           |           |           |           |
| Ferro-chrome           | * 17 800  | * 17 800  | * 17 800  | * 17 000  | * 16 000  |
| Silicon metal          | 29 940    | 31 915    | 28 058    | 29 606    | 30 234    |
| Other ferro-alloys     | * 8 200   | * 8 200   | * 8 200   | * 8 200   | * 8 000   |
| Greece                 |           |           |           |           |           |
| Ferro-nickel           | 87 880    | 86 140    | 82 615    | * 65 000  | * 65 000  |
| Iceland                |           |           |           |           |           |
| Ferro-silicon          | 128 019   | 116 811   | 116 889   | 120 255   | 128 187   |
| Italy                  |           |           |           |           |           |
| Ferro-silico-manganese | 90 000    | 91 000    | 91 000    | * 90 000  | * 90 000  |
| Kosovo                 |           |           |           |           |           |
| Ferro-nickel           | 22 800    | * 23 000  | * 6 000   | * 7 200   | * 7 000   |
| North Macedonia        |           |           |           |           |           |
| Ferro-nickel           | 10 603    | 7 175     | 10 100    | 15 202    | 17 747    |
| Ferro-silicon          | 24 431    | 21        | 185       | 117       | —         |
| Norway                 |           |           |           |           |           |
| Ferro-manganese        | 329 100   | 400 800   | 327 600   | * 330 000 | * 330 000 |
| Ferro-silico-manganese | 306 100   | 284 500   | 330 000   | * 288 000 | * 288 000 |
| Ferro-silicon (a)      | 249 475   | 240 813   | 265 964   | —         | —         |
| Silicon metal          | * 200 000 | * 160 000 | * 190 000 | * 200 000 | * 210 000 |
| Poland                 |           |           |           |           |           |
| Ferro-manganese        | —         | 66        | —         | * —       | * —       |
| Ferro-silicon          | 77 682    | 65 732    | 63 618    | 65 523    | 61 709    |
| Other ferro-alloys     | 12 517    | 24 800    | 33 250    | 16 815    | * 22 000  |
| Russia                 |           |           |           |           |           |
| Spiegeleisen           | * 7 000   | * 7 000   | * 7 000   | * 7 000   | * 7 000   |
| Ferro-chrome           | 268 439   | 434 452   | 332 261   | 384 089   | * 390 000 |
| Ferro-silico-chrome    | * 4 200   | * 4 200   | * 4 200   | * 4 200   | * 4 200   |
| Ferro-manganese        | 124 200   | 253 000   | 281 000   | 273 000   | * 240 000 |
| Ferro-silico-manganese | 203 216   | 44 917    | 43 334    | 51 774    | * 50 000  |
| Ferro-molybdenum       | 4 881     | 4 726     | * 4 700   | * 4 700   | * 4 700   |
| Ferro-nickel           | * 20 000  | * 20 000  | * 20 000  | * 20 000  | * 20 000  |
| Ferro-silicon          | 935 912   | 840 352   | 928 797   | 846 579   | * 830 000 |
| Ferro-vanadium         | 12 392    | 12 588    | 11 383    | 10 894    | * 12 000  |
| Silicon metal          | * 48 000  | * 48 000  | * 48 000  | * 48 000  | * 48 000  |
| Other ferro-alloys     | * 34 000  | * 34 000  | * 34 000  | * 34 000  | * 34 000  |
| Slovakia               |           |           |           |           |           |
| Ferro-manganese        | 35 000    | 41 300    | 32 300    | 26 200    | 24 000    |
| Ferro-silico-manganese | 35 700    | 40 100    | 37 200    | 49 900    | 33 800    |
| Ferro-silicon          | 30 900    | 44 600    | 44 100    | 29 400    | 29 600    |
| Other ferro-alloys     | 4 300     | 2 700     | 1 300     | 2 100     | 1 200     |
| Spain                  |           |           |           |           |           |
| Ferro-manganese        | 120 100   | 132 100   | 86 200    | 55 500    | * 28 000  |
| Ferro-silico-manganese | 123 100   | 138 700   | 156 100   | 98 400    | * 83 000  |
| Ferro-silicon          | * 80 000  | * 95 000  | * 95 000  | * 90 000  | * 77 000  |
| Silicon metal          | * 30 000  | * 7 500   | * 7 500   | * 7 500   | * 5 000   |

## Production of ferro-alloys

tonnes (metric)

| Country                       | 2016       | 2017       | 2018       | 2019        | 2020        |
|-------------------------------|------------|------------|------------|-------------|-------------|
| Sweden                        |            |            |            |             |             |
| Ferro-chrome                  | 81 102     | 114 101    | 106 486    | 120 000     | * 120 000   |
| Turkey                        |            |            |            |             |             |
| Ferro-chrome                  | 75 000     | 83 894     | * 80 000   | * 80 000    | * 80 000    |
| Ferro-silico-chrome           | * 3 000    | * 3 000    | * 3 000    | * 3 000     | * 3 000     |
| Ukraine                       |            |            |            |             |             |
| Ferro-manganese               | 184 310    | 211 124    | 155 869    | 172 508     | 117 215     |
| Ferro-silico-manganese        | 876 756    | 875 031    | 912 300    | 858 708     | * 850 000   |
| Ferro-nickel                  | 84 025     | 74 459     | 79 537     | 79 334      | 73 700      |
| Ferro-silicon                 | 126 297    | 118 371    | 97 084     | * 97 000    | * 97 000    |
| Other ferro-alloys            | 106 244    | 87 094     | 100 764    | * 100 000   | * 100 000   |
| Egypt                         |            |            |            |             |             |
| Ferro-silicon (b)             | 65 089     | 63 719     | * 60 500   | * 60 500    | * 60 000    |
| Other ferro-alloys (b)        | 23 802     | 22 871     | * 20 000   | * 20 000    | * 20 000    |
| South Africa                  |            |            |            |             |             |
| Ferro-alloys                  | 4 022 966  | 4 058 305  | 4 081 452  | 3 806 766   | 2 984 105   |
| Zimbabwe                      |            |            |            |             |             |
| Ferro-chrome (a)              | 148 842    | 328 386    | 315 685    | 308 593     | * 300 000   |
| Canada                        |            |            |            |             |             |
| Ferro-niobium                 | 6 099      | 6 981      | * 7 500    | * 7 500     | * 7 500     |
| Ferro-silicon                 | * 38 000   | * 40 000   | * 36 000   | * 37 000    | * 34 000    |
| Ferro-vanadium                | * 1 000    | * 1 000    | * 1 000    | * 1 200     | * 1 200     |
| Silicon metal                 | * 27 000   | 28 000     | * 34 000   | * 34 000    | * 25 000    |
| Dominican Republic            |            |            |            |             |             |
| Ferro-nickel                  | 33 203     | 43 894     | 53 697     | 78 662      | 59 211      |
| Mexico                        |            |            |            |             |             |
| Ferro-manganese               | 84 529     | 90 010     | 95 349     | 72 937      | 57 127      |
| Ferro-silico-manganese        | 134 251    | 148 142    | 151 991    | 154 209     | 147 784     |
| USA                           |            |            |            |             |             |
| Ferro-silicon & silicon metal | 384 000    | 415 000    | 430 000    | 310 000     | * 290 000   |
| Argentina                     |            |            |            |             |             |
| Ferro-silico-manganese        | * 10 000   | * 10 000   | * 10 000   | * 10 000    | * 10 000    |
| Ferro-silicon                 | * 11 000   | * 11 000   | * 11 000   | * 11 000    | * 11 000    |
| Brazil                        |            |            |            |             |             |
| Ferro-chrome (c)              | 150 240    | 171 531    | 175 061    | 136 780     | 254 346     |
| Ferro-silico-magnesium        | * 20 000   | * 20 000   | * 20 000   | * 20 000    | * 20 000    |
| Ferro-manganese               | 124 000    | 149 000    | 168 000    | 151 000     | * 150 000   |
| Ferro-nickel (d)              | 44 538     | 43 800     | 42 310     | 45 543      | * 46 000    |
| Ferro-niobium                 | 44 390     | 58 690     | * 60 000   | * 60 000    | * 60 000    |
| Ferro-silicon                 | * 100 000  | * 100 000  | * 100 000  | * 100 000   | * 100 000   |
| Silicon metal                 | 110 000    | 110 000    | 190 000    | 340 000     | 340 000     |
| Other ferro-alloys            | * 40 000   | * 40 000   | * 40 000   | * 40 000    | * 40 000    |
| Chile                         |            |            |            |             |             |
| Ferro-molybdenum              | * 14 500   | * 14 500   | * 14 500   | * 14 500    | * 14 500    |
| Colombia                      |            |            |            |             |             |
| Ferro-nickel                  | 105 976    | 116 016    | * 111 000  | * 111 000   | 111 000     |
| Venezuela                     |            |            |            |             |             |
| Ferro-manganese               | * 12 000   | * 12 000   | * 6 000    | * 6 000     | * 6 000     |
| Ferro-silico-manganese        | * 14 000   | * 14 000   | * 7 000    | * 7 000     | * 7 000     |
| Ferro-nickel                  | * 50 000   | * 50 000   | * 25 000   | * 25 000    | * 25 000    |
| Ferro-silicon                 | * 80 000   | * 80 000   | * 40 000   | * 40 000    | * 40 000    |
| Bahrain                       |            |            |            |             |             |
| Ferro-silico-manganese        | 5 000      | —          | *—         | *—          | *—          |
| Bhutan                        |            |            |            |             |             |
| Ferro-silicon                 | * 106 000  | * 109 000  | * 120 900  | * 138 900   | * 103 500   |
| Burma                         |            |            |            |             |             |
| Ferro-nickel (e)              | 64 462     | 62 367     | 32 786     | * 46 000    | * 46 000    |
| China                         |            |            |            |             |             |
| Ferro-alloys                  | 35 588 000 | 32 887 000 | 31 234 000 | 36 577 000  | 36 000 000  |
| Silicon metal                 | 2 101 000  | 2 204 700  | 2 404 500  | * 2 400 000 | * 2 400 000 |

## Production of ferro-alloys

tonnes (metric)

| Country                                      | 2016      | 2017      | 2018      | 2019      | 2020      |
|--|-----------|-----------|-----------|-----------|-----------|
| India  |           |           |           |           |           |
| Ferro-aluminium (e)                          | 4 345     | 4 423     | 2 752     | 1 461     | 1 119     |
| Ferro-chrome (e)                             | 944 000   | 944 000   | 944 000   | 921 000   | 868 000   |
| Ferro-silico-magnesium (e)                   | 20 183    | 15 978    | 19 180    | 14 173    | 9 700     |
| Ferro-manganese (e)                          | 518 000   | 518 000   | 518 000   | —         | —         |
| Ferro-silico-manganese (e)                   | 300 625   | 311 326   | 342 591   | 320 594   | 329 295   |
| Ferro-molybdenum (e)                         | 1 603     | 1 205     | 1 003     | 527       | 428       |
| Ferro-silicon (e)                            | 90 000    | 90 000    | 90 000    | —         | —         |
| Ferro-titanium (e)                           | 291       | 281       | 118       | 121       | 249       |
| Ferro-vanadium (e)                           | 1 329     | 1 331     | 1 013     | 665       | 634       |
| Indonesia                                    |           |           |           |           |           |
| Ferro-silico-manganese                       | * 8 000   | * 6 000   | * 5 000   | * 4 000   | * 4 000   |
| Ferro-nickel                                 | 101 465   | 108 810   | 124 340   | 128 565   | 129 850   |
| Iran   |           |           |           |           |           |
| Ferro-chrome (f)                             | * 8 000   | * 8 000   | * 8 000   | * 8 000   | * 8 000   |
| Ferro-silicon (f)                            | * 50 000  | * 50 000  | * 70 000  | * 70 000  | * 70 000  |
| Japan  |           |           |           |           |           |
| Ferro-manganese                              | 473 740   | 456 460   | 456 518   | 462 740   | 400 331   |
| Ferro-nickel                                 | 333 448   | 312 324   | 339 844   | 337 790   | 234 505   |
| Other ferro-alloys                           | 77 453    | 79 809    | 73 094    | 74 015    | 49 544    |
| Kazakhstan                                   |           |           |           |           |           |
| Ferro-chrome                                 | 1 525 222 | 1 640 299 | 1 772 508 | 1 858 130 | 1 841 309 |
| Ferro-silico-chrome                          | 94 467    | 110 497   | * 110 500 | * 110 500 | * 110 500 |
| Ferro-silico-manganese                       | 135 885   | 123 977   | 137 710   | 123 528   | 122 743   |
| Ferro-silicon                                | 68 779    | 60 001    | 65 405    | 79 930    | * 80 000  |
| Korea (Rep. of)                              |           |           |           |           |           |
| Ferro-manganese                              | * 355 000 | * 355 000 | * 355 000 | * 355 000 | * 355 000 |
| Ferro-silico-manganese                       | * 196 000 | * 196 000 | * 196 000 | * 196 000 | * 196 000 |
| Other ferro-alloys                           | * 4 200   | * 4 200   | * 4 200   | * 4 200   | * 4 200   |
| Korea, Dem. P.R. of                          |           |           |           |           |           |
| Ferro-alloys                                 | * 23 000  | * 30 000  | * 41 000  | * 46 000  | * 45 000  |
| Australia                                    |           |           |           |           |           |
| Ferro-manganese & ferro-silico-manganese (b) | 222 000   | 245 000   | 275 000   | 257 000   | * 270 000 |
| Silicon metal                                | * 51 000  | * 49 000  | * 42 000  | * 52 000  | * 45 000  |
| New Caledonia                                |           |           |           |           |           |
| Ferro-nickel                                 | 261 420   | 269 961   | 260 206   | 247 746   | 236 421   |

### Note(s)

- (1) In addition to the countries listed, Bahrain and Chile also produce ferro-chrome.  
(2) In addition to the countries listed, Saudi Arabia also produces ferro-manganese and ferro-silico-manganese.

- (a) Sales  
(b) Years ended 30 June of that stated  
(c) Including ferro-silico -chrome  
(d) Nickel content  
(e) Years ended 31 March following that stated  
(f) Years ended 20 March following that stated

## Production of kaolin

tonnes (metric)

| Country              | 2016        | 2017        | 2018        | 2019        | 2020        |
|----------------------|-------------|-------------|-------------|-------------|-------------|
| Austria              | 13 558      | * 13 500    | * 13 500    | 16 176      | * 16 000    |
| Belgium              | * 300 000   | * 300 000   | * 300 000   | * 300 000   | * 300 000   |
| Bosnia & Herzegovina | 286 461     | 252 959     | 303 626     | 118 005     | 108 174     |
| Bulgaria             | 330 200     | 321 800     | * 322 000   | * 322 000   | * 322 000   |
| Czech Republic (a)   | 648 000     | 676 000     | 653 000     | 629 000     | 626 000     |
| France (b)           | 244 486     | 223 842     | 264 606     | * 220 000   | 197 817     |
| Germany (c)          | 1 023 000   | 1 109 000   | 1 004 000   | 877 000     | 755 000     |
| Italy                | * 180 000   | * 180 000   | * 180 000   | * 180 000   | * 180 000   |
| Poland (d)           | 148 900     | 143 700     | 154 314     | 151 840     | 118 000     |
| Portugal             | 283 571     | 307 982     | 374 029     | 335 354     | 320 655     |
| Romania              | * 31 000    | —           | —           | —           | —           |
| Russia               | 1 064 800   | 1 593 000   | 1 593 000   | 1 530 000   | * 1 550 000 |
| Serbia               | 253 000     | 255 000     | 279 000     | 254 000     | 234 000     |
| Slovakia             | 11 000      | 21 400      | 34 400      | 25 000      | 30 960      |
| Spain (d)            | 347 258     | 475 074     | 474 462     | 267 602     | 210 808     |
| Turkey               | 1 283 260   | 1 362 799   | 1 515 609   | 1 283 776   | 1 224 746   |
| Ukraine              | 2 335 004   | 2 379 636   | 2 091 525   | 1 843 561   | 1 680 891   |
| United Kingdom       | * 940 000   | * 970 000   | * 996 000   | * 715 000   | * 635 000   |
| Algeria              | 96 000      | * 100 000   | * 100 000   | * 100 000   | * 100 000   |
| Burkina Faso         | 61          | 37          | 42          | * 40        | * 40        |
| Egypt                | 232 000     | * 232 000   | * 230 000   | * 230 000   | * 220 000   |
| Eritrea              | * 200       | * 200       | * 200       | * —         | * —         |
| Ethiopia (e)         | * 4 600     | * 5 000     | * 10 000    | * 10 000    | * 10 000    |
| Kenya                | * 1 600     | * 1 600     | * 1 600     | * 1 600     | * 1 600     |
| Madagascar           | * 220       | * 220       | * 220       | * 220       | * 220       |
| Nigeria              | 24 105      | 46 935      | 11 707      | 8 649       | 7 033       |
| South Africa         | 21 141      | 31 295      | 23 724      | 27 827      | 20 639      |
| Sudan                | 6 500       | 6 000       | 11 000      | 20 600      | 19 700      |
| Tanzania             | 656         | 13 816      | * 13 000    | 15 343      | 98 454      |
| Uganda               | 45 909      | 55 317      | 17 281      | 10 448      | 323         |
| Cuba                 | 2 500       | 1 500       | 2 700       | 2 100       | 2 000       |
| Guatemala            | 793         | 657         | 724         | * 725       | 402         |
| Mexico               | 452 070     | 325 864     | 898 246     | 246 645     | * 600 000   |
| USA (f)              | 5 290 000   | 5 560 000   | 5 530 000   | 5 060 000   | * 4 600 000 |
| Argentina            | 26 198      | 19 940      | 17 000      | 11 853      | 20 628      |
| Brazil (a)           | 1 737 000   | 1 771 000   | 1 800 000   | 1 476 802   | 1 239 591   |
| Chile                | 60 000      | 60 000      | 88 262      | 34 801      | 38 789      |
| Colombia             | 109 252     | 164 077     | 70 799      | 96 051      | 10 304      |
| Ecuador              | 4 110       | 548         | —           | * —         | * —         |
| Paraguay             | * 6 000     | * 6 000     | * 6 000     | * 6 000     | * 6 000     |
| Peru                 | 19 098      | 17 700      | 16 004      | 9 208       | 12 536      |
| Venezuela            | * 3 000     | * 3 000     | * 3 000     | * 3 000     | * 3 000     |
| China                | * 3 200 000 | * 3 200 000 | * 3 200 000 | * 5 000 000 | * 5 000 000 |
| India (g)(h)         | 113 817     | 131 173     | * 74 000    | * 74 000    | * 74 000    |
| Indonesia            | * 180 000   | * 180 000   | * 180 000   | * 300 000   | * 300 000   |
| Iran (i)             | 1 141 502   | 2 036 670   | 1 759 079   | 1 616 216   | * 1 600 000 |
| Japan                | * 12 000    | * 12 000    | * 12 000    | * 12 000    | * 12 000    |
| Jordan               | * 100 000   | * 100 000   | * 100 000   | * 100 000   | * 100 000   |
| Korea (Rep. of)      | 586 973     | 724 194     | 369 274     | 317 626     | 393 236     |
| Malaysia             | 392 932     | 540 297     | 496 219     | 417 222     | 301 503     |
| Oman                 | 173 800     | 218 600     | 110 300     | 34 100      | 43 300      |
| Pakistan (j)         | 20 726      | 28 710      | 19 483      | 15 978      | * 16 000    |
| Philippines          | 10 059      | * 10 000    | * 10 000    | * 10 000    | * 10 000    |
| Saudi Arabia         | 196 000     | 206 000     | 216 000     | 227 000     | * 227 000   |
| Sri Lanka            | 1 767       | 1 941       | * 2 000     | * 2 000     | * 2 000     |
| Taiwan               | 4 035       | 1 665       | 20          | 500         | 404         |
| Thailand (a)         | 105 343     | 102 659     | 96 666      | 80 776      | 71 051      |
| Uzbekistan (g)       | * 150 000   | * 150 000   | 365 503     | 526 592     | 495 801     |
| Vietnam              | * 100 000   | * 100 000   | * 100 000   | * 100 000   | * 100 000   |



## Production of kaolin

tonnes (metric)

| Country       | 2016       | 2017       | 2018       | 2019       | 2020       |
|---------------|------------|------------|------------|------------|------------|
| Australia (j) | 244 157    | 217 673    | 208 088    | 127 602    | 170 130    |
| New Zealand   | 61 650     | 50 424     | 51 369     | 50 569     | * 51 000   |
| World total   | 24 700 000 | 27 000 000 | 26 800 000 | 25 500 000 | 24 500 000 |

### Note(s)

(1) In addition to the countries listed, Denmark is believed to produce kaolin.

- (a) Beneficiated
- (b) Sales
- (c) Washed and dried
- (d) Washed
- (e) Years ended 7 July of that stated
- (f) Sold or used by producers
- (g) Beneficiated; excludes directly used natural kaolin
- (h) Years ended 31 March following that stated
- (i) Years ended 20 March following that stated
- (j) Years ended 30 June of that stated

## Mine production of lead

tonnes (metal content)

| Country                    | 2016      | 2017      | 2018      | 2019      | 2020      |
|----------------------------|-----------|-----------|-----------|-----------|-----------|
| Bosnia & Herzegovina       | 6 803     | 7 092     | 7 347     | 2 421     | 3 360     |
| Bulgaria                   | 19 688    | 16 099    | 14 723    | 17 097    | 19 500    |
| Finland                    | —         | —         | —         | 937       | 1 530     |
| Georgia                    | ...       | ...       | ...       | ...       | 1 124     |
| Greece                     | 14 300    | 12 600    | 15 376    | 14 827    | 19 656    |
| Ireland, Republic of       | 19 582    | 17 083    | 16 712    | 16 100    | 14 400    |
| Kosovo                     | 6 530     | 5 142     | 4 694     | 3 990     | 4 737     |
| Montenegro                 | 3 600     | 3 100     | 3 100     | 3 500     | 1 000     |
| North Macedonia            | 31 034    | 40 233    | 42 534    | 44 514    | 46 176    |
| Poland                     | 62 750    | 73 530    | 70 340    | 69 860    | 65 660    |
| Portugal                   | 4 126     | 5 164     | 18 397    | 27 852    | 28 178    |
| Romania                    | *—        | 900       | 1 200     | 200       | —         |
| Russia                     | 204 300   | 204 700   | 206 100   | 207 900   | * 200 000 |
| Serbia                     | 3 500     | 3 200     | 3 230     | 5 730     | 5 400     |
| Slovakia                   | 133       | 147       | 114       | 111       | 102       |
| Spain                      | 4 946     | 3 258     | 9 936     | 11 390    | 11 396    |
| Sweden                     | 75 830    | 71 112    | 64 751    | 68 635    | 65 402    |
| Turkey                     | * 64 300  | * 75 000  | * 76 000  | * 71 500  | * 81 500  |
| United Kingdom             | (a)* 100  | (a)* 100  | (a)* 100  | (b)* 150  | (b)* 100  |
| Congo, Democratic Republic | 100       | —         | —         | —         | —         |
| Morocco                    | 29 617    | 38 009    | 30 339    | 32 736    | * 30 000  |
| Namibia                    | 6 116     | 6 577     | 4 293     | 5 892     | 9 181     |
| Nigeria                    | * 13 300  | * 21 000  | * 15 000  | * 19 700  | * 20 000  |
| South Africa               | 39 344    | 48 150    | 35 118    | 42 936    | 28 048    |
| Canada                     | 12 020    | 20 477    | 17 874    | 22 824    | 4 000     |
| Cuba                       | —         | * 1 500   | * 25 400  | * 35 000  | * 30 000  |
| Guatemala                  | 9 970     | 4 200     | —         | 377       | 422       |
| Honduras                   | 3 985     | 6 761     | 9 893     | 12 308    | 12 300    |
| Mexico                     | 242 071   | 243 022   | 230 869   | 372 106   | 260 390   |
| USA                        | 336 000   | 310 000   | 271 000   | 266 000   | 297 000   |
| Argentina                  | 28 016    | 40 135    | 28 260    | 42 957    | 23 008    |
| Bolivia                    | 89 906    | 113 285   | 112 140   | 88 002    | 64 619    |
| Brazil                     | 9 015     | 6 157     | 7 277     | 6 000     | 5 400     |
| Chile                      | 1 110     | 1 562     | 712       | 7         | 1 386     |
| Peru                       | 314 422   | 306 794   | 289 123   | 308 116   | 241 548   |
| Burma (c)                  | 20 322    | 45 964    | 21 342    | * 40 000  | * 30 000  |
| China                      | 2 337 485 | 1 852 200 | 1 892 173 | 2 006 000 | 1 970 000 |
| India (c)                  | 150 964   | 173 789   | 207 067   | 202 964   | 217 787   |
| Indonesia                  | * 5 300   | * 7 900   | * 11 400  | * 10 800  | * 6 500   |
| Iran                       | 47 000    | 48 000    | 49 600    | 72 500    | * 70 000  |
| Kazakhstan                 | 70 500    | 111 200   | 86 400    | 55 600    | 30 200    |
| Korea (Rep. of)            | 2 840     | 3 762     | 2 412     | 1 933     | 1 681     |
| Korea, Dem. P.R. of        | 32 116    | 32 621    | * 20 000  | * 25 000  | * 25 000  |
| Laos                       | * 200     | * 700     | * 300     | * 200     | * 100     |
| Mongolia                   | 4 700     | 7 400     | 11 600    | 14 000    | 12 400    |
| Nepal (d)                  | —         | 3 900     | —         | —         | —         |
| Pakistan                   | 1 196     | 3 047     | 4 822     | 8 089     | 4 256     |
| Tajikistan                 | 57 000    | * 61 100  | * 52 600  | * 29 500  | 54 863    |
| Uzbekistan                 | 30 000    | 26 000    | 21 300    | 19 100    | 18 400    |
| Vietnam                    | * 700     | * 3 800   | * 12 100  | * 10 400  | * 12 000  |
| Australia                  | 441 338   | 395 190   | 446 571   | 500 985   | 494 271   |
| World total                | 4 900 000 | 4 500 000 | 4 500 000 | 4 800 000 | 4 500 000 |

### Note(s)

- (a) By-product of Pennine fluorspar operations
- (b) By-product of Pennine fluorspar operations and of gold mining in Northern Ireland.
- (c) Years ended 31 March following that stated
- (d) Years ended 15 July of that shown

## Production of refined lead

tonnes (metric)

| Country              | 2016      | 2017      | 2018      | 2019      | 2020        |
|----------------------|-----------|-----------|-----------|-----------|-------------|
| Austria              | 25 000    | 26 000    | 27 000    | 27 000    | 27 000      |
| Belgium              | 142 123   | 138 606   | 138 106   | 138 618   | 122 748     |
| Bosnia & Herzegovina | 182       | 25        | 1         | —         | —           |
| Bulgaria             | 100 817   | 103 105   | 102 808   | 102 473   | 100 600     |
| Croatia              | * 3 900   | * 4 300   | * 5 000   | * 5 300   | * 4 800     |
| Czech Republic       | * 43 000  | * 43 000  | * 43 000  | * 43 000  | * 42 000    |
| Estonia              | 8 348     | 9 606     | 7 393     | 8 226     | 9 925       |
| France               | 70 000    | * 70 000  | * 70 000  | * 70 000  | * 60 000    |
| Germany              | 339 000   | 354 000   | 315 000   | 326 000   | 335 000     |
| Greece               | 28 000    | 28 000    | 30 000    | 28 000    | 26 000      |
| Ireland, Republic of | 18 000    | 17 500    | 15 000    | 16 300    | 12 000      |
| Italy                | 187 200   | 173 700   | 167 500   | 159 100   | 152 700     |
| Netherlands          | 33 000    | 36 000    | 36 000    | 36 000    | 34 000      |
| Poland               | 154 900   | 157 000   | 159 470   | 158 600   | 162 600     |
| Portugal             | 8 000     | 10 000    | 9 000     | 10 000    | 9 000       |
| Romania              | 17 000    | 24 000    | 21 000    | 20 000    | 19 000      |
| Russia               | 130 000   | 140 000   | 140 000   | 141 000   | 142 000     |
| Serbia               | 6 000     | 15 000    | 14 000    | 16 000    | 14 000      |
| Slovakia             | 110       | 61        | 102       | 36        | 63          |
| Slovenia             | 12 000    | 12 000    | 12 000    | 12 000    | 11 000      |
| Spain                | 168 800   | 188 400   | 190 000   | 192 000   | 174 600     |
| Sweden               | 74 367    | 78 241    | 75 784    | 75 327    | 74 370      |
| Turkey               | 58 000    | 58 000    | 58 000    | 60 000    | 56 400      |
| Ukraine              | 28 465    | 33 633    | 29 755    | 24 704    | 24 968      |
| United Kingdom       | 310 000   | 309 000   | 303 000   | 311 000   | 315 000     |
| Algeria              | 8 000     | * 9 000   | 9 000     | 9 000     | 8 000       |
| Egypt                | * 25 000  | * 26 000  | * 26 000  | * 28 000  | * 26 000    |
| Ghana (a)            | 1 823     | 1 150     | 1 200     | 1 000     | 1 000       |
| Kenya                | 1 100     | 1 400     | 1 000     | 1 000     | 1 000       |
| Morocco              | * 11 000  | * 8 000   | * 8 000   | * 8 000   | * 7 000     |
| Mozambique (a)       | 2 844     | 3 828     | 3 422     | 3 943     | 4 200       |
| Nigeria              | 9 000     | * 9 000   | * 6 000   | * 12 000  | * 12 000    |
| Senegal (a)          | 3 576     | 3 424     | 3 693     | 4 121     | 4 223       |
| South Africa         | * 54 000  | * 56 000  | * 56 000  | * 56 000  | * 55 000    |
| Tanzania             | —         | —         | —         | —         | 2 800       |
| Uganda               | * 800     | * 800     | * 800     | * 800     | * 800       |
| Zambia               | * 5 000   | * 4 000   | * 4 000   | * 5 000   | * 4 000     |
| Canada               | 274 226   | 274 061   | 260 956   | 260 267   | 53 536      |
| Costa Rica           | * 8 000   | * 10 400  | * 10 000  | * 9 000   | * 8 000     |
| Cuba                 | 5         | 5         | 5         | 5         | 5           |
| Dominican Republic   | * 8 000   | * 7 000   | * 7 000   | * 7 000   | * 6 000     |
| Guatemala            | * 12 000  | * 12 000  | * 12 000  | * 12 000  | * 11 000    |
| Honduras             | —         | 4 500     | * 8 000   | * 5 000   | * 5 000     |
| Mexico               | 401 400   | 423 000   | 433 100   | 446 900   | 410 000     |
| USA (b)              | 1 110 000 | 1 140 000 | 1 140 000 | 1 170 000 | 1 150 000   |
| Argentina            | 38 300    | 43 600    | 39 900    | 27 600    | 19 200      |
| Bolivia              | 41        | 1 100     | 100       | 1 200     | * 3 000     |
| Brazil               | 176 216   | 243 000   | 250 100   | 253 700   | 257 500     |
| Chile                | 11 000    | 12 000    | 15 000    | 14 000    | 12 000      |
| Colombia             | * 42 000  | * 43 000  | * 44 000  | * 44 000  | * 41 000    |
| Peru                 | 10 000    | 15 000    | 15 000    | 15 000    | 10 200      |
| Venezuela            | 15 600    | 15 600    | 9 600     | 8 400     | 7 000       |
| Burma                | * 6 100   | * 12 100  | * 7 300   | * 14 800  | * 10 500    |
| China                | 4 603 884 | 4 726 200 | 4 942 947 | 5 797 108 | * 5 800 000 |
| India                | 528 000   | 573 000   | 626 000   | 599 000   | 818 000     |
| Indonesia            | * 48 000  | * 46 000  | * 54 000  | * 54 000  | * 53 000    |
| Iran                 | 130 000   | 132 000   | 125 000   | 122 000   | 117 000     |
| Israel               | 24 128    | 25 261    | 28 700    | 24 090    | 23 946      |
| Japan                | * 240 000 | * 239 000 | * 240 000 | * 237 000 | * 237 600   |
| Kazakhstan           | 134 144   | 147 328   | 148 570   | 127 476   | 123 371     |
| Korea (Rep. of)      | 812 500   | 806 600   | 801 000   | 813 000   | 770 000     |
| Korea, Dem. P.R. of  | * 2 000   | * 2 000   | * 2 000   | * 3 000   | * 3 000     |
| Lebanon              | * 11 300  | * 11 900  | * 6 000   | * 26 000  | * 22 000    |
| Malaysia             | 28 000    | 30 000    | 30 000    | 35 000    | 33 000      |

## Production of refined lead

tonnes (metric)

| Country              | 2016       | 2017       | 2018       | 2019       | 2020       |
|----------------------|------------|------------|------------|------------|------------|
| Pakistan (c)         | 100        | 5 000      | 18 000     | 32 000     | 32 000     |
| Philippines          | 14 000     | 10 000     | 10 000     | 10 000     | 10 000     |
| Saudi Arabia         | 60 000     | 72 000     | * 68 000   | * 68 000   | 66 000     |
| Sri Lanka (a)        | 3 006      | 3 527      | 3 673      | 3 719      | 3 503      |
| Taiwan               | 48 000     | 48 000     | 58 000     | 55 000     | 55 000     |
| Thailand             | 86 000     | 88 000     | 85 000     | 82 000     | 80 000     |
| United Arab Emirates | 22 000     | 25 000     | 25 000     | 25 000     | 24 000     |
| Vietnam              | * 25 000   | * 31 200   | * 32 000   | * 34 000   | * 34 000   |
| Australia            | 223 700    | 211 200    | 188 800    | 124 388    | 161 897    |
| World total          | 11 200 000 | 11 600 000 | 11 800 000 | 12 700 000 | 12 500 000 |

### Note(s)

(1) Figures relate to both primary and secondary refined lead and include the lead content of antimonial lead.

(a) Years ended 31 March following that stated

(b) Excluding lead content of primary antimonial lead

(c) Years ended 30 June of that stated

## Production of lithium minerals

tonnes (metric)

| Country                  | 2016    | 2017      | 2018      | 2019      | 2020      |
|--------------------------|---------|-----------|-----------|-----------|-----------|
| Portugal                 |         |           |           |           |           |
| Lepidolite               | 40 758  | 65 743    | 76 818    | 59 912    | 23 185    |
| Namibia                  |         |           |           |           |           |
| Lepidolite               | —       | —         | 30 000    | —         | —         |
| Nigeria                  | —       | —         | 1 267     | 133       | * 130     |
| Zimbabwe                 | 48 000  | 51 000    | 70 000    | 65 000    | 20 859    |
| Canada                   |         |           |           |           |           |
| Spodumene                | —       | 1 100     | 140 000   | 9 000     | *—        |
| USA (a)                  | * 900   | * 900     | * 900     | * 900     | * 900     |
| Argentina (b)(c)         | 30 877  | 31 060    | 34 712    | 34 293    | 31 747    |
| Bolivia (b)              | 162     | * 60      | * 230     | * 400     | 191       |
| Brazil                   |         |           |           |           |           |
| Spodumene                | 8 804   | * 9 000   | * 9 000   | * 9 000   | * 9 000   |
| Chile (d)                | 78 182  | 81 378    | 97 323    | 112 607   | 124 602   |
| China (a)                | * 4 800 | * 7 000   | * 7 100   | * 10 800  | * 14 000  |
| Australia                |         |           |           |           |           |
| Spodumene                | 522 181 | 1 706 619 | 1 965 944 | 1 616 764 | 1 479 872 |
| World total (Li content) | 42 000  | 78 100    | 93 600    | 86 300    | 85 800    |

### Note(s)

(1) In addition to the countries listed, Russia has also produced lithium minerals in the past.

(a) Li content

(b) Carbonate

(c) Chloride

(d) Carbonate, hydroxide and chloride

## Production of magnesite

tonnes (metric)

| Country             | 2016         | 2017         | 2018         | 2019         | 2020         |
|---------------------|--------------|--------------|--------------|--------------|--------------|
| Austria             | 645 593      | 730 482      | 808 239      | 691 909      | 816 370      |
| Finland             | 54 227       | 63 850       | 49 601       | 37 002       | 136 167      |
| Greece              | 418 558      | 499 381      | 464 689      | 365 792      | 275 100      |
| Netherlands (a)     | 265 857      | 282 551      | 349 000      | 292 000      | 243 000      |
| Poland              | 77 920       | 101 920      | 102 110      | 91 490       | 65 250       |
| Russia              | * 2 600 000  | * 2 600 000  | * 2 600 000  | * 2 600 000  | * 2 600 000  |
| Slovakia            | 433 500      | 610 000      | 615 500      | 615 200      | 516 900      |
| Spain               | 583 698      | 788 991      | 738 994      | 634 580      | 626 055      |
| Turkey              | 3 258 445    | 1 694 071    | 1 958 847    | 1 496 081    | 1 560 818    |
| South Africa        | * 15 000     | * 12 000     | * 9 000      | * 7 000      | * 6 000      |
| Canada (b)          | * 150 000    | * 150 000    | * 150 000    | * 180 000    | * 160 000    |
| Guatemala           | 23 137       | 16 298       | 4 745        | * 4 700      | * 4 700      |
| Mexico              | 101 000      | 101 000      | 101 000      | 800          | * 800        |
| Brazil (c)          | 1 652 424    | 2 034 000    | 1 700 000    | 1 700 000    | * 1 700 000  |
| Colombia            | 1 190        | 1 913        | 1 039        | 1 847        | 1 077        |
| China               | * 18 600 000 | * 19 000 000 | * 18 500 000 | * 19 000 000 | * 18 000 000 |
| India (d)           | 299 149      | 195 055      | 146 581      | 97 684       | 78 144       |
| Iran (e)            | 155 916      | 154 860      | 169 953      | 153 525      | * 155 000    |
| Israel (f)          | 107 274      | 90 000       | 113 000      | 105 350      | 113 903      |
| Korea, Dem. P.R. of | 160 935      | 172 488      | * 170 000    | * 170 000    | * 150 000    |
| Pakistan (g)        | 35 228       | 19 656       | 23 596       | 41 477       | * 40 000     |
| Philippines         | 10 310       | 200          | 140          | * 140        | * 140        |
| Saudi Arabia        | 286 200      | 302 100      | 325 950      | * 315 000    | * 244 000    |
| Australia (g)       | 489 036      | 234 704      | 288 069      | 433 712      | 820 057      |
| World total         | 30 400 000   | 29 900 000   | 29 400 000   | 29 000 000   | 28 300 000   |

### Note(s)

(1) In addition to the countries listed, Bulgaria is believed to produce magnesite.

- (a) Chloride produced from solution mining
- (b) Officially described as magnesitic dolomite and brucite
- (c) Including beneficiated and directly shipped material
- (d) Years ended 31 March following that stated
- (e) Years ended 20 March following that stated
- (f) Magnesium chloride
- (g) Years ended 30 June of that stated

## Production of primary magnesium metal

tonnes (metric)

| Country         | 2016     | 2017     | 2018     | 2019     | 2020     |
|-----------------|----------|----------|----------|----------|----------|
| Russia          | 14 346   | 15 593   | 15 753   | 15 336   | 12 795   |
| Turkey          | * 3 750  | * 4 000  | * 4 500  | * 4 500  | * 4 500  |
| USA             | * 40 000 | * 30 000 | * 32 000 | * 32 000 | * 32 000 |
| Brazil          | 15 000   | 15 000   | 15 000   | 22 000   | 20 000   |
| China           | 872 768  | 904 600  | 848 079  | 969 000  | 858 000  |
| Israel          | 22 548   | 23 000   | 21 100   | 21 350   | 18 500   |
| Korea (Rep. of) | 3 000    | 3 000    | 110      | —        | —        |
| Malaysia        | * 400    | * 30     | *—       | —        | —        |

### Note(s)

- (1) In addition, substantial quantities of magnesium compounds are produced by, used and recycled within the process of titanium sponge production. It is believed this relates to the mineral carnallite and/or secondary magnesium chloride.
- (2) Magnesium used within the process of titanium sponge production is not marketed as primary magnesium metal and is therefore excluded from this table. Annual quantities are likely to be approximately: Russia 50,000 t, Kazakhstan 10,000 t and Ukraine 8 000 t.

## Production of manganese ore

tonnes (metric)

| Country                        | 2016       | 2017       | 2018       | 2019        | 2020        |
|--------------------------------|------------|------------|------------|-------------|-------------|
| Bulgaria                       | 41 700     | 2 000      | —          | —           | *—          |
| Georgia (a)                    | * 370 000  | * 370 000  | 349 354    | 305 562     | 302 200     |
| Hungary                        | 19 000     | —          | —          | —           | —           |
| Romania                        | 4 477      | * 8 000    | * 26 000   | * 45 000    | * 45 000    |
| Turkey                         | 46 867     | 77 895     | 85 334     | 114 037     | 101 766     |
| Ukraine                        | 1 328 271  | 1 758 172  | 1 845 156  | 1 854 240   | * 1 850 000 |
| Congo, Democratic Republic (b) | —          | —          | 14 884     | 4 935       | * 5 000     |
| Egypt (c)                      | —          | 124 794    | * 120 000  | * 120 000   | * 100 000   |
| Gabon                          | 3 423 247  | 5 079 000  | 6 542 000  | 7 186 000   | 8 147 000   |
| Ghana                          | 2 018 254  | 3 003 580  | 4 551 754  | 5 383 014   | 2 357 515   |
| Ivory Coast                    | 200 278    | 474 879    | 930 959    | 1 175 000   | * 1 280 000 |
| Morocco                        | 70 138     | 99 008     | 79 538     | 71 210      | * 70 000    |
| Namibia                        | 16 896     | 27 915     | 23 045     | 32 145      | 37 072      |
| South Africa                   | 13 735 509 | 14 143 794 | 14 919 207 | 17 008 951  | 16 020 435  |
| Sudan                          | 9 800      | * 4 000    | * 4 000    | * 1 000     | * 1 000     |
| Zambia                         | * 120 000  | 92 675     | 77 277     | 15 904      | * 30 000    |
| Mexico                         | 549 589    | 561 612    | 556 220    | 534 044     | 565 619     |
| Bolivia                        | —          | —          | * 550      | * 17 100    | * 17 000    |
| Brazil                         | 2 880 718  | 3 273 029  | 3 189 000  | 3 726 000   | 2 385 000   |
| Colombia                       | —          | —          | * 470      | 864         | —           |
| Peru                           | * 2 650    | * 2 500    | * 46 400   | * 41 800    | * 22 500    |
| Burma                          | * 293 000  | * 346 000  | * 519 000  | * 982 000   | * 634 000   |
| China                          | 15 484 000 | 11 333 000 | 7 977 000  | * 6 650 000 | * 6 500 000 |
| India (d)                      | 2 395 134  | 2 599 815  | 2 820 227  | 2 956 175   | 2 457 000   |
| Iran (e)                       | 78 955     | 100 780    | 128 617    | 130 625     | * 130 000   |
| Kazakhstan                     | 1 600 700  | 1 460 000  | 1 427 300  | 1 142 300   | 813 500     |
| Malaysia                       | 700 717    | 1 226 106  | 1 262 725  | 1 130 749   | 869 864     |
| Oman                           | 21 300     | 33 900     | 44 700     | 50 000      | 8 700       |
| Thailand                       | 2 750      | 8 020      | 4 000      | 4 800       | 1 400       |
| Vietnam                        | 13 400     | 50 000     | 68 194     | 76 106      | * 80 000    |
| Australia                      | 5 327 566  | 6 172 266  | 7 212 118  | 6 649 432   | 4 752 200   |
| World total                    | 50 800 000 | 52 400 000 | 54 800 000 | 57 400 000  | 49 600 000  |

### Note(s)

(1) In addition to the countries listed Cuba and Nigeria may produce manganese ore.

(a) Marketable

(b) Including beneficiated and direct shipping ore

(c) Years ended 30 June of that stated

(d) Years ended 31 March following that stated

(e) Years ended 20 March following that stated

## Production of mercury

kilograms

| Country     | 2016      | 2017        | 2018      | 2019      | 2020        |
|-------------|-----------|-------------|-----------|-----------|-------------|
| Russia      | * 50 000  | * 50 000    | * 50 000  | * 50 000  | * 50 000    |
| Morocco     | * 5 000   | * 10 000    | * 3 000   | * 2 000   | * 1 000     |
| Mexico (a)  | * 240 000 | * 140 000   | * 160 000 | * 32 000  | * 32 000    |
| USA         | * 15 000  | * 15 000    | * 15 000  | * 15 000  | * 15 000    |
| Argentina   | 135 377   | 54 469      | *—        | *—        | *—          |
| Chile (b)   | * 2 000   | (a)* 11 000 | (a)*—     | (a)*—     | (a)*—       |
| China       | 3 482 000 | 3 573 000   | 2 317 000 | 2 232 000 | * 2 200 000 |
| Kyrgyzstan  | * 20 000  | * 20 000    | * 20 000  | * 20 000  | * 20 000    |
| Tajikistan  | * 100 000 | * 100 000   | 100 000   | 90 600    | 177 700     |
| World total | 4 000 000 | 4 000 000   | 2 700 000 | 2 400 000 | 2 500 000   |

### Note(s)

(1) Several countries are believed to have unrecorded production of mercury from copper electrowinning processes and by recovery from effluents.

(a) BGS estimates based on net exports

(b) From copper solvent extraction and electrowinning processes

## Production of mica

tonnes (metric)

| Country             | 2016     | 2017      | 2018      | 2019      | 2020     |
|---------------------|----------|-----------|-----------|-----------|----------|
| Finland             | 10 843   | 10 740    | 12 122    | 9 440     | 7 247    |
| France (a)          | * 19 600 | * 19 200  | * 15 000  | * 19 000  | * 19 000 |
| Russia              | 4 823    | 5 219     | 4 465     | * 4 500   | * 4 500  |
| Spain (a)           | 5 521    | 6 333     | 6 932     | 7 769     | 5 000    |
| Turkey              | 14 531   | 204       | 5 732     | 454       | 4 139    |
| Madagascar          | 22 311   | 34 817    | 48 763    | * 50 000  | * 70 000 |
| South Africa        | 8        | —         | 32        | 9         | 176      |
| Canada              | * 22 000 | * 22 000  | * 21 000  | * 21 000  | * 15 000 |
| Mexico              | 145      | 145       | 408       | 595       | * 600    |
| USA (a)(b)          | 28 000   | 40 000    | 44 000    | 40 100    | * 35 000 |
| Argentina           | 564      | 189       | 120       | —         | —        |
| Brazil              | * 10 800 | * 10 100  | * 11 000  | * 11 000  | * 11 000 |
| Colombia            | 247      | 159       | 239       | 252       | —        |
| China               | * 95 000 | * 100 000 | * 100 000 | * 100 000 | * 95 000 |
| India (c)           | * 4 500  | * 1 700   | * 1 000   | * 1 000   | * 1 000  |
| Iran (d)            | 1 500    | 4 500     | 1 500     | 1 120     | * 1 200  |
| Korea (Rep. of) (e) | 12 934   | 14 576    | 16 559    | 23 433    | 20 983   |
| Malaysia (f)        | 4 716    | 4 787     | 5 165     | 4 358     | 4 083    |
| Sri Lanka           | 1 449    | 1 422     | * 1 500   | * 1 500   | * 1 500  |
| Taiwan              | 1 879    | 750       | 2 970     | 3 312     | 3 186    |
| World total         | 261 000  | 277 000   | 299 000   | 299 000   | 299 000  |

### Note(s)

(1) In addition to the countries listed, Egypt and Romania are believed to produce mica.

(a) Including mica recovered from mica schists and/or kaolin beneficiation

(b) Sold or used by producers

(c) Years ended 31 March following that stated

(d) Years ended 20 March following that stated

(e) Mainly sericite

(f) Sericite



## Mine production of molybdenum

tonnes (metal content)

| Country     | 2016    | 2017    | 2018    | 2019    | 2020      |
|-------------|---------|---------|---------|---------|-----------|
| Armenia     | 5 438   | 5 886   | 5 666   | 7 360   | 12 691    |
| Norway      | 2       | * 2     | * 2     | * 2     | * 2       |
| Poland      | 1 320   | 1 220   | 1 190   | 1 230   | 1 210     |
| Russia      | 3 359   | 3 227   | 2 262   | 1 989   | 1 707     |
| Canada      | 2 883   | 4 941   | 5 036   | 3 955   | 2 671     |
| Mexico      | 11 896  | 13 985  | 20 265  | 21 694  | 18 562    |
| USA         | 36 200  | 40 700  | 41 400  | 48 000  | 51 100    |
| Argentina   | 2 048   | 1 297   | 728     | —       | —         |
| Brazil      | * 200   | * 200   | * 200   | * 200   | * 200     |
| Chile       | 55 834  | 62 454  | 60 248  | 53 541  | 59 319    |
| Peru        | 25 757  | 28 141  | 28 034  | 30 441  | 32 185    |
| China       | 129 357 | 117 104 | 113 308 | 104 435 | * 105 000 |
| Iran (a)    | 6 975   | 7 767   | 7 662   | 8 711   | * 8 700   |
| Kazakhstan  | —       | —       | 149     | 258     | 400       |
| Mongolia    | 2 431   | 2 639   | 2 579   | 2 492   | 2 889     |
| Uzbekistan  | 620     | 700     | 696     | 666     | 725       |
| World total | 284 000 | 290 000 | 289 000 | 285 000 | 297 000   |

### Note(s)

(1) In addition to the countries listed, Australia, Georgia, India, Democratic P.R. of Korea, Romania and Tajikistan are believed to produce molybdenum.

(a) Years ended 20 March following that stated

## Production of nepheline syenite

tonnes (metric)

| Country                | 2016      | 2017      | 2018      | 2019      | 2020      |
|------------------------|-----------|-----------|-----------|-----------|-----------|
| Norway                 | * 324 000 | * 324 000 | * 324 000 | * 324 000 | * 324 000 |
| Russia                 |           |           |           |           |           |
| Nepheline syenite      | 4 432 000 | 4 332 000 | 4 294 000 | 4 244 000 | 4 599 000 |
| Nepheline concentrates | 958 100   | 998 100   | 986 000   | 1 188 000 | 1 159 400 |
| Canada                 | 475 000   | 632 000   | 549 000   | 506 000   | 506 000   |

## Mine production of nickel

tonnes (metal content)

| Country            | 2016      | 2017      | 2018      | 2019      | 2020      |
|--------------------|-----------|-----------|-----------|-----------|-----------|
| Albania            | 3 952     | 5 323     | 4 204     | 2 830     | 3 764     |
| Finland (a)        | 20 654    | 34 641    | 43 572    | 38 530    | 41 429    |
| Greece             | 21 800    | 19 100    | 17 900    | 13 700    | 7 100     |
| Kosovo             | 4 265     | 7 120     | 4 791     | 3 314     | 3 958     |
| Norway             | 200       | 200       | 300       | 200       | 300       |
| Poland             | 770       | 720       | 700       | 720       | 710       |
| Russia             | 223 000   | 221 000   | 218 000   | 223 200   | 237 300   |
| Turkey             | 9 337     | 14 770    | 13 559    | 4 742     | 20 201    |
| Botswana           | 14 273    | —         | —         | —         | —         |
| Ivory Coast        | —         | 400       | 12 300    | 9 100     | 18 600    |
| Madagascar         | 42 105    | 35 474    | 33 183    | 33 736    | 9 900     |
| Morocco            | —         | 196       | 126       | 131       | 100       |
| South Africa       | 48 994    | 48 383    | 43 236    | 43 443    | 34 908    |
| Zambia             | —         | —         | 487       | 2 500     | 3 251     |
| Zimbabwe           | 17 743    | 16 617    | 17 850    | 16 279    | 16 336    |
| Canada             | 235 034   | 214 302   | 185 962   | 180 904   | 167 243   |
| Cuba               | 47 800    | 49 300    | 49 000    | 45 500    | * 50 000  |
| Dominican Republic | 9 913     | 15 632    | 19 214    | 28 450    | 22 005    |
| Guatemala          | 36 939    | 54 517    | 65 710    | 36 300    | 68 363    |
| USA                | 23 417    | 21 302    | 17 573    | 13 494    | 16 718    |
| Brazil             | 134 600   | 83 200    | 65 300    | 55 700    | 77 100    |
| Colombia           | 37 091    | 40 606    | 43 055    | 40 571    | 36 094    |
| Burma (b)          | 22 562    | 21 828    | 11 475    | * 16 000  | * 22 200  |
| China              | 100 219   | 102 300   | 108 200   | 104 674   | * 105 000 |
| Indonesia          | 204 000   | 355 000   | 651 600   | 1 036 200 | 816 700   |
| Philippines        | 300 506   | 339 377   | 344 966   | 323 325   | 328 372   |
| Vietnam            | 4 272     | —         | —         | —         | —         |
| Australia          | 203 135   | 185 466   | 160 022   | 158 751   | 169 344   |
| New Caledonia      | 204 207   | 215 382   | 216 225   | 208 185   | 199 485   |
| Papua New Guinea   | 22 269    | 34 666    | 35 355    | 33 091    | 33 650    |
| World total        | 1 993 000 | 2 137 000 | 2 384 000 | 2 674 000 | 2 510 000 |

### Note(s)

(a) In addition some nickel is produced as a by-product of a talc operation. The amount is negligible

(b) Years ended 31 March of the year following that stated

## Smelter/refinery production of nickel

tonnes (metric)

| Country            | 2016      | 2017      | 2018      | 2019      | 2020      |
|--------------------|-----------|-----------|-----------|-----------|-----------|
| Austria            | 700       | * 700     | * 700     | * 700     | * 700     |
| Finland            | 85 424    | 85 780    | 92 591    | 90 151    | 90 837    |
| France             | 4 600     | 2 300     | 3 700     | 6 900     | 6 700     |
| Greece             | 17 071    | 16 781    | 15 720    | 11 974    | 6 000     |
| Kosovo             | * 5 400   | * 7 500   | * 5 500   | * 6 500   | * 6 900   |
| North Macedonia    | 10 600    | 7 200     | 10 100    | 15 300    | 17 700    |
| Norway             | 92 735    | 86 495    | 90 758    | 92 132    | 91 120    |
| Poland             | 770       | 720       | 700       | 720       | 700       |
| Russia             | 188 700   | 212 300   | 158 000   | 166 300   | 172 400   |
| Ukraine            | 18 100    | 15 300    | 15 807    | 14 200    | 14 719    |
| United Kingdom     | 43 104    | 37 090    | 38 211    | 34 976    | 35 177    |
| Madagascar         | 42 105    | 35 474    | 33 183    | 33 736    | 9 900     |
| South Africa       | 42 100    | 43 000    | 39 500    | 39 100    | 29 100    |
| Canada             | 158 299   | 154 759   | 137 411   | 124 736   | 124 043   |
| Cuba               | 15 000    | 15 800    | 14 700    | 12 900    | 14 800    |
| Dominican Republic | 9 961     | 15 363    | 18 794    | 27 532    | 20 724    |
| Guatemala          | 8 688     | 12 416    | 14 688    | 20 323    | 22 894    |
| Brazil             | 77 100    | 68 500    | 62 200    | 54 300    | 59 600    |
| Colombia           | 37 091    | 40 606    | 43 055    | 40 571    | 36 094    |
| Burma (a)          | 22 562    | 21 828    | 11 475    | * 16 000  | * 22 200  |
| China              | 573 400   | 670 000   | 705 000   | 806 000   | * 750 000 |
| India              | * 300     | * 100     | * 100     | * 50      | —         |
| Indonesia          | 116 300   | 204 300   | 289 900   | 409 000   | 632 000   |
| Japan              | 195 565   | 187 046   | 186 736   | 182 652   | 170 014   |
| Korea (Rep. of)    | 44 857    | 43 861    | 43 386    | 41 067    | 45 600    |
| Australia          | 120 520   | 108 500   | 114 517   | 106 470   | 115 800   |
| New Caledonia      | 95 983    | 104 094   | 107 914   | 87 921    | 72 455    |
| World total        | 2 027 000 | 2 198 000 | 2 254 000 | 2 442 000 | 2 568 000 |

### Note(s)

(1) Data relate to refined nickel plus the nickel content of ferro-nickel, nickel oxide and nickel salts. It does not include nickel content of nickel hydroxide cake or nickel matte as these are further refined elsewhere.

(2) In addition to the countries listed, the USA produces some nickel as a refinery by-product.

(a) Years ending 31 March following that stated

## Production of perlite

tonnes (metric)

| Country       | 2016      | 2017      | 2018        | 2019        | 2020        |
|---------------|-----------|-----------|-------------|-------------|-------------|
| Armenia       | 4         | 78        | 8           | —           | *—          |
| Bulgaria      | —         | 4 800     | * 5 000     | * 5 000     | * 5 000     |
| Georgia       | * 20 000  | * 20 000  | 22 577      | 21 000      | 21 736      |
| Greece        | 921 410   | 932 950   | 790 412     | 719 000     | 718 000     |
| Hungary       | 76 254    | 71 412    | 80 396      | 76 723      | * 70 000    |
| Italy         | * 60 000  | * 60 000  | * 60 000    | * 60 000    | * 60 000    |
| Russia        | * 45 000  | * 45 000  | * 45 000    | * 45 000    | * 45 000    |
| Slovakia      | 19 000    | 47 510    | 36 000      | 32 000      | 37 310      |
| Turkey        | 1 066 251 | 1 116 629 | 1 088 983   | 1 174 486   | * 1 200 000 |
| Ukraine       | 15 772    | 16 560    | * 17 000    | * 17 000    | * 17 000    |
| South Africa  | * 1 000   | * 1 000   | * 1 000     | * 1 000     | * 1 000     |
| Mexico        | 19 000    | 15 899    | 26 400      | 24 497      | * 20 000    |
| USA           | 521 000   | 570 000   | 510 000     | 526 000     | * 520 000   |
| Argentina     | 17 905    | 19 924    | 18 794      | 19 000      | * 19 000    |
| Chile         | 5 500     | 4 210     | 5 020       | 4 700       | —           |
| China         | 1 930 000 | 1 219 000 | * 1 300 000 | * 1 300 000 | * 1 300 000 |
| Iran (a)      | 524 823   | 368 601   | 194 216     | 726 749     | * 700 000   |
| Philippines   | 14 460    | 40 789    | 9 696       | 6 608       | * 10 000    |
| Thailand      | 18 740    | 5 850     | 5 600       | 15 000      | 15 000      |
| Australia (b) | 620       | 275       | 2 285       | 1 264       | 2 185       |

### Note(s)

(1) In addition to the countries listed, Algeria, Canada, Djibouti, Iceland, Morocco and Mozambique are believed to produce perlite.

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

## Production of crude petroleum

tonnes (metric)

| Country                    | 2016        | 2017        | 2018        | 2019        | 2020        |
|----------------------------|-------------|-------------|-------------|-------------|-------------|
| Albania                    | 1 055 764   | 954 768     | 910 683     | 1 005 088   | 757 393     |
| Austria (a)                | 809 358     | 741 890     | 664 009     | 626 877     | 594 789     |
| Azerbaijan                 | 40 999 100  | 38 688 400  | 38 814 300  | 37 501 200  | 34 585 400  |
| Belarus                    | 1 645 000   | 1 650 000   | 1 670 000   | 1 690 000   | 1 710 000   |
| Bulgaria                   | 22 600      | 21 930      | * 21 930    | * 21 930    | * 20 500    |
| Croatia                    | 676 752     | 682 339     | 682 128     | 657 553     | 585 567     |
| Czech Republic             | 116 000     | 107 000     | 109 000     | 81 000      | 91 000      |
| Denmark                    | 6 949 005   | 6 740 075   | 5 635 500   | 4 979 725   | 3 522 230   |
| Estonia (b)                | 1 875 685   | 2 537 881   | 2 376 608   | 1 671 050   | 1 283 064   |
| France                     | 6 447 935   | 5 886 993   | 6 146 655   | 5 269 899   | 5 634 302   |
| Georgia                    | 38 557      | 31 995      | 30 159      | 35 070      | 31 293      |
| Germany                    | 2 355 028   | 2 218 406   | 2 066 642   | 1 923 232   | 1 895 942   |
| Greece                     | 329 000     | 313 000     | 365 000     | 695 000     | 261 000     |
| Hungary                    | 774 000     | 705 274     | 816 111     | 1 158 129   | * 1 000 000 |
| Italy                      | 3 740 000   | 4 140 000   | 4 670 000   | 4 270 000   | 5 380 000   |
| Lithuania                  | 63 468      | 55 829      | 46 029      | 39 572      | 31 631      |
| Netherlands                | 1 558 000   | 1 464 000   | 1 478 000   | 1 111 000   | 1 035 000   |
| Norway                     | 98 466 000  | 96 830 000  | 91 080 000  | 85 386 000  | 98 686 000  |
| Poland                     | 876 546     | 996 049     | 1 010 332   | 972 564     | 937 462     |
| Romania                    | 3 685 575   | 3 538 345   | 3 485 778   | 3 439 564   | 3 334 019   |
| Russia                     | 548 000 000 | 547 000 000 | 556 000 000 | 561 000 000 | 512 000 000 |
| Serbia                     | 933 884     | 893 000     | 876 592     | 854 000     | 831 000     |
| Slovakia                   | 9 000       | 5 000       | 5 000       | 4 000       | 3 000       |
| Slovenia                   | 229         | 241         | 270         | 267         | 247         |
| Spain                      | 139 176     | 118 809     | 89 476      | 39 861      | 26 819      |
| Turkey                     | 2 336 391   | 2 638 251   | 4 213 619   | 2 899 719   | 3 722 646   |
| Ukraine                    | 2 272 000   | 2 098 200   | 2 293 000   | 2 453 600   | 2 429 700   |
| United Kingdom             | 47 445 000  | 46 630 000  | 51 188 000  | 52 488 000  | 48 985 000  |
| Algeria                    | 68 400 000  | 66 600 000  | 65 300 000  | 64 300 000  | 57 600 000  |
| Angola                     | 85 800 000  | 81 600 000  | 74 100 000  | 69 100 000  | 64 500 000  |
| Cameroon                   | 4 716 700   | 3 880 800   | 3 518 600   | 3 639 400   | 3 717 800   |
| Chad                       | 6 100 000   | 5 200 000   | 6 100 000   | 6 700 000   | 6 600 000   |
| Congo                      | 9 970 000   | 12 250 000  | 16 870 000  | 16 340 000  | 14 050 000  |
| Congo, Democratic Republic | 1 075 779   | 1 034 393   | 1 152 050   | 1 120 345   | 1 352 643   |
| Egypt                      | 33 800 000  | 32 200 000  | 32 800 000  | 31 800 000  | 30 000 000  |
| Equatorial Guinea          | 10 300 000  | 9 000 000   | 8 100 000   | 7 400 000   | 7 500 000   |
| Gabon                      | 11 480 000  | 10 500 000  | 9 650 000   | 10 300 000  | 10 400 000  |
| Ghana                      | 4 960 192   | 7 615 649   | 8 787 451   | 10 070 693  | 10 132 270  |
| Ivory Coast                | 2 117 487   | 1 707 688   | 1 852 507   | 1 969 747   | 1 841 985   |
| Libya                      | 18 810 000  | 43 757 120  | 55 146 520  | 61 500 000  | 18 300 000  |
| Mauritania                 | 240 528     | 165 603     | —           | —           | *—          |
| Morocco                    | 5 000       | 4 000       | 5 000       | * 5 000     | * 5 000     |
| Niger                      | 647 220     | 647 220     | 597 432     | 547 646     | 472 967     |
| Nigeria                    | 91 300 000  | 94 500 000  | 96 400 000  | 101 400 000 | 86 900 000  |
| Senegal                    | 3 300       | 13 000      | 20 200      | 28 600      | 3 300       |
| South Africa               | 38 796      | 31 145      | 23 781      | —           | —           |
| South Sudan                | 6 800 000   | 7 300 000   | 7 100 000   | 8 400 000   | 8 400 000   |
| Sudan                      | 4 074 800   | 3 589 000   | 3 588 400   | 4 800 000   | 4 200 000   |
| Tunisia                    | 2 168 400   | 1 827 600   | 1 764 000   | 1 686 000   | 1 557 600   |
| Barbados                   | 31 944      | 32 046      | 30 254      | 28 733      | 23 736      |
| Canada                     | 193 100 000 | 209 600 000 | 228 300 000 | 232 900 000 | 222 600 000 |
| Cuba                       | 2 619 200   | 2 522 200   | 2 462 500   | 2 371 500   | * 2 300 000 |
| Guatemala                  | 475 741     | 488 068     | 466 496     | 486 250     | 395 591     |
| Mexico                     | 127 077 904 | 115 135 269 | 107 070 000 | 99 212 000  | 98 850 000  |
| Trinidad & Tobago          | 3 693 394   | 3 700 692   | 3 271 538   | 3 032 284   | 2 917 631   |
| USA                        | 566 486 345 | 600 507 895 | 700 573 565 | 780 610 700 | 747 021 029 |
| Argentina                  | 27 176 128  | 25 463 642  | 26 013 729  | 26 060 312  | 25 603 785  |
| Bolivia                    | 3 566 000   | 3 520 000   | 3 566 000   | * 3 500 000 | * 3 500 000 |
| Brazil                     | 135 223 698 | 141 362 424 | 139 356 470 | 149 550 768 | 157 682 321 |
| Chile                      | 213 032     | 176 065     | 158 795     | 159 977     | 101 658     |
| Colombia                   | 45 661 017  | 45 000 000  | 45 600 000  | 46 700 000  | 41 300 000  |
| Ecuador                    | 29 500 000  | 28 500 000  | 27 700 000  | 28 500 000  | 25 800 000  |
| Peru                       | 6 657 419   | 6 620 481   | 6 635 696   | 6 898 900   | 6 159 700   |
| Suriname                   | 961 341     | 959 752     | 964 639     | 971 528     | 967 898     |
| Venezuela                  | 120 100 000 | 107 600 000 | 75 600 000  | 46 600 000  | 27 400 000  |

## Production of crude petroleum

tonnes (metric)

| Country              | 2016          | 2017          | 2018          | 2019          | 2020          |
|----------------------|---------------|---------------|---------------|---------------|---------------|
| Afghanistan          | * 2 700       | * 900         | * 900         | * 900         | * 900         |
| Bahrain              | 3 065 000     | 2 807 000     | 2 769 000     | 3 177 000     | * 3 000 000   |
| Bangladesh           | —             | 491 300       | 617 500       | 591 800       | * 600 000     |
| Brunei               | 5 960 395     | 5 555 999     | 5 478 268     | 5 966 407     | 5 435 513     |
| Burma                | 619 000       | 579 000       | 486 000       | 432 000       | * 430 000     |
| China (a)            | 199 685 200   | 191 506 100   | 189 324 200   | 191 014 100   | * 190 000 000 |
| East Timor           | 1 007 000     | 800 000       | 603 000       | * 819 000     | 826 007       |
| India (c)            | 36 009 000    | 35 684 000    | 34 203 000    | 32 169 000    | 30 491 000    |
| Indonesia            | 41 553 000    | 40 051 000    | 38 600 000    | 37 264 000    | 35 513 000    |
| Iran                 | 216 100 000   | 231 400 000   | 218 700 000   | 157 800 000   | 142 700 000   |
| Iraq                 | 217 600 000   | 222 400 000   | 227 000 000   | 234 200 000   | 202 000 000   |
| Israel               | 92 837        | 65 488        | 75 292        | 85 563        | 132 820       |
| Japan                | 501 000       | 512 000       | 455 000       | 477 000       | 467 540       |
| Jordan               | 400           | 300           | 1 000         | * 1 000       | * 1 000       |
| Kazakhstan           | 78 031 700    | 86 194 000    | 90 359 000    | 90 555 400    | 85 656 100    |
| Kuwait (d)           | 152 600 000   | 145 000 000   | 146 800 000   | 143 400 000   | 130 100 000   |
| Kyrgyzstan           | 145 300       | 173 200       | 200 000       | 233 100       | 240 200       |
| Malaysia             | 31 860 000    | 31 527 000    | 31 192 900    | 2 913 900     | 2 655 900     |
| Mongolia             | 1 134 773     | 1 048 707     | 878 762       | 946 818       | 564 773       |
| Oman                 | 49 816 773    | 48 331 377    | 48 719 782    | 48 346 316    | 47 340 450    |
| Pakistan (e)         | 4 246 335     | 4 329 140     | 4 367 729     | 4 359 424     | * 4 300 000   |
| Philippines          | 844 200       | 755 013       | 730 952       | 656 462       | 572 350       |
| Qatar                | 81 600 000    | 79 100 000    | 79 500 000    | 78 500 000    | 75 900 000    |
| Saudi Arabia (d)     | 586 600 000   | 559 300 000   | 578 300 000   | 556 600 000   | 519 600 000   |
| Syria                | 1 100 000     | 1 100 000     | 1 100 000     | 1 500 000     | 2 000 000     |
| Taiwan               | 8 446         | 5 407         | 4 678         | 3 860         | 2 170         |
| Tajikistan           | 25 134        | 23 400        | 23 939        | 23 293        | 24 466        |
| Thailand             | 14 520 000    | 13 390 000    | 12 795 000    | 12 812 000    | 10 532 857    |
| Turkmenistan         | 13 200 000    | 13 100 000    | 12 600 000    | 12 500 000    | 10 300 000    |
| United Arab Emirates | 182 400 000   | 176 200 000   | 176 700 000   | 180 200 000   | 165 600 000   |
| Uzbekistan           | 2 600 000     | 2 800 000     | 2 900 000     | 2 800 000     | 2 100 000     |
| Vietnam              | 17 230 000    | 15 518 000    | 13 969 000    | 13 090 000    | 11 470 000    |
| Yemen, Republic of   | 1 600 000     | 2 400 000     | 2 800 000     | 4 100 000     | 4 100 000     |
| Australia            | 16 112 627    | 15 495 471    | 16 206 743    | 20 931 300    | 20 442 600    |
| New Zealand          | 1 571 650     | 1 400 440     | 1 085 220     | 1 121 090     | 963 870       |
| Papua New Guinea     | 1 195 000     | 946 000       | 467 300       | 367 500       | * 365 000     |
| World total          | 4 360 000 000 | 4 372 000 000 | 4 477 000 000 | 4 441 000 000 | 4 126 000 000 |

### Note(s)

(1) The figures shown in this table include natural gas liquids.

- (a) Including oil from shale and coal
- (b) From oil shale
- (c) Years ended 31 March following that stated
- (d) Including shares of production from the Neutral Zone
- (e) Years ended 30 June of that stated

## Production of natural gas

million cubic metres

| Country               | 2016    | 2017    | 2018     | 2019     | 2020      |
|-----------------------|---------|---------|----------|----------|-----------|
| Albania               | 92      | 102     | 92       | 80       | 57        |
| Austria               | 1 253   | 1 742   | 969      | 891      | 743       |
| Azerbaijan            | 18 718  | 18 186  | 19 207   | 24 514   | 26 065    |
| Belarus               | 216     | 205     | 211      | 218      | 219       |
| Bulgaria              | 80      | 65      | * 65     | * 65     | * 65      |
| Croatia               | 1 690   | 1 530   | 1 279    | 1 070    | 888       |
| Czech Republic        | 169     | 171     | 179      | 146      | 138       |
| Denmark               | 4 301   | 4 592   | 3 929    | 2 980    | 1 351     |
| France                | 20      | 17      | 9        | 17       | ----      |
| Georgia               | 7       | 9       | 10       | 9        | 9         |
| Germany               | 8 608   | 7 932   | 6 888    | 6 699    | 5 692     |
| Greece                | 9       | 8       | 11       | 11       | 6         |
| Hungary               | 1 986   | 1 885   | 2 104    | 1 386    | 1 237     |
| Ireland, Republic of  | 2 748   | 3 171   | 3 057    | 2 385    | 1 838     |
| Italy                 | 6 020   | 5 650   | 5 500    | 4 980    | 4 420     |
| Netherlands           | 50 373  | 43 915  | 36 735   | 31 671   | 22 831    |
| Norway                | 116 820 | 124 160 | 121 560  | 115 130  | 112 300   |
| Poland                | 5 401   | 5 408   | 5 348    | 5 374    | 5 302     |
| Romania               | 10 118  | 11 071  | 10 752   | 10 448   | 9 357     |
| Russia                | 641 000 | 691 000 | 726 000  | 738 000  | 694 000   |
| Serbia                | 595     | 548     | 506      | 477      | 448       |
| Slovakia              | 87      | 88      | 80       | 75       | 65        |
| Slovenia              | 5       | 8       | 15       | 7        | 5         |
| Spain                 | 8       | 13      | 93       | 131      | 47        |
| Turkey                | 316     | 368     | 425      | 481      | * 480     |
| Ukraine               | 20 047  | 20 510  | 20 806   | 20 520   | 20 171    |
| United Kingdom        | 41 653  | 42 094  | 40 827   | 39 265   | 39 342    |
| Algeria               | 91 400  | 93 000  | 93 800   | 86 200   | 81 500    |
| Angola                | 1 710   | 3 100   | 6 160    | 6 740    | * 6 000   |
| Cameroon              | 357     | 392     | 1 463    | 2 006    | 2 130     |
| Congo                 | 1 388   | 1 388   | 1 388    | 1 388    | * 1 400   |
| Egypt                 | 40 300  | 48 800  | 58 600   | 64 900   | 58 500    |
| Equatorial Guinea (a) | 6 079   | 6 357   | 5 844    | 4 786    | 6 000     |
| Gabon (a)             | 530     | 565     | 622      | 310      | * 300     |
| Ghana                 | 1 273   | 2 189   | 2 590    | 4 802    | * 5 000   |
| Ivory Coast           | 2 396   | 2 155   | 1 935    | 2 400    | 2 400     |
| Libya                 | 14 800  | 13 600  | 13 200   | 14 500   | 13 300    |
| Morocco               | 85      | 88      | 93       | 105      | * 100     |
| Mozambique            | * 5 000 | 3 730   | 4 171    | 4 549    | 4 802     |
| Nigeria               | 42 600  | 47 200  | 48 300   | 49 300   | 49 400    |
| Senegal               | 23      | 18      | 11       | 16       | 14        |
| South Africa          | 820     | 749     | 624      | 668      | 563       |
| Tanzania              | 47 704  | 51 054  | 58 951   | * 60 000 | * 60 000  |
| Tunisia               | 2 213   | 2 089   | 1 961    | 1 795    | 1 864     |
| Barbados              | 17      | 15      | 14       | 14       | 11        |
| Canada                | 158 452 | 160 885 | 157 176  | 161 367  | 158 325   |
| Cuba                  | 1 185   | 1 051   | 970      | 951      | 895       |
| Mexico                | 52 248  | 48 704  | * 46 000 | * 38 900 | * 38 600  |
| Trinidad & Tobago     | 34 091  | 34 391  | 36 647   | 36 658   | 31 177    |
| USA (a)               | 752 557 | 773 738 | 870 912  | 961 282  | 947 633   |
| Argentina             | 44 988  | 44 595  | 40 294   | 46 305   | 41 560    |
| Bolivia               | 21 134  | 18 200  | 17 000   | 15 000   | 14 400    |
| Brazil                | 25 337  | 28 663  | 26 687   | 27 358   | 25 403    |
| Chile                 | 1 175   | 1 200   | 1 221    | 1 339    | 1 316     |
| Colombia              | 12 000  | 12 300  | 12 900   | 13 200   | 13 300    |
| Ecuador               | 538     | 481     | 368      | 340      | * 300     |
| Peru                  | 13 954  | 12 934  | 12 741   | 13 418   | 11 993    |
| Venezuela             | 37 200  | 38 600  | 31 600   | 25 600   | 18 800    |
| Afghanistan (b)       | 165     | 156     | 153      | 129      | 80        |
| Bahrain               | 21 062  | 21 465  | 21 879   | 24 887   | * 25 000  |
| Bangladesh (c)        | 27 489  | 27 445  | 27 430   | 27 233   | 24 993    |
| Brunei                | 12 025  | 12 290  | 11 851   | 12 140   | 11 795    |
| Burma                 | 18 971  | 18 644  | 16 028   | 18 800   | * 18 800  |
| China                 | 136 865 | 148 035 | 160 159  | 176 174  | * 176 000 |

## Production of natural gas

million cubic metres

| Country              | 2016      | 2017      | 2018      | 2019      | 2020      |
|----------------------|-----------|-----------|-----------|-----------|-----------|
| East Timor           | 5 855     | 5 270     | 6 554     | 7 152     | 6 770     |
| India (d)            | 31 897    | 32 649    | 32 057    | 30 260    | 28 670    |
| Indonesia            | 74 704    | 72 295    | 72 601    | 67 184    | 59 206    |
| Iran                 | 199 300   | 213 800   | 232 000   | 241 400   | 250 800   |
| Iraq                 | 9 900     | 10 100    | 10 600    | 11 000    | 10 500    |
| Israel               | 9 390     | 9 570     | 10 480    | 10 500    | 15 000    |
| Japan                | 2 754     | 3 008     | 2 707     | 2 524     | 2 295     |
| Jordan               | 116       | 102       | 93        | * 110     | * 110     |
| Kazakhstan           | 46 677    | 52 921    | 55 453    | 56 681    | 55 379    |
| Kuwait (e)           | 16 400    | 16 200    | 16 900    | 17 900    | 15 000    |
| Kyrgyzstan           | 29        | 26        | 27        | 24        | 22        |
| Malaysia             | 67 510    | 70 251    | 66 171    | 68 660    | 63 330    |
| Oman                 | 31 742    | 30 463    | 34 640    | 36 484    | 35 146    |
| Pakistan (c)         | 41 958    | 41 684    | 41 318    | 40 684    | * 40 000  |
| Philippines          | 3 977     | 3 923     | 4 380     | 4 410     | 4 000     |
| Qatar                | 174 500   | 170 500   | 169 100   | 172 100   | 171 300   |
| Saudi Arabia (e)     | 105 300   | 109 300   | 112 100   | 111 200   | 112 100   |
| Syria                | 3 500     | 3 500     | 3 600     | 3 300     | 3 000     |
| Taiwan               | 322       | 266       | 198       | 167       | 105       |
| Tajikistan           | 3         | 2         | 1         | 1         | 1         |
| Thailand             | 39 273    | 37 925    | 37 393    | 38 047    | 32 700    |
| Turkmenistan         | 63 200    | 58 700    | 61 500    | 63 200    | 59 000    |
| United Arab Emirates | 59 500    | 59 500    | 58 000    | 58 000    | 55 400    |
| Uzbekistan           | 53 100    | 53 400    | 57 200    | 57 300    | 47 100    |
| Vietnam              | 10 610    | 9 866     | 10 010    | 10 200    | 9 160     |
| Yemen, Republic of   | 500       | 300       | 100       | 100       | 100       |
| Australia            | 97 328    | 113 805   | 130 987   | 154 485   | 154 263   |
| New Zealand          | 4 811     | 4 808     | 4 204     | 4 510     | 4 436     |
| Papua New Guinea     | 10 455    | 11 018    | 9 809     | 11 204    | * 11 000  |
| World                | 3 727 000 | 3 860 000 | 4 039 000 | 4 191 000 | 4 047 000 |

### Note(s)

(1) So far as possible the figures in this table exclude flared or reinjected gas.

- (a) Dry gas
- (b) Years ended 20 March following that stated
- (c) Years ended 30 June of that stated
- (d) Years ended 31 March following that stated
- (e) Including one-half of the output of the Neutral Zone



## Production of phosphate rock

tonnes (metric)

| Country                    | 2016        | 2017        | 2018        | 2019        | 2020         |
|----------------------------|-------------|-------------|-------------|-------------|--------------|
| Finland                    | 939 531     | 978 613     | 989 073     | 994 572     | 995 066      |
| Russia                     | 12 300 000  | 13 200 000  | 13 600 000  | 13 800 000  | 13 800 000   |
| Turkey                     | 772 500     | —           | —           | 315 215     | 872 894      |
| Algeria                    | 1 274 000   | 1 112 000   | 1 204 100   | 1 338 400   | * 1 300 000  |
| Burkina Faso               | * 1 000     | * 1 000     | 1 321       | 1 573       | * 1 600      |
| Egypt (a)                  | 3 523 785   | 3 071 011   | * 3 000 000 | * 2 700 000 | * 2 100 000  |
| Malawi                     | 2 500       | 1 000       | 1 594       | 1 753       | —            |
| Mali                       | 37 236      | 41 000      | * 46 000    | * 46 000    | * 46 000     |
| Morocco                    | 26 900 000  | 32 800 000  | 37 600 000  | 35 300 000  | * 35 000 000 |
| Senegal                    |             |             |             |             |              |
| Phosphate rock             | 1 609 000   | 1 385 000   | 1 782 000   | 1 748 000   | 1 511 000    |
| Aluminium phosphate (b)    | * 1 000 000 | * 1 000 000 | 917 200     | 643 900     | 1 427 500    |
| South Africa               | 1 696 533   | 2 079 294   | 2 058 274   | 1 825 719   | 581 392      |
| Tanzania                   | 23 658      | 1 351       | —           | —           | 28 376       |
| Togo                       | 850 076     | 732 503     | 930 857     | 703 573     | 1 300 000    |
| Tunisia                    | 3 663 613   | 4 422 100   | 2 802 000   | 4 108 800   | 3 194 100    |
| Zimbabwe                   | 6 500       | * 24 000    | * 20 000    | * 19 000    | * 19 000     |
| Cuba                       | —           | —           | —           | —           | 1 600        |
| Mexico                     | 3 294 266   | 2 307 180   | 741 678     | 831 737     | 577 152      |
| USA                        | 27 100 000  | 27 900 000  | 25 700 000  | 23 300 000  | 23 400 000   |
| Brazil (c)                 | 5 850 000   | 6 033 000   | 5 740 000   | 5 300 000   | * 5 500 000  |
| Chile                      |             |             |             |             |              |
| Phosphate rock             | 1 604       | —           | —           | —           | —            |
| Guano                      | 4 601       | 4 238       | 4 154       | 3 405       | 2 091        |
| Colombia                   | 84 179      | 63 483      | 52 945      | 78 282      | 21 997       |
| Peru                       | 10 561 111  | 8 450 379   | 10 308 276  | 11 091 502  | 8 594 180    |
| Venezuela                  | * 25 000    | 68 062      | * 70 000    | * 70 000    | * 70 000     |
| China                      | 144 398 000 | 123 132 000 | 96 326 000  | 93 324 000  | * 93 000 000 |
| Christmas Island (a)(d)(e) | 770 000     | 644 000     | 643 000     | 486 000     | 387 000      |
| India (f)                  | 1 124 440   | 1 515 645   | 1 284 580   | 1 400 186   | 1 455 627    |
| Iran (g)                   | 64 805      | 52 600      | 86 579      | 119 227     | * 120 000    |
| Iraq                       | * 40 000    | * 40 000    | 377 120     | * 300 000   | * 300 000    |
| Israel                     | 3 591 200   | 2 637 440   | 3 028 800   | 2 649 800   | 2 505 200    |
| Jordan                     | 7 991 157   | 8 687 581   | 8 022 393   | 9 223 346   | 8 937 752    |
| Kazakhstan                 | * 1 830 000 | * 1 830 000 | * 1 830 000 | * 1 830 000 | * 1 830 000  |
| Laos                       |             |             |             |             |              |
| Guano                      | 181 000     | 435 000     | —           | 635         | 230          |
| Pakistan (a)               | 115 140     | 61 677      | 68 541      | 83 044      | * 80 000     |
| Philippines                |             |             |             |             |              |
| Phosphate rock             | 8 019       | 159         | 1 236       | * 1 500     | * 1 500      |
| Guano                      | 670         | * 700       | 1 500       | * 1 500     | * 1 500      |
| Saudi Arabia               | 5 400 000   | 5 800 000   | 5 444 000   | 5 716 000   | * 5 700 000  |
| Sri Lanka                  | 38 848      | 42 435      | 46 530      | 47 438      | 52 103       |
| Syria                      | * —         | * 100 000   | * 2 000 000 | * 2 000 000 | * 360 000    |
| Thailand                   | * 500       | 8 000       | —           | —           | —            |
| Uzbekistan                 | * 700 000   | * 700 000   | 617 900     | 588 600     | 646 000      |
| Vietnam                    | 3 142 500   | 4 588 000   | 4 332 216   | 4 489 600   | 4 389 500    |
| Australia (a)              | 1 037 265   | 942 373     | 850 987     | 720 615     | 936 043      |
| Nauru (d)                  | 114 350     | 126 000     | 61 042      | 81 500      | 119 498      |
| World total                | 272 000 000 | 257 000 000 | 233 000 000 | 227 000 000 | 221 000 000  |

### Note(s)

(1) In addition to the countries listed, Indonesia and Nigeria are believed to produce phosphate rock.

(a) Years ended 30 June of that stated

(b) Including lime phosphates

(c) Including beneficiated and directly shipped material

(d) Exports

(e) Including phosphate dust

(f) Years ended 31 March following that stated

(g) Years ended 20 March following that stated

## Mine production of platinum group metals

kilograms (metal content)

| Country                   | 2016     | 2017     | 2018     | 2019     | 2020     |
|---------------------------|----------|----------|----------|----------|----------|
| Finland                   |          |          |          |          |          |
| Platinum                  | 1 154    | 1 418    | 1 576    | 953      | 1 276    |
| Palladium                 | 883      | 1 021    | 1 157    | 699      | 858      |
| Poland                    |          |          |          |          |          |
| Platinum                  | 50       | * 11     | 8        | * 8      | * 8      |
| Palladium                 | 30       | * 7      | * 7      | * 7      | * 7      |
| Russia                    |          |          |          |          |          |
| Platinum                  | 20 500   | 22 100   | 23 800   | 22 100   | 23 500   |
| Palladium                 | 78 300   | 86 300   | 85 300   | 86 600   | 92 300   |
| Other platinum metals (a) | 2 600    | 2 400    | 2 100    | 2 100    | 2 000    |
| Serbia                    |          |          |          |          |          |
| Platinum                  | 4        | 2        | 5        | * 10     | * 20     |
| Palladium                 | 31       | 38       | 55       | * 100    | * 100    |
| Ethiopia                  |          |          |          |          |          |
| Platinum (b)              | * 5      | * 4      | * 4      | * 2      | * 2      |
| South Africa              |          |          |          |          |          |
| Platinum                  | 133 241  | 131 247  | 137 053  | 132 989  | 111 993  |
| Palladium                 | 76 273   | 80 134   | 80 629   | 80 684   | 66 264   |
| Other platinum metals     | 54 139   | 48 895   | 52 964   | 54 395   | 46 835   |
| Zimbabwe                  |          |          |          |          |          |
| Platinum                  | 15 110   | 14 257   | 14 703   | 13 857   | 15 004   |
| Palladium                 | 12 222   | 11 822   | 12 094   | 11 639   | 12 890   |
| Other platinum metals     | 3 093    | 3 005    | 3 076    | 2 800    | 3 230    |
| Canada                    |          |          |          |          |          |
| Platinum                  | * 11 300 | * 9 800  | * 11 000 | * 10 300 | * 10 700 |
| Palladium                 | * 19 700 | * 17 100 | * 19 200 | * 17 900 | * 18 600 |
| Other platinum metals     | * 1 300  | * 1 100  | * 1 300  | * 1 200  | * 1 200  |
| USA                       |          |          |          |          |          |
| Platinum                  | 3 890    | 3 980    | 4 160    | 4 150    | 4 200    |
| Palladium                 | 13 070   | 13 600   | 14 300   | 14 300   | 14 600   |
| Other platinum metals     | 103      | * 100    | * 100    | * 100    | * 100    |
| Colombia                  | 917      | 567      | 270      | 176      | 410      |
| China                     |          |          |          |          |          |
| Platinum                  | 2 900    | 2 500    | 2 500    | * 2 500  | * 2 500  |
| Palladium                 | 1 400    | 1 400    | 1 300    | * 1 300  | * 1 300  |
| Australia                 | 762      | 765      | 541      | 483      | 522      |
| World total               | 453 000  | 454 000  | 469 000  | 461 000  | 430 000  |

### Note(s)

- (1) Wherever possible, figures relate to quantities of platinum group metals thought to be recovered from ores originating in the country stated.
- (2) Figures for metal production are only given for countries where recovery is thought to be based predominantly on domestic materials or on imported materials which have not been recorded as mine production elsewhere in the table.
- (3) In addition to the production listed, concentrates produced in Spain, and possibly other countries, are believed to be processed in China to recover platinum group metals.

- (a) Sales from mine production and stocks  
(b) Years ending 7 July of that stated

## Production of potash

tonnes (K<sub>2</sub>O content)

| Country        | 2016        | 2017        | 2018        | 2019        | 2020        |
|----------------|-------------|-------------|-------------|-------------|-------------|
| Belarus        | 6 180 050   | 7 101 799   | 7 346 096   | 7 348 293   | 7 562 153   |
| Germany        |             |             |             |             |             |
| Potassic salts | 2 694 126   | 2 963 561   | 2 754 085   | 2 615 284   | 2 874 026   |
| Russia         |             |             |             |             |             |
| Chloride       | 6 588 000   | 7 320 000   | 7 015 000   | 6 771 000   | 6 893 000   |
| Spain          |             |             |             |             |             |
| Chloride       | 667 224     | 557 469     | 603 812     | 519 644     | 351 918     |
| United Kingdom |             |             |             |             |             |
| Chloride       | 432 000     | 216 000     | 210 000     | —           | —           |
| Polyhalite     | 200 000     | 500 000     | 400 000     | 635 000     | 709 000     |
| Canada         |             |             |             |             |             |
| Chloride       | 10 208 000  | 12 624 000  | 13 944 000  | 12 851 000  | 13 783 530  |
| USA            |             |             |             |             |             |
| Potassic salts | 510 000     | 480 000     | 520 000     | 510 000     | * 470 000   |
| Brazil         |             |             |             |             |             |
| Chloride       | 500 917     | 306 000     | 201 200     | 200 000     | * 200 000   |
| Chile          |             |             |             |             |             |
| Chloride       | 1 237 447   | 1 197 105   | 988 512     | 681 697     | 951 125     |
| China          | * 5 780 000 | * 5 510 000 | * 5 450 000 | * 5 450 000 | * 5 450 000 |
| Israel         |             |             |             |             |             |
| Chloride       | 2 306 675   | 2 479 000   | 2 344 600   | 2 057 078   | 2 375 450   |
| Jordan         | 1 222 100   | 1 415 200   | 1 486 000   | 1 516 500   | 1 598 200   |
| Laos           | 320 257     | 469 172     | 554 103     | 462 738     | 713 718     |
| World total    | 38 800 000  | 43 100 000  | 43 800 000  | 41 600 000  | 43 900 000  |

## Production of rare earth oxides

tonnes (metric)

| Country       | 2016      | 2017      | 2018      | 2019      | 2020      |
|---------------|-----------|-----------|-----------|-----------|-----------|
| Russia        | 3 063     | 2 500     | 2 596     | 2 620     | 2 663     |
| Madagascar    | *—        | *—        | * 2 000   | * 2 800   | * 3 200   |
| USA           | —         | —         | 10 800    | 16 800    | * 22 800  |
| Burma         | * 4 500   | * 20 000  | * 34 000  | * 29 000  | * 36 000  |
| China (a)     | * 140 000 | * 140 000 | * 180 000 | * 180 000 | * 180 000 |
| India (b)     | 2 265     | 2 724     | 4 215     | 4 200     | 4 200     |
| Malaysia      | 1 221     | 196       | 1 012     | 71        | 14        |
| Vietnam       | * 220     | * 200     | * 920     | * 1 300   | * 1 000   |
| Australia (c) | 12 631    | 16 003    | 17 754    | 19 737    | 14 562    |

### Note(s)

- (1) All the figures in this table are either reported as rare earth oxides or are calculated to rare earth oxide equivalent.
  - (2) Prior to the 2005-2009 edition of this book, a table for the production of 'rare earth minerals' was included rather than the current 'rare earth oxides'. Users should exercise caution when comparing statistics over longer time periods.
  - (3) Although rare earth minerals are believed to be extracted in other countries, there is insufficient evidence to estimate the quantities of contained oxides.
  - (4) Where possible, data are shown against the country where the mineral is mined.
- (a) Includes production from iron ore extraction, bastnasite concentrates and ion absorption clays  
 (b) Years ending 31 March following that stated  
 (c) Years ending 30 June of that stated

## Production of rhenium

tonnes (metric)

| Country    | 2016 | 2017 | 2018 | 2019 | 2020 |
|------------|------|------|------|------|------|
| Poland     | 9    | 11   | 9    | 8    | 10   |
| Russia     | * 2  | * 2  | * 2  | * 2  | * 2  |
| USA        | 8    | 8    | 8    | 8    | * 8  |
| Chile      | * 27 | * 27 | * 27 | * 30 | * 30 |
| China      | * 3  | * 3  | * 3  | * 3  | * 3  |
| Kazakhstan | * 1  | * 1  | * 1  | * 1  | * 1  |
| Uzbekistan | * 0  | * 0  | —    | —    | —    |

## Production of salt

tonnes (metric)

| Country                | 2016      | 2017      | 2018        | 2019        | 2020        |
|------------------------|-----------|-----------|-------------|-------------|-------------|
| Albania                |           |           |             |             |             |
| Sea salt               | * 47 000  | * 47 000  | * 47 000    | * 47 000    | * 47 000    |
| Armenia                | 32 250    | 32 551    | 22 583      | 24 975      | 28 157      |
| Austria                |           |           |             |             |             |
| Rock salt              | 244       | 251       | 350         | —           | —           |
| Salt in brine          | 1 044 926 | 1 113 728 | 1 105 740   | 1 135 790   | 1 178 489   |
| Azerbaijan             | 4 690     | 4 985     | 4 208       | 4 526       | 4 045       |
| Belarus                | 2 476 493 | 2 628 985 | 2 904 097   | 2 517 590   | 1 198 290   |
| Bosnia & Herzegovina   | 966 177   | 1 029 302 | 1 063 457   | 1 069 210   | 947 838     |
| Bulgaria               | 3 300 000 | 3 400 000 | * 3 400 000 | * 3 400 000 | * 3 400 000 |
| Croatia                | 39 836    | 52 938    | 50 825      | 47 793      | 54 381      |
| Denmark                | * 580 000 | * 580 000 | * 580 000   | * 580 000   | * 580 000   |
| France                 | 5 185 000 | 4 663 569 | 4 532 085   | 4 364 736   | * 4 000 000 |
| Germany                |           |           |             |             |             |
| Rock salt              | 5 634 339 | 6 793 883 | 7 185 794   | 7 374 654   | 5 202 641   |
| Brine salt             | 2 278 304 | 2 679 189 | 2 609 664   | * 2 330 000 | 2 316 705   |
| Salt in brine          | 8 324 054 | 8 961 916 | 8 711 720   | 9 153 686   | 8 585 169   |
| Greece (a)             | 158 020   | * 160 000 | * 160 000   | * 160 000   | * 160 000   |
| Italy                  |           |           |             |             |             |
| Rock salt & brine salt | 2 550 849 | 2 283 406 | 1 514 829   | 1 538 072   | 1 192 956   |
| Malta                  | * 1 000   | * 1 000   | * 1 000     | * 1 000     | * 1 000     |
| Montenegro             |           |           |             |             |             |
| Sea salt               | * 10 000  | * 10 000  | * 10 000    | * 10 000    | * 10 000    |
| Netherlands            | 6 625 000 | 6 935 000 | 6 744 000   | 5 914 000   | 5 701 000   |
| Poland                 |           |           |             |             |             |
| Rock salt              | 698 607   | 984 000   | 853 210     | 912 000     | 505 000     |
| Brine salt             | 2 964 690 | 2 989 000 | 2 928 781   | 2 929 000   | 2 711 000   |
| Other salt             | 499 506   | 446 000   | 497 354     | 361 000     | 342 000     |
| Portugal               |           |           |             |             |             |
| Rock salt              | 6 092     | 7 800     | 6 201       | 4 709       | 4 217       |
| Sea salt               | 105 972   | 114 531   | 94 624      | 107 506     | 92 887      |
| Romania                | 2 128 156 | 2 290 060 | 2 333 555   | 1 984 965   | 1 151 740   |
| Russia                 | 769 000   | * 770 000 | 6 710 000   | 7 091 000   | 5 529 600   |
| Serbia                 | 9 149     | * 9 000   | * 9 000     | * 9 000     | * 9 000     |
| Slovenia               | 2 417     | 2 335     | 2 018       | 1 437       | 805         |
| Spain                  |           |           |             |             |             |
| Rock salt              | 3 253 372 | 2 869 661 | 3 199 559   | 3 084 140   | 2 499 402   |
| Sea salt               | 1 199 669 | 1 168 121 | 1 194 812   | 1 134 195   | 967 864     |
| Other salt             | 99 815    | 97 844    | 117 872     | 112 179     | 119 563     |
| Switzerland            | 447 216   | 448 509   | 530 414     | 477 000     | 325 000     |
| Turkey                 | 5 328 256 | 6 673 242 | 6 298 705   | 6 961 015   | 7 698 018   |
| Ukraine                | 1 783 530 | 1 815 684 | 2 191 619   | 2 092 795   | * 2 000 000 |
| United Kingdom         | 3 898 987 | 2 361 707 | 3 430 266   | 2 377 765   | 2 312 100   |

## Production of salt

tonnes (metric)

| Country               | 2016       | 2017        | 2018        | 2019         | 2020         |
|-----------------------|------------|-------------|-------------|--------------|--------------|
| Algeria               |            |             |             |              |              |
| Brine salt & sea salt | 157 400    | * 160 000   | * 160 000   | * 160 000    | * 160 000    |
| Angola                | * 93 000   | * 101 000   | * 110 000   | * 109 000    | * 105 000    |
| Botswana              | 399 837    | 369 613     | 367 988     | 383 779      | 418 379      |
| Djibouti              | * 500      | * 830 000   | * 2 500 000 | * 2 500 000  | * 2 500 000  |
| Egypt (b)             | 1 402 000  | * 1 750 000 | * 1 800 000 | * 1 800 000  | * 1 800 000  |
| Eritrea               | * 310 000  | * 310 000   | * 310 000   | * 310 000    | * 310 000    |
| Ethiopia (c)          | 29 634     | 438 192     | 122 850     | * 125 000    | * 125 000    |
| Ghana                 | * 250 000  | * 250 000   | * 350 000   | * 300 000    | * 300 000    |
| Guinea                | * 15 000   | * 15 000    | * 15 000    | * 15 000     | * 15 000     |
| Kenya (d)             | 23 423     | 43 245      | 28 841      | 13 728       | 4 703        |
| Libya                 | * 30 000   | * 40 000    | * 50 000    | * 50 000     | * 50 000     |
| Madagascar            | * 80 000   | * 80 000    | * 80 000    | * 100 000    | * 100 000    |
| Mauritania            | * 700      | * 700       | * 700       | * 700        | * 700        |
| Mauritius (a)         | 500        | 500         | 500         | 500          | * 500        |
| Morocco               | 634 662    | 659 263     | 691 637     | 854 390      | * 850 000    |
| Mozambique (a)        | * 170 000  | * 170 000   | * 170 000   | * 170 000    | * 170 000    |
| Namibia               | 835 539    | 808 952     | 833 193     | 1 108 364    | 795 896      |
| Senegal               | 263 200    | 265 000     | 245 700     | 286 103      | 290 873      |
| South Africa          | 488 984    | 503 935     | 476 107     | 510 499      | 538 208      |
| Sudan                 | 223 397    | 235 000     | 267 000     | 256 000      | 237 000      |
| Tanzania              | 145 718    | 100 017     | 36 392      | 99 510       | 83 974       |
| Tunisia               | 1 346 026  | 1 403 537   | 2 116 972   | 1 966 528    | 1 630 000    |
| Bahamas (e)           | 308 007    | 349 710     | 854 223     | 653 355      | * 640 000    |
| Bonaire (a)           | * 400 000  | * 400 000   | * 400 000   | * 400 000    | * 400 000    |
| Canada                |            |             |             |              |              |
| Rock salt             | 9 272 371  | 10 378 614  | 9 675 013   | 10 986 492   | 11 416 072   |
| Other salt (f)        | 979 790    | 1 045 010   | 1 016 444   | 955 790      | 970 009      |
| Cuba                  | 248 000    | 246 300     | 192 700     | 210 400      | 226 000      |
| Dominican Republic    | * 12 000   | * 13 000    | * 25 000    | —            | —            |
| El Salvador (a)       | * 100 000  | * 100 000   | * 100 000   | * 100 000    | * 100 000    |
| Guatemala (a)         | * 60 000   | * 60 000    | * 60 000    | * 60 000     | * 60 000     |
| Honduras              | * 60 000   | * 60 000    | * 60 000    | * 60 000     | * 60 000     |
| Jamaica               | * 14 000   | * 14 000    | * 14 000    | * 14 000     | * 14 000     |
| Mexico                | 9 785 053  | 9 570 779   | 9 392 052   | 8 845 239    | 8 086 044    |
| Nicaragua (a)         | * 30 000   | * 30 000    | * 30 000    | * 30 000     | * 30 000     |
| Panama (a)            | 23 754     | 18 862      | 17 490      | 27 721       | 25 259       |
| USA                   |            |             |             |              |              |
| Rock salt (g)         | 17 900 000 | 16 500 000  | 17 101 000  | 17 518 000   | * 15 990 000 |
| Salt in brine (g)     | 16 900 000 | 15 600 000  | 16 168 000  | 16 562 000   | * 15 210 000 |
| Evaporated salt (g)   | 6 950 000  | 7 460 000   | 7 732 000   | 7 920 000    | * 7 410 000  |
| Argentina             | 1 812 285  | 1 461 065   | 1 406 020   | 1 412 348    | 1 256 963    |
| Bolivia               | 4 534      | 3 358       | 5 373       | * 5 100      | * 5 000      |
| Brazil                |            |             |             |              |              |
| Rock salt             | 1 410 314  | * 1 500 000 | * 1 500 000 | * 1 500 000  | * 1 500 000  |
| Sea salt              | 6 100 000  | * 6 000 000 | * 6 000 000 | * 6 000 000  | * 6 000 000  |
| Chile                 | 8 139 914  | 7 440 741   | 10 012 105  | 10 476 823   | 9 574 159    |
| Colombia              |            |             |             |              |              |
| Rock salt             | 354 791    | 336 373     | 339 503     | 347 183      | 266 499      |
| Sea salt              | 176 021    | 165 126     | 51 720      | —            | —            |
| Ecuador               | * 75 000   | * 75 000    | * 75 000    | * 75 000     | * 75 000     |
| Peru                  | 1 450 415  | 1 481 398   | 1 509 564   | 1 266 347    | 1 030 598    |
| Venezuela (a)         | * 350 000  | * 350 000   | * 300 000   | * 300 000    | * 300 000    |
| Afghanistan (h)       | 56 928     | 75 579      | 47 944      | 114 245      | 10 627       |
| Bangladesh (b)        | 1 477 157  | 1 495 512   | 1 513 022   | 1 564 037    | 1 566 617    |
| Burma                 | 212 041    | 158 499     | 189 146     | 15 813       | * 16 000     |
| Cambodia (a)(i)       | 143 145    | 33 058      | * 20 000    | * 20 000     | * 104 000    |
| China                 | 66 201 000 | 66 541 700  | 63 636 100  | 62 708 000   | * 63 000 000 |
| India                 |            |             |             |              |              |
| Rock salt (j)         | —          | 20          | 17          | 130          | 486          |
| Sea salt (j)          | 23 454 700 | 23 854 600  | 25 127 300  | * 25 100 000 | * 25 000 000 |
| Other salt (j)        | 5 736 900  | 5 094 800   | 4 906 300   | * 4 900 000  | * 4 900 000  |
| Indonesia             | 144 000    | 1 100 000   | 2 700 000   | * 2 700 000  | * 1 000 000  |
| Iran (h)              | 2 796 224  | 3 024 621   | 2 768 733   | 2 656 887    | * 2 600 000  |
| Iraq                  | * 182 000  | * 182 000   | 204 334     | * 205 000    | * 205 000    |

## Production of salt

tonnes (metric)

| Country                | 2016        | 2017        | 2018        | 2019        | 2020        |
|------------------------|-------------|-------------|-------------|-------------|-------------|
| Israel (a)             | 389 236     | 514 100     | 376 800     | 301 100     | 275 160     |
| Japan (j)              | 928 000     | 926 000     | 929 000     | 903 000     | 929 000     |
| Jordan                 | 41 309      | 48 985      | 48 901      | * 50 000    | * 50 000    |
| Kazakhstan             | 730 283     | 803 794     | 885 715     | 1 094 659   | 1 237 455   |
| Korea (Rep. of)        | 323 470     | 308 844     | 282 590     | 308 844     | 323 470     |
| Korea, Dem. P.R. of    | * 100 000   | * 100 000   | * 100 000   | * 100 000   | * 100 000   |
| Kuwait                 | 66 664      | 58 000      | * 58 000    | * 58 000    | * 58 000    |
| Laos                   | 118         | 6 697       | —           | 10 079      | 3 951       |
| Lebanon (a)            | * 15 000    | * 15 000    | * 15 000    | * 15 000    | * 15 000    |
| Mongolia               | 478         | 860         | 997         | 533         | 2 624       |
| Oman                   | 4 500       | 18 000      | 11 500      | 15 000      | 11 700      |
| Pakistan               |             |             |             |             |             |
| Rock salt (b)          | 3 552 948   | 3 534 075   | 3 653 746   | 3 796 634   | * 3 700 000 |
| Sea salt (b)(d)        | 254 089     | 209 076     | 234 598     | 256 830     | * 250 000   |
| Philippines (a)        | * 993 000   | * 993 000   | * 993 000   | * 993 000   | * 993 000   |
| Saudi Arabia           |             |             |             |             |             |
| Rock salt & brine salt | 2 400 000   | 2 520 000   | 2 646 000   | 2 778 000   | * 2 780 000 |
| Sri Lanka              | 150 357     | 116 912     | 68 834      | 57 291      | 60 076      |
| Syria                  | * 2 500     | * 2 500     | * 2 500     | * 2 500     | * 2 500     |
| Taiwan                 | 77 276      | 77 054      | 78 539      | 76 255      | 77 854      |
| Tajikistan             | 33 055      | 35 516      | 15 670      | 35 496      | 37 023      |
| Thailand               |             |             |             |             |             |
| Rock salt              | 1 333 675   | 1 497 223   | 1 487 364   | 1 580 390   | 1 439 877   |
| Turkmenistan           | * 230 000   | * 230 000   | * 230 000   | * 230 000   | * 230 000   |
| Uzbekistan             | * 60 000    | * 60 000    | 300 653     | 281 827     | 292 720     |
| Vietnam                | 982 000     | 648 500     | 996 513     | 945 000     | 1 205 500   |
| Yemen, Republic of     | * 75 000    | * 75 000    | * 100 000   | * 100 000   | * 75 000    |
| Australia (b)          | 11 514 481  | 11 280 859  | 13 582 811  | 12 489 275  | 11 960 778  |
| New Zealand            | 101 678     | 60 000      | 50 000      | 75 000      | 60 000      |
| World total            | 277 000 000 | 279 300 000 | 294 100 000 | 292 300 000 | 276 600 000 |

### Note(s)

- (1) This table does not include production of refined salt
- (2) Salt is known to be produced in many countries for which statistics are not available.

- (a) Sea salt
- (b) Years ended 30 June of that stated
- (c) Years ended 7 July of that stated
- (d) Lake salt
- (e) Exports
- (f) Including salt in brine
- (g) Sold or used by producers
- (h) Years ended 20 March following that stated
- (i) Seasons beginning in November and ending in May of the year stated.
- (j) Years ended 31 March following that stated

## Production of refined selenium

tonnes (metric)

| Country     | 2016  | 2017  | 2018  | 2019  | 2020    |
|-------------|-------|-------|-------|-------|---------|
| Armenia     | * 20  | * 20  | * 20  | * 20  | * 20    |
| Belgium     | * 200 | * 200 | * 200 | * 200 | * 200   |
| Finland     | 104   | 100   | 109   | 115   | 84      |
| Germany (a) | * 790 | * 790 | * 300 | * 300 | * 300   |
| Poland      | 82    | 74    | 66    | 76    | 74      |
| Russia      | 197   | 194   | 176   | 184   | 190     |
| Serbia      | 18    | 19    | 29    | 17    | * 19    |
| Sweden      | * 20  | * 20  | * 90  | * 19  | * 20    |
| Canada      | 176   | 49    | 85    | 57    | 102     |
| Mexico      | 121   | 112   | 107   | 127   | 106     |
| USA         | * 122 | * 116 | * 152 | * 144 | * 66    |
| Chile       | * —   | * 100 | * 110 | * 90  | * 100   |
| Peru        | 45    | 45    | 45    | 40    | 53      |
| China       | 750   | 930   | 1 150 | 1 358 | * 1 400 |
| Japan       | 753   | 729   | 768   | 740   | 750     |
| Kazakhstan  | * 130 | * 130 | * 130 | * 130 | * 130   |
| Philippines | * 70  | * 70  | * 70  | * 70  | * 70    |
| Uzbekistan  | * 20  | * 20  | —     | —     | —       |

### Note(s)

(1) In addition to the countries listed, Australia, Iran, the Republic of Korea and Zimbabwe are believed to produce refined selenium.

(a) Includes selenium produced from imported material

## Production of sillimanite minerals

tonnes (metric)

| Country         | 2016      | 2017      | 2018      | 2019      | 2020      |
|-----------------|-----------|-----------|-----------|-----------|-----------|
| France          |           |           |           |           |           |
| Andalusite (a)  | * 58 000  | * 68 000  | * 65 000  | * 68 000  | * 65 000  |
| Madagascar      | 1 800     | 4 200     | * 0       | * 0       | * —       |
| South Africa    |           |           |           |           |           |
| Andalusite      | * 180 000 | * 200 000 | * 200 000 | * 190 000 | * 180 000 |
| USA             |           |           |           |           |           |
| Kyanite (b)     | 79 700    | 91 300    | 89 200    | 91 300    | * 85 000  |
| India           |           |           |           |           |           |
| Kyanite (c)     | 3 253     | 7 818     | 4 889     | 3 497     | 4 925     |
| Sillimanite (c) | 68 131    | 81 638    | 69 033    | 13 236    | 11 110    |
| Nepal           |           |           |           |           |           |
| Kyanite (d)     | 1         | 2         | 0         | 1         | 0         |

### Note(s)

(1) A number of other countries produce sillimanite minerals but details of output are not reported.

(2) In addition to the countries listed above as producing sillimanite minerals, synthetic mullite is believed to be produced in Brazil, Germany and Hungary.

(3) Production capacity for synthetic mullite also exists in China, India, Japan, the USA and the United Kingdom but output is believed to be zero.

(a) May include other sillimanite minerals

(b) Including related minerals

(c) Years ended 31 March following that stated

(d) Years ending 15 July of that stated

## Mine production of silver

kilograms (metal content)

| Country                    | 2016      | 2017      | 2018      | 2019      | 2020      |
|----------------------------|-----------|-----------|-----------|-----------|-----------|
| Armenia                    | * 16 000  | * 18 500  | * 15 000  | * 20 000  | * 19 500  |
| Azerbaijan                 | 5 136     | 8 076     | 8 943     | 8 160     | 7 600     |
| Bulgaria                   | 52 526    | 53 053    | 41 315    | 35 145    | 39 100    |
| Cyprus (a)                 | —         | 99        | 180       | 97        | 486       |
| Finland                    | 16 348    | 13 654    | 12 849    | 40 461    | 54 833    |
| Georgia                    | * 20 000  | * 42 000  | 20 042    | 4 052     | 5 467     |
| Greece                     | 29 300    | 34 200    | 34 900    | 43 800    | 50 300    |
| Ireland, Republic of       | 1 080     | 1 340     | 1 160     | 1 578     | 918       |
| North Macedonia            | 14 000    | 12 775    | 12 694    | 11 707    | 11 488    |
| Poland                     | 1 482 000 | 1 490 000 | 1 471 000 | 1 455 000 | 1 423 000 |
| Portugal                   | 38 631    | 40 186    | 55 706    | 53 063    | 48 428    |
| Romania                    | * 18 000  | * 18 000  | * 18 000  | * 18 000  | * 18 000  |
| Russia (b)                 | 1 493 000 | 1 373 000 | 1 400 100 | 1 407 000 | 1 380 000 |
| Serbia (b)                 | 11 300    | 12 300    | 9 000     | * 14 500  | * 12 000  |
| Slovakia                   | 391       | 410       | 345       | 295       | 269       |
| Spain                      | 17 600    | 98 600    | 87 780    | 77 501    | 92 751    |
| Sweden                     | 498 686   | 467 500   | 443 624   | 419 926   | 400 939   |
| Turkey                     | 376 640   | 151 490   | 197 320   | 242 000   | 98 270    |
| United Kingdom             | (c) 14    | —         | —         | * 130     | * 100     |
| Algeria                    | * 20      | * 20      | * 100     | * 100     | —         |
| Burkina Faso               | * 5 800   | * 7 000   | * 8 000   | * 7 700   | 10 012    |
| Congo, Democratic Republic | 800       | 3 400     | * 3 400   | * 3 400   | * 3 400   |
| Eritrea                    | 13 219    | (c) 1 192 | 31 000    | 44 836    | 65 284    |
| Ethiopia (d)               | 745       | * 1 000   | * 1 000   | * 1 000   | * 1 000   |
| Ghana                      | * 3 100   | 4 000     | 4 000     | * 4 000   | * 1 000   |
| Ivory Coast                | 549       | 493       | 137       | —         | —         |
| Mali                       | 2 005     | * 2 100   | * 2 600   | * 2 700   | * 2 800   |
| Morocco                    | 237 418   | 239 416   | 190 500   | 200 000   | 167 000   |
| Namibia                    | 4 702     | 7 451     | 3 602     | 6 221     | 6 982     |
| Niger                      | 239       | 100       | 64        | 31        | 12        |
| Senegal                    | 500       | 700       | 940       | 900       | 1 000     |
| South Africa               | 55 600    | 62 536    | 46 467    | 55 903    | 38 154    |
| Sudan                      | * 1 000   | * 2 000   | * 2 000   | * 2 000   | * 1 000   |
| Tanzania                   | 17 984    | 10 911    | 12 041    | 12 607    | 13 187    |
| Zambia                     | —         | —         | 93        | 7 212     | * 9 000   |
| Zimbabwe                   | 1 463     | 1 480     | 1 542     | * 1 500   | * 1 500   |
| Canada                     | 385 134   | 389 568   | 404 000   | 410 000   | 295 051   |
| Dominican Republic         | 121 748   | 151 756   | 166 499   | 108 685   | 87 889    |
| Guatemala                  | 837 815   | 336 944   | —         | —         | —         |
| Honduras                   | 17 600    | 21 784    | 31 181    | 43 582    | 45 000    |
| Mexico                     | 5 408 521 | 5 815 034 | 7 243 245 | 7 485 602 | 5 605 000 |
| Nicaragua                  | 21 382    | 15 419    | 11 263    | 17 362    | 20 186    |
| Panama                     | —         | —         | —         | 35 217    | 49 627    |
| USA                        | 1 150 000 | 1 030 000 | 934 000   | 977 000   | 986 000   |
| Argentina                  | 1 055 700 | 997 961   | 1 023 768 | 1 039 800 | 712 300   |
| Bolivia                    | 1 356 620 | 1 222 371 | 1 191 024 | 1 153 110 | 929 909   |
| Brazil                     | 48 793    | 41 900    | 49 600    | * 50 000  | * 50 000  |
| Chile                      | 1 501 436 | 1 318 582 | 1 370 237 | 1 309 321 | 1 575 794 |
| Colombia                   | 11 866    | 12 076    | 16 684    | 12 706    | 19 022    |
| Ecuador                    | 934       | 68        | 192       | 2 892     | 1 792     |
| Peru                       | 4 375 337 | 4 417 987 | 4 160 162 | 3 860 306 | 2 723 876 |
| China                      | 3 496 003 | 3 601 800 | 3 421 355 | 3 443 128 | 3 377 810 |
| India (e)                  | 460 811   | 557 691   | 679 376   | 672 380   | 746 377   |
| Indonesia                  | 185 234   | 331 644   | 335 491   | 484 900   | 338 100   |
| Iran                       | * 50 000  | * 50 000  | * 50 000  | * 50 000  | * 50 000  |
| Japan                      | 5 076     | 3 408     | 3 596     | 3 467     | 4 192     |
| Kazakhstan                 | 1 186 511 | 1 060 662 | 969 347   | 1 022 068 | 1 035 181 |
| Korea (Rep. of)            | 6 579     | 8 863     | 7 090     | 5 245     | 5 739     |
| Korea, Dem. P.R. of        | * 50 000  | * 50 000  | * 50 000  | * 50 000  | * 50 000  |
| Kyrgyzstan                 | 15 500    | 14 200    | 13 600    | 14 500    | 11 700    |
| Laos                       | 51 302    | 42 840    | 37 464    | 34 443    | 29 232    |
| Malaysia                   | 1 075     | 1 404     | 1 542     | 686       | 423       |
| Mongolia                   | 79 480    | 72 440    | 64 800    | 69 432    | 66 000    |
| Philippines                | 35 186    | 31 748    | 29 782    | 31 267    | 24 024    |



## Mine production of silver

kilograms (metal content)

| Country          | 2016       | 2017       | 2018       | 2019       | 2020       |
|------------------|------------|------------|------------|------------|------------|
| Saudi Arabia     | 4 710      | 5 069      | 5 322      | 5 588      | * 5 600    |
| Tajikistan       | 3 200      | 6 600      | 9 500      | 10 800     | 3 300      |
| Thailand         | 26 430     | —          | —          | —          | —          |
| Uzbekistan       | * 230 000  | 232 300    | 223 900    | * 260 000  | 260 000    |
| Australia        | 1 418 219  | 1 120 175  | 1 254 480  | 1 325 089  | 1 337 344  |
| Fiji             | 354        | 350        | 358        | 692        | 479        |
| New Zealand      | 7 960      | 8 022      | 6 332      | 4 060      | 1 393      |
| Papua New Guinea | 90 498     | 69 330     | 104 004    | 157 927    | 130 000    |
| World total      | 28 133 000 | 27 219 000 | 28 007 000 | 28 354 000 | 24 563 000 |

### Note(s)

- (a) Production thought to be from stockpiles.
- (b) Smelter and/or refinery production
- (c) Sales
- (d) Years ended 7 July of that stated
- (e) Years ended 31 March following that stated

## Production of natural sodium carbonate

tonnes (metric)

| Country      | 2016       | 2017       | 2018       | 2019       | 2020        |
|--------------|------------|------------|------------|------------|-------------|
| Turkey       | 1 976 880  | 3 274 416  | 3 400 000  | 3 500 000  | * 3 400 000 |
| Botswana     | 280 457    | 226 667    | 297 237    | 269 119    | 238 476     |
| Ethiopia (a) | 4 177      | 6 785      | 18 105     | * 18 000   | * 18 000    |
| Kenya        | 303 618    | 303 580    | 294 856    | 282 049    | 254 579     |
| USA          | 11 800 000 | 12 000 000 | 11 900 000 | 11 700 000 | 9 990 000   |

### Note(s)

- (a) Years ended 7 July of that stated

## Production of strontium minerals

tonnes (metric)

| Country       | 2016    | 2017   | 2018     | 2019     | 2020      |
|---------------|---------|--------|----------|----------|-----------|
| Spain         | 85 599  | 99 663 | 90 506   | 162 327  | 121 920   |
| Mexico        | 33 230  | 40 699 | 35 489   | 36 180   | 38 304    |
| Argentina (a) | 5 000   | 5 000  | * 700    | * 700    | * 670     |
| China         | 65 300  | 53 700 | * 50 000 | * 50 000 | * 50 000  |
| Iran (b)      | 196 689 | 94 610 | 94 200   | 129 040  | * 100 000 |

### Note(s)

- (1) In addition to the countries listed, Germany is believed to produce strontium minerals.

- (a) May contain unbeneficiated material
- (b) Years ended 20 March following that stated

## Production of sulphur and pyrites

tonnes (sulphur content)

| Country              | 2016        | 2017        | 2018        | 2019        | 2020        |
|----------------------|-------------|-------------|-------------|-------------|-------------|
| Austria              |             |             |             |             |             |
| Recovered (a)        | * 44 000    | * 44 000    | * 44 000    | * 44 000    | * 44 000    |
| Belarus              |             |             |             |             |             |
| Recovered (a)        | 59 920      | 64 184      | 72 718      | 65 043      | 64 336      |
| Belgium              |             |             |             |             |             |
| Recovered (b)(a)     | * 400 000   | * 400 000   | * 400 000   | * 400 000   | * 400 000   |
| Bosnia & Herzegovina |             |             |             |             |             |
| Recovered            | 4 563       | 4 887       | 3 702       | * 3 700     | * 3 700     |
| Bulgaria             |             |             |             |             |             |
| Recovered (b)        | 387 070     | 490 272     | 463 393     | 414 503     | * 420 000   |
| Recovered (a)        | * 60 000    | * 60 000    | * 60 000    | * 60 000    | * 60 000    |
| Croatia              |             |             |             |             |             |
| Recovered (a)        | 21 690      | 24 168      | 23 406      | 12 640      | 8 618       |
| Czech Republic       |             |             |             |             |             |
| Recovered (a)        | * 32 000    | * 29 000    | * 30 000    | * 22 000    | * 25 000    |
| Denmark              |             |             |             |             |             |
| Recovered (a)        | 6 144       | 4 004       | 4 194       | 3 554       | 4 140       |
| Finland              |             |             |             |             |             |
| Pyrites              | 206 000     | 291 000     | 271 000     | 233 000     | 194 000     |
| Recovered (b)        | 349 471     | 345 762     | 343 377     | 327 300     | 358 700     |
| Recovered (a)        | * 130 000   | * 130 000   | * 130 000   | * 130 000   | * 120 000   |
| France               |             |             |             |             |             |
| Recovered (a)        | * 370 000   | * 370 000   | * 370 000   | * 370 000   | * 370 000   |
| Recovered (c)        | * 78 000    | * 78 000    | 54 592      | * 55 000    | * 55 000    |
| Germany              |             |             |             |             |             |
| Recovered (a)        | 577 684     | 537 882     | 419 597     | 460 012     | 353 293     |
| Recovered (c)        | 351 865     | 328 247     | 254 400     | 280 660     | 213 398     |
| Greece               |             |             |             |             |             |
| Recovered (a)        | 190 000     | 326 100     | * 330 000   | * 330 000   | * 330 000   |
| Hungary              |             |             |             |             |             |
| Recovered (a)        | * 54 000    | * 54 000    | * 54 000    | * 54 000    | * 54 000    |
| Italy                |             |             |             |             |             |
| Recovered (d)        | 550 000     | 511 000     | 550 000     | 550 000     | * 550 000   |
| Lithuania            |             |             |             |             |             |
| Recovered (a)        | 94 522      | 93 969      | 93 958      | 86 041      | 71 247      |
| Netherlands          |             |             |             |             |             |
| Recovered (b)        | * 112 000   | * 86 000    | * 96 000    | * 86 000    | * 90 000    |
| Recovered (a)        | * 530 000   | * 520 000   | * 520 000   | 510 000     | * 510 000   |
| Norway               |             |             |             |             |             |
| Recovered (b)        | 74 277      | 63 974      | 69 998      | 72 900      | 73 187      |
| Recovered (a)        | * 22 000    | * 22 000    | * 22 000    | * 22 000    | * 22 000    |
| Poland               |             |             |             |             |             |
| Frasch               | 620 500     | 663 000     | 617 370     | 568 240     | 422 380     |
| Recovered (b)        | * 280 000   | * 280 000   | * 280 000   | * 280 000   | * 280 000   |
| Recovered (a)        | 24 500      | 23 000      | 23 770      | 25 200      | 24 740      |
| Portugal             |             |             |             |             |             |
| Recovered            | * 21 000    | * 21 000    | * 21 000    | * 21 000    | * 21 000    |
| Romania              |             |             |             |             |             |
| Recovered            | * 44 000    | * 42 000    | * 42 000    | * 42 000    | * 42 000    |
| Russia               |             |             |             |             |             |
| Pyrites              | * 71 000    | * 71 000    | * 71 000    | * 71 000    | * 71 000    |
| Recovered (a)        | * 6 600 000 | * 6 600 000 | * 6 700 000 | * 6 700 000 | * 6 100 000 |
| Recovered (c)        | * 954 000   | * 954 000   | * 954 000   | * 954 000   | * 954 000   |
| Sulphur ore          | 94 418      | 96 316      | 83 707      | 57 427      | * 28 000    |
| Serbia               |             |             |             |             |             |
| Recovered (b)        | * 29 400    | * 29 400    | * 29 400    | * 29 400    | * 29 400    |
| Slovakia             |             |             |             |             |             |
| Recovered (b)        | * 4 900     | * 4 900     | * 4 900     | * 4 900     | * 4 900     |
| Recovered (a)        | * 85 300    | * 85 300    | * 85 300    | * 85 300    | * 85 300    |
| Sweden               |             |             |             |             |             |
| Recovered (b)        | 187 264     | 190 014     | 200 122     | 178 401     | 165 500     |
| Recovered (a)        | 86 312      | 91 018      | 86 967      | 50 021      | 39 085      |
| Turkey               |             |             |             |             |             |
| Pyrites              | 61          | 31 482      | 9 142       | 173 731     | 46 408      |
| Recovered (a)(c)     | * 72 900    | * 72 900    | * 72 900    | * 72 900    | * 72 900    |
| Sulphur ore          | —           | 5 285       | 900         | —           | —           |
| United Kingdom       |             |             |             |             |             |
| Recovered (a)        | 133 000     | 133 000     | 129 000     | 130 000     | 106 000     |

## Production of sulphur and pyrites

tonnes (sulphur content)

| Country           | 2016         | 2017         | 2018         | 2019         | 2020         |
|-------------------|--------------|--------------|--------------|--------------|--------------|
| Algeria           |              |              |              |              |              |
| Recovered (a)     | * 10 000     | * 10 000     | * 10 000     | * 10 000     | * 10 000     |
| Egypt             |              |              |              |              |              |
| Recovered (a)     | * 60 000     | * 80 000     | * 80 000     | * 80 000     | * 80 000     |
| Libya             |              |              |              |              |              |
| Recovered (a)     | —            | 133 300      | —            | *—           | *—           |
| Morocco           |              |              |              |              |              |
| Recovered         | * 60 000     | * 60 000     | * 60 000     | * 60 000     | * 60 000     |
| Namibia           |              |              |              |              |              |
| Recovered         | 62 633       | 72 283       | 78 612       | 72 923       | 81 500       |
| South Africa      |              |              |              |              |              |
| Recovered (b)(a)  | 280 830      | 280 830      | 239 405      | 919 624      | 575 491      |
| Zambia            |              |              |              |              |              |
| Recovered (b)     | 363 000      | 679 500      | 947 800      | 960 200      | * 1 000 000  |
| Canada            |              |              |              |              |              |
| Recovered (b)     | 635 300      | 524 000      | 505 000      | 520 000      | 554 746      |
| Recovered (a)     | 4 746 100    | 4 802 900    | 4 828 000    | 6 418 000    | 4 349 262    |
| Cuba              |              |              |              |              |              |
| Recovered         | 1 780        | 3 047        | 3 154        | 3 234        | 3 176        |
| Recovered (a)     | * 20 000     | * 20 000     | * 20 000     | * 20 000     | * 20 000     |
| Mexico            |              |              |              |              |              |
| Recovered (b)     | * 556 000    | * 556 000    | * 556 000    | * 556 000    | * 556 000    |
| Recovered (a)     | 673 285      | 551 218      | 442 657      | 364 967      | 264 078      |
| Trinidad & Tobago |              |              |              |              |              |
| Recovered (a)     | * 10 000     | * 10 000     | * 10 000     | * 10 000     | * 10 000     |
| USA               |              |              |              |              |              |
| Recovered (b)     | 673 000      | 575 000      | 672 000      | 596 000      | * 520 000    |
| Recovered (a)     | 9 070 000    | 9 070 000    | 9 000 000    | 8 110 000    | * 7 600 000  |
| Argentina         |              |              |              |              |              |
| Recovered (b)     | * 23 000     | * 20 000     | * 20 000     | * 20 000     | * 20 000     |
| Brazil            |              |              |              |              |              |
| Pyrites           | * 20 000     | * 20 000     | * 20 000     | * 20 000     | * 20 000     |
| Recovered (b)     | * 292 000    | * 292 000    | * 292 000    | * 292 000    | * 292 000    |
| Recovered (a)     | * 239 000    | * 239 000    | * 239 000    | * 239 000    | * 239 000    |
| Chile             |              |              |              |              |              |
| Recovered (b)     | 1 595 595    | 1 524 437    | 1 476 456    | 1 263 119    | 1 476 154    |
| Colombia          |              |              |              |              |              |
| Recovered (a)     | 7 653        | 6 980        | * 7 000      | * 7 000      | * 7 000      |
| Sulphur ore       | 76 331       | 64 856       | —            | —            | *—           |
| Ecuador           |              |              |              |              |              |
| Recovered (a)(e)  | * 5 000      | * 5 000      | * 5 000      | * 5 000      | * 5 000      |
| Peru              |              |              |              |              |              |
| Recovered (d)     | * 556 000    | * 556 000    | * 556 000    | * 556 000    | * 556 000    |
| Venezuela         |              |              |              |              |              |
| Recovered (a)     | * 400 000    | * 360 000    | * 250 000    | * 155 000    | * 100 000    |
| Bahrain           |              |              |              |              |              |
| Recovered (a)     | * 120 000    | * 110 000    | * 100 000    | * 120 000    | * 120 000    |
| China             |              |              |              |              |              |
| Pyrites           | * 5 200 000  | * 5 850 000  | * 5 900 000  | * 5 900 000  | * 5 610 000  |
| Recovered         | * 11 800 000 | * 11 590 000 | * 11 600 000 | * 11 600 000 | * 11 390 000 |
| India             |              |              |              |              |              |
| Recovered (b)(f)  | * 1 200 000  | * 1 200 000  | * 1 200 000  | * 1 200 000  | * 1 200 000  |
| Recovered (a)(f)  | 560 826      | 825 173      | 890 400      | 900 942      | 737 337      |
| Indonesia         |              |              |              |              |              |
| Recovered (b)     | * 160 000    | * 160 000    | * 160 000    | * 160 000    | * 160 000    |
| Recovered (a)     | * 120 000    | * 120 000    | * 120 000    | * 120 000    | * 120 000    |
| Iran              |              |              |              |              |              |
| Recovered (d)     | 2 200 000    | 2 200 000    | 2 200 000    | * 2 200 000  | * 2 200 000  |
| Iraq              |              |              |              |              |              |
| Recovered (a)     | * 6 310 000  | * 6 450 000  | * 6 583 000  | * 6 792 000  | * 5 858 000  |
| Israel            |              |              |              |              |              |
| Recovered (a)     | 71 104       | * 71 000     | 75 934       | 70 973       | 45 184       |
| Japan             |              |              |              |              |              |
| Recovered (b)     | 1 700 085    | 1 583 867    | 1 710 961    | 1 629 656    | 1 728 654    |
| Recovered (a)     | 1 817 790    | 1 788 620    | 1 697 355    | 1 629 365    | 1 411 860    |

## Production of sulphur and pyrites

tonnes (sulphur content)

| Country              | 2016        | 2017        | 2018        | 2019        | 2020        |
|----------------------|-------------|-------------|-------------|-------------|-------------|
| Jordan               |             |             |             |             |             |
| Recovered (a)        | * 490 000   | * 490 000   | * 490 000   | * 490 000   | * 490 000   |
| Kazakhstan           |             |             |             |             |             |
| Recovered (b)        | * 604 000   | * 604 000   | * 604 000   | * 604 000   | * 604 000   |
| Recovered (a)        | 2 546 500   | 2 947 300   | * 2 620 000 | * 2 625 000 | * 2 484 000 |
| Korea (Rep. of)      |             |             |             |             |             |
| Recovered (b)        | * 1 078 000 | * 1 078 000 | * 1 078 000 | * 1 078 000 | * 1 078 000 |
| Recovered (a)        | 2 000 000   | 2 000 000   | 2 000 000   | 1 999 000   | 2 000 000   |
| Kuwait               |             |             |             |             |             |
| Recovered (a)        | * 920 000   | * 870 000   | * 880 000   | * 860 000   | * 780 000   |
| Oman                 |             |             |             |             |             |
| Recovered (a)        | * 50 000    | * 48 000    | * 49 000    | * 48 000    | * 48 000    |
| Pakistan             |             |             |             |             |             |
| Sulphur ore (g)      | 14 869      | 23 740      | 22 040      | 20 715      | * 20 000    |
| Philippines          |             |             |             |             |             |
| Recovered (b)        | * 169 000   | * 169 000   | * 169 000   | * 169 000   | * 169 000   |
| Recovered (a)        | * 45 000    | * 45 000    | * 2 500     | * 2 000     | * 2 000     |
| Qatar                |             |             |             |             |             |
| Recovered (a)        | * 1 713 600 | * 1 661 100 | * 1 669 500 | * 1 648 500 | * 1 593 900 |
| Saudi Arabia         |             |             |             |             |             |
| Recovered (a)        | * 3 900 000 | * 3 700 000 | * 3 900 000 | * 3 700 000 | * 3 500 000 |
| Singapore            |             |             |             |             |             |
| Recovered (a)        | * 300 000   | * 300 000   | * 300 000   | * 300 000   | * 300 000   |
| Syria                |             |             |             |             |             |
| Recovered (a)        | * 1 500     | * 1 500     | * 1 500     | * 1 500     | * 1 500     |
| Taiwan               |             |             |             |             |             |
| Recovered            | 163 768     | 173 963     | 169 698     | 195 358     | 167 336     |
| Thailand             |             |             |             |             |             |
| Recovered (b)        | * 45 800    | * 19 000    | *—          | *—          | *—          |
| Recovered (a)        | * 233 000   | * 215 000   | * 205 000   | * 205 000   | 168 526     |
| Turkmenistan         |             |             |             |             |             |
| Recovered (a)        | * 383 000   | * 380 000   | * 365 000   | * 363 000   | * 299 000   |
| United Arab Emirates |             |             |             |             |             |
| Recovered (a)        | * 2 554 000 | * 2 467 000 | * 2 474 000 | * 2 523 000 | * 2 318 000 |
| Uzbekistan           |             |             |             |             |             |
| Recovered (b)        | * 131 000   | * 131 000   | * 131 000   | * 131 000   | * 131 000   |
| Recovered (a)        | * 75 000    | * 81 000    | * 84 000    | * 81 000    | * 61 000    |
| Australia            |             |             |             |             |             |
| Recovered (b)        | * 810 000   | * 810 000   | * 810 000   | * 810 000   | * 810 000   |
| Recovered (a)        | * 90 000    | * 90 000    | * 90 000    | * 90 000    | * 90 000    |
| New Zealand          |             |             |             |             |             |
| Recovered (a)        | * 35 000    | * 35 000    | * 35 000    | * 35 000    | * 35 000    |
| World total          |             |             |             |             |             |
| Pyrites              | 5 500 000   | 6 300 000   | 6 300 000   | 6 400 000   | 5 900 000   |
| Frasch               | 600 000     | 700 000     | 600 000     | 600 000     | 400 000     |
| Recovered            | 77 800 000  | 78 000 000  | 77 800 000  | 78 500 000  | 72 600 000  |
| Sulphur ore          | 200 000     | 200 000     | 100 000     | 100 000     | 50 000      |

### Note(s)

(1) In addition to the countries listed Dem. P.R. of Korea may also produce pyrites and may recover sulphur from metal processing; Ukraine may also produce sulphur.

- (a) From petroleum refining and/or natural gas
- (b) From metal sulphide processing
- (c) Other
- (d) Sulphur; all forms
- (e) Including frasch
- (f) Years ended 31 March following that stated
- (g) Years ended 30 June of that stated

## Production of talc

tonnes (metric)

| Country          | 2016      | 2017      | 2018        | 2019        | 2020        |
|------------------|-----------|-----------|-------------|-------------|-------------|
| Austria          | 123 040   | 123 558   | 127 866     | 124 184     | 123 000     |
| Finland          | 345 739   | 354 819   | 374 398     | 329 891     | 278 331     |
| France           | * 370 000 | * 370 000 | * 350 000   | * 350 000   | * 320 000   |
| Italy            | * 165 000 | * 165 000 | * 170 000   | * 170 000   | * 150 000   |
| North Macedonia  | —         | 400       | 319         | —           | —           |
| Portugal         | 11 699    | 13 600    | 10 144      | 12 901      | 9 751       |
| Russia           | * 150 000 | * 150 000 | * 150 000   | * 150 000   | * 150 000   |
| Slovakia         | 700       | 13 988    | 43 000      | 70 000      | 91 670      |
| Spain            | —         | 11 500    | 15 500      | 13 100      | 2 920       |
| Turkey           |           |           |             |             |             |
| Talc             | 8 559     | 3 882     | 18 105      | 3 742       | 14 178      |
| Pyrophyllite     | 194 665   | 470 600   | 266 111     | 88 335      | 129 290     |
| United Kingdom   | 2 997     | 3 218     | 1 640       | 3 131       | 1 386       |
| Egypt (a)        | 21 672    | * 15 000  | * 15 000    | * 15 000    | * 15 000    |
| Nigeria          | 667       | * 700     | 1 427       | 3 414       | * 3 500     |
| South Africa     |           |           |             |             |             |
| Talc             | 4 462     | 3 728     | 3 897       | 979         | —           |
| Pyrophyllite     | 19 114    | 55 048    | 98 245      | 134 451     | 92 318      |
| Sudan            | 4 250     | * 4 000   | * 4 000     | 1 500       | * 1 500     |
| Canada (b)       | 217 000   | 217 000   | 289 000     | 255 000     | 153 293     |
| Guatemala        | 2 733     | 1 982     | 2 187       | 10          | 3 151       |
| Mexico           | 11 392    | 7 129     | 8 448       | 7 202       | * 7 000     |
| USA              | 578 000   | 610 000   | * 650 000   | 578 000     | * 510 000   |
| Argentina        | 11 262    | 8 335     | 11 728      | * 11 700    | * 12 000    |
| Brazil (c)       | 657 000   | 850 000   | 660 000     | 650 000     | * 650 000   |
| Colombia (c)     | 673       | 2 374     | 2 062       | 1 680       | 647         |
| Peru             |           |           |             |             |             |
| Talc             | 11 507    | 19 363    | 20 634      | 18 935      | 17 418      |
| Pyrophyllite     | 17 872    | 22 760    | 26 675      | 25 039      | 20 519      |
| Uruguay          | 290       | 100       | 422         | 50          | 522         |
| Bhutan           | 2 261     | 1 293     | 2 042       | 1 375       | 972         |
| China            | 1 642 000 | 1 276 000 | * 1 400 000 | * 1 400 000 | * 1 300 000 |
| India            |           |           |             |             |             |
| Pyrophyllite (d) | 15 125    | 38 760    | * 39 000    | * 39 000    | * 39 000    |
| Steatite (d)     | 1 277 768 | 1 613 607 | * 1 600 000 | * 1 600 000 | * 1 600 000 |
| Iran (e)         | 118 960   | 82 095    | 48 750      | 45 100      | * 45 000    |
| Japan            |           |           |             |             |             |
| Talc             | * 25 000  | * 25 000  | * 10 000    | * 10 000    | * 10 000    |
| Pyrophyllite     | * 350 000 | * 350 000 | * 160 000   | * 160 000   | * 160 000   |
| Korea (Rep. of)  |           |           |             |             |             |
| Talc             | 2 247     | 2 834     | 1 887       | 2 626       | 1 600       |
| Pyrophyllite     | 590 000   | 431 458   | 345 550     | 338 834     | 314 346     |
| Nepal (f)        | 1 593     | 4 204     | 8 557       | 7 813       | 2 719       |
| Pakistan (a)     | 125 985   | 152 279   | 141 504     | 167 148     | 160 000     |
| Saudi Arabia     |           |           |             |             |             |
| Pyrophyllite     | 42 000    | 44 000    | 46 000      | 48 000      | * 48 000    |
| Taiwan           | 250       | —         | 17          | 6           | —           |
| Thailand         |           |           |             |             |             |
| Talc             | 6 886     | 7 436     | 7 756       | 8 064       | 6 624       |
| Pyrophyllite     | 63 500    | 54 000    | 50 920      | 6 500       | 31 522      |
| Australia        | * 111 000 | * 119 000 | * 153 000   | * 167 000   | * 131 000   |
| World total      | 7 300 000 | 7 700 000 | 7 300 000   | 7 000 000   | 6 600 000   |

### Note(s)

(1) In addition to the countries listed, pyrophyllite may be produced in Vietnam.

- (a) Years ended 30 June of that stated
- (b) Including pyrophyllite
- (c) Including talc, agalmatolite and pyrophyllite
- (d) Years ended 31 March following that stated
- (e) Years ended 20 March following that stated
- (f) Years ended 15 July of that stated

## Production of tantalum and niobium minerals

tonnes (metric)

| Country                    | 2016     | 2017     | 2018     | 2019     | 2020     |
|----------------------------|----------|----------|----------|----------|----------|
| Russia                     |          |          |          |          |          |
| Nb content                 | 628      | 648      | 669      | 659      | 617      |
| Ta content                 | 49       | 45       | 44       | 32       | 60       |
| Spain                      |          |          |          |          |          |
| Ta content                 | —        | —        | —        | 15       | 13       |
| Burundi                    |          |          |          |          |          |
| Columbite-tantalite        | 32       | 74       | 22       | 22       | * 22     |
| Congo, Democratic Republic |          |          |          |          |          |
| Columbite-tantalite        | 2 414    | 1 996    | 2 267    | 1 164    | 1 195    |
| Ethiopia                   |          |          |          |          |          |
| Tantalite (a)              | 63       | 65       | * 70     | * 40     | * 40     |
| Columbite (a)              | 16       | 22       | 26       | 7        | * 5      |
| Mozambique                 |          |          |          |          |          |
| Tantalite                  | 92       | 127      | 146      | 132      | 209      |
| Nigeria                    |          |          |          |          |          |
| Tantalite                  | 28       | 19       | 0        | 1        | * 1      |
| Columbite                  | 264      | 1 222    | 1 814    | 1 721    | * 1 700  |
| Rwanda                     |          |          |          |          |          |
| Columbite-tantalite (b)(c) | 1 485    | 1 327    | 1 861    | 1 519    | 1 201    |
| Uganda                     |          |          |          |          |          |
| Columbite-tantalite        | 13       | 11       | 7        | 7        | 173      |
| Zimbabwe                   |          |          |          |          |          |
| Tantalite                  | ...      | ...      | 14       | 7        | 4        |
| Canada                     |          |          |          |          |          |
| Pyrochlore                 | * 11 600 | * 11 600 | * 11 600 | * 11 600 | * 11 600 |
| Nb content                 | 6 099    | 6 981    | * 7 000  | * 7 000  | * 7 000  |
| Bolivia                    |          |          |          |          |          |
| Tantalite                  | —        | 9        | 59       | * 40     | * 40     |
| Brazil                     |          |          |          |          |          |
| Pyrochlore                 | 80 700   | 83 200   | 99 600   | 55 700   | * 56 000 |
| Columbite-tantalite        | 10 518   | 12 455   | * 12 500 | * 12 500 | * 12 500 |
| China                      |          |          |          |          |          |
| Columbite-tantalite        | * 260    | * 300    | * 360    | * 304    | * 280    |
| Malaysia                   |          |          |          |          |          |
| Struverite                 | 77       | 61       | 274      | 12       | 9        |
| Australia                  |          |          |          |          |          |
| Tantalite                  | 38       | 74       | 117      | 247      | 153      |
| World total                |          |          |          |          |          |
| Nb content                 | 57 700   | 66 100   | 65 400   | 64 900   | 64 800   |
| Ta content                 | 1 200    | 1 300    | 1 600    | 1 200    | 1 200    |

### Note(s)

(1) Niobium and tantalum minerals are also believed to be produced in Namibia and South Africa.

(2) The figures in this table refer to gross tonnage of tantalum and niobium concentrates, except where noted.

(3) Tantalum is also recovered from tin slags and this is believed to have accounted for approximately 20% of raw material supplied.

(a) Years ended 7 July of that stated

(b) Years ended 30th June of that stated

(c) Exports

## Production of refined tellurium

tonnes (metric)

| Country  | 2016 | 2017 | 2018 | 2019 | 2020 |
|----------|------|------|------|------|------|
| Bulgaria | 4    | 5    | 4    | 3    | * 3  |
| Russia   | 40   | 44   | 46   | 50   | 55   |
| Sweden   | 39   | 35   | 45   | 41   | 42   |
| Canada   | 18   | 17   | * 17 | * 15 | * 23 |
| China    | 279  | 291  | 357  | 461  | 460  |
| Japan    | 28   | 38   | 58   | 50   | 50   |

### Note(s)

(1) In addition to the countries listed, Germany and Belgium are believed to produce refined tellurium.

## Mine production of tin

tonnes (metal content)

| Country                    | 2016     | 2017     | 2018     | 2019     | 2020     |
|----------------------------|----------|----------|----------|----------|----------|
| Portugal                   | 54       | 81       | 111      | 108      | 104      |
| Russia                     | 627      | 1 011    | 1 530    | 2 471    | 2 559    |
| Spain                      | 7        | 23       | 81       | 101      | 96       |
| United Kingdom             | 160      | 255      | * 230    | —        | —        |
| Burundi                    | 51       | 123      | 126      | 143      | 106      |
| Congo, Democratic Republic | 6 503    | 10 391   | 8 950    | 12 431   | 13 526   |
| Namibia                    | —        | —        | —        | 4        | 284      |
| Niger                      | * 8      | * 8      | —        | —        | —        |
| Nigeria                    | 3 443    | 8 626    | 7 852    | 7 020    | 5 848    |
| Rwanda (a)(b)              | 2 200    | 2 592    | 3 190    | 2 688    | 1 728    |
| Tanzania                   | 104      | 68       | 6        | 18       | 35       |
| Uganda                     | 63       | 66       | 53       | 15       | —        |
| Bolivia                    | 17 804   | 18 385   | 17 251   | 17 147   | 14 709   |
| Brazil                     | 26 000   | 18 000   | 17 100   | 17 000   | 16 893   |
| Colombia                   | 0        | —        | —        | 22       | 10       |
| Peru (c)                   | 18 789   | 17 790   | 18 601   | 19 853   | 20 647   |
| Burma                      | * 57 000 | * 68 000 | * 55 000 | * 50 000 | * 36 000 |
| China                      | 97 165   | 95 549   | 94 838   | 85 840   | 94 463   |
| India (d)                  | 9        | 13       | 6        | 5        | 3        |
| Indonesia                  | 69 500   | 78 070   | 82 809   | 77 468   | 52 617   |
| Korea (Rep. of)            | 63       | 8        | 10       | 17       | 1        |
| Laos                       | 1 005    | 975      | 432      | 526      | 601      |
| Malaysia                   | 4 158    | 3 894    | 3 868    | 3 611    | 2 961    |
| Mongolia (e)               | * 25     | * 16     | * 26     | * 20     | 40       |
| Thailand                   | 59       | 341      | 47       | 46       | 194      |
| Vietnam                    | 4 468    | 5 200    | 5 745    | 6 369    | 6 798    |
| Australia                  | 6 635    | 7 402    | 6 871    | 7 738    | 8 118    |
| World total                | 316 000  | 337 000  | 325 000  | 311 000  | 278 000  |

### Note(s)

(a) Years ended 30 June of that stated

(b) Exports

(c) Recoverable

(d) Years ended 31 March following that stated

(e) Estimate based on reported exports

## Smelter production of tin

tonnes (metric)

| Country     | 2016     | 2017    | 2018     | 2019     | 2020     |
|-------------|----------|---------|----------|----------|----------|
| Belgium     | 8 474    | 9 652   | 9 329    | 9 296    | 8 980    |
| Poland      | 2 903    | 3 380   | 3 817    | 4 099    | 3 915    |
| Russia      | —        | 800     | * 1 100  | * 1 500  | * 1 500  |
| Rwanda      | —        | —       | —        | * 800    | * 900    |
| Bolivia (a) | 16 810   | 16 648  | 15 611   | 15 111   | 10 414   |
| Brazil      | 17 235   | 16 500  | * 16 500 | * 16 000 | * 16 000 |
| Peru        | 19 390   | 17 906  | 18 255   | 19 555   | 19 585   |
| China       | 182 498  | 178 400 | 177 407  | 182 772  | 202 910  |
| India (b)   | —        | 14      | 7        | —        | —        |
| Indonesia   | * 66 900 | 78 070  | 83 015   | 76 389   | 58 790   |
| Japan       | 1 620    | 1 624   | 1 647    | 1 547    | 1 529    |
| Malaysia    | 26 802   | 27 172  | 27 085   | 25 752   | 22 325   |
| Taiwan      | * 2 800  | * 2 800 | * 2 800  | * 3 800  | * 3 700  |
| Thailand    | 11 088   | 10 601  | 10 880   | 9 597    | 11 307   |
| Vietnam     | * 5 500  | * 5 500 | * 5 500  | * 5 500  | * 5 500  |
| Australia   | 41       | 21      | 82       | 99       | 112      |
| World total | 362 000  | 369 000 | 373 000  | 372 000  | 367 000  |

### Note(s)

(1) Figures relate to both primary and secondary metal.

(2) In addition to the countries listed, many countries produce small amounts of secondary metal.

(a) Refined, including alloys

(b) Years ended 31 March following that stated

## Production of titanium minerals

tonnes (metric)

| Country       | 2016        | 2017      | 2018      | 2019      | 2020        |
|---------------|-------------|-----------|-----------|-----------|-------------|
| Norway        |             |           |           |           |             |
| Ilmenite      | * 630 000   | * 630 000 | * 630 000 | * 630 000 | * 630 000   |
| Russia        |             |           |           |           |             |
| Ilmenite      | 60 000      | —         | —         | —         | —           |
| Ukraine       |             |           |           |           |             |
| Ilmenite      | * 500 000   | * 500 000 | 745 417   | 818 543   | 773 093     |
| Rutile        | * 90 000    | * 90 000  | 106 858   | * 115 500 | * 110 500   |
| Kenya         |             |           |           |           |             |
| Ilmenite      | 359 885     | 491 000   | 463 000   | 352 000   | 334 900     |
| Rutile        | 69 975      | 87 167    | 98 132    | 85 796    | 72 836      |
| Madagascar    |             |           |           |           |             |
| Ilmenite      | 267 962     | 430 479   | 381 924   | 461 800   | 424 000     |
| Rutile        | * 5 400     | * 8 100   | * 5 100   | * 6 000   | * 6 000     |
| Mozambique    |             |           |           |           |             |
| Ilmenite      | 903 300     | 998 200   | 958 500   | 892 900   | 756 000     |
| Rutile        | 7 800       | 9 133     | 8 154     | 8 278     | 5 957       |
| Senegal       |             |           |           |           |             |
| Ilmenite      | 416 249     | 492 441   | 506 938   | 491 602   | 505 000     |
| Leucosene (a) | 9 664       | 9 975     | 9 605     | 10 130    | 9 500       |
| Sierra Leone  |             |           |           |           |             |
| Ilmenite      | 28 102      | 57 040    | 49 510    | 63 350    | 45 773      |
| Rutile        | 148 541     | 165 470   | 108 320   | 136 790   | 116 569     |
| South Africa  |             |           |           |           |             |
| Ilmenite (b)  | * 1 020 000 | * 550 000 | 765 000   | 1 100 000 | * 1 000 000 |
| Rutile        | * 67 000    | * 95 000  | * 103 000 | * 110 000 | * 100 000   |



## Production of titanium minerals

tonnes (metric)

| Country                              | 2016        | 2017        | 2018        | 2019        | 2020        |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|
| Canada                               |             |             |             |             |             |
| Ilmenite (b)(c)                      | * 1 800 000 | * 2 300 000 | * 2 000 000 | * 2 100 000 | * 1 900 000 |
| USA                                  | 100 000     | 100 000     | 100 000     | 100 000     | * 100 000   |
| Brazil                               |             |             |             |             |             |
| Ilmenite (d)                         | 66 500      | 50 000      | 66 000      | 70 000      | * 70 000    |
| China                                |             |             |             |             |             |
| Ilmenite                             | 3 800 000   | 3 830 000   | 4 200 000   | * 4 200 000 | * 4 200 000 |
| India                                |             |             |             |             |             |
| Ilmenite (e)                         | 594 978     | 284 667     | 265 931     | * 265 000   | * 265 000   |
| Rutile (e)                           | 14 898      | 11 829      | 11 045      | * 11 000    | * 11 000    |
| Kazakhstan                           | * 17 000    | * 17 000    | * 17 000    | * 17 000    | * 17 000    |
| Korea (Rep. of)                      |             |             |             |             |             |
| Ilmenite                             | 166 900     | 223 039     | 213 184     | 295 987     | 287 895     |
| Malaysia                             |             |             |             |             |             |
| Ilmenite                             | 4 316       | 6 363       | 14 158      | 2 334       | 2 548       |
| Rutile                               | 3 810       | 5 266       | 5 070       | 5 947       | 5 136       |
| Sri Lanka                            |             |             |             |             |             |
| Ilmenite                             | 26 159      | 53 734      | 60 847      | 43 789      | 18 016      |
| Rutile                               | 2 237       | 2 174       | 2 174       | 1 959       | 1 311       |
| Thailand                             |             |             |             |             |             |
| Ilmenite                             | —           | 8           | 41          | 5 095       | 153         |
| Vietnam                              |             |             |             |             |             |
| Ilmenite                             | 210 800     | 225 300     | 235 126     | 216 700     | 230 400     |
| Australia                            |             |             |             |             |             |
| Ilmenite (f)                         | 765 399     | 693 763     | 569 472     | 596 288     | 634 165     |
| Rutile (f)                           | 284 772     | 227 462     | 209 762     | 154 507     | 156 389     |
| Leucoxene (f)                        | 73 380      | 57 148      | 69 183      | 46 743      | 79 058      |
| World total                          |             |             |             |             |             |
| Ilmenite (wt of concs)               | 11 700 000  | 11 900 000  | 12 200 000  | 12 700 000  | 12 200 000  |
| Rutile (wt of concs)                 | 700 000     | 700 000     | 700 000     | 600 000     | 600 000     |
| All forms (TiO <sub>2</sub> content) | 6 300 000   | 6 300 000   | 6 500 000   | 6 700 000   | 6 500 000   |

### Note(s)

- (1) The figures in this table refer to gross tonnage of titanium concentrates.  
(2) Some ilmenite is converted to synthetic rutile in Australia, India, Japan and USA.

- (a) Including natural rutile  
(b) It is believed that the majority of this is processed into slag.  
(c) Canada produces some ilmenite which is sold as such and not processed into slag, but tonnages are small  
(d) Including synthetic rutile  
(e) Years ended 31 March following that stated  
(f) Years ended 30 June of that stated

## Mine production of tungsten

tonnes (metal content)

| Country                    | 2016   | 2017    | 2018    | 2019    | 2020     |
|----------------------------|--------|---------|---------|---------|----------|
| Austria                    | 954    | 975     | 936     | 892     | 896      |
| Portugal (a)               | 549    | 669     | 715     | 518     | 535      |
| Russia                     | 3 067  | 2 174   | 2 661   | 2 825   | 2 692    |
| Spain                      | 699    | 564     | 856     | 414     | 184      |
| United Kingdom             | 923    | 1 370   | * 1 240 | —       | —        |
| Burundi                    | 80     | 157     | 118     | 164     | * 165    |
| Congo, Democratic Republic | 93     | 150     | 230     | 700     | 128      |
| Nigeria                    | 8      | 12      | 66      | 13      | * 13     |
| Rwanda (b)(c)              | 997    | 929     | 1 039   | 1 303   | 956      |
| Uganda                     | 32     | 47      | 144     | 110     | 9        |
| Zimbabwe                   | 1 248  | * 1 000 | —       | —       | —        |
| Mexico                     | —      | —       | 45      | 15      | * 15     |
| Bolivia                    | 848    | 776     | 1 043   | 813     | 1 030    |
| Brazil                     | 323    | 411     | * 400   | * 400   | * 400    |
| Colombia                   | 3      | —       | —       | —       | 0        |
| Burma (d)                  | 167    | 272     | 303     | 220     | 107      |
| China                      | 63 956 | 67 472  | 64 938  | 75 452  | * 76 000 |
| Korea, Dem. P.R. of        | * 50   | * 300   | * 1 370 | * 1 130 | * 1 100  |
| Kyrgyzstan                 | * 100  | * 100   | * 100   | * 100   | * 100    |
| Mongolia                   | 710    | * 660   | * 543   | * 463   | * 42     |
| Thailand                   | (a) 37 | (a) 52  | (a) 81  | (a) 45  | (e) 70   |
| Uzbekistan                 | * 300  | * 300   | 4       | 2       | 2        |
| Vietnam                    | 5 041  | 5 178   | 4 350   | 4 816   | 8 066    |
| Australia (b)              | 208    | * 5     | * 5     | * 5     | * 5      |
| World total                | 80 000 | 83 600  | 81 200  | 90 400  | 92 500   |

### Note(s)

(1) In addition to the countries listed, the USA is known to produce tungsten.

(a) Wolframite and scheelite

(b) Years ended 30 June of that stated

(c) Exports

(d) Including tungsten content of tin-tungsten concentrates

(e) Scheelite

## Mine production of uranium

tonnes (metal content)

| Country  | 2016    | 2017    | 2018    | 2019    | 2020    |
|--|---------|---------|---------|---------|---------|
| Czech Republic   | 128     | 59      | 34      | 33      | 29      |
| Germany  | 45      | 34      | —       | 24      | 8       |
| Romania  | * 50    | * —     | * —     | * —     | * —     |
| Russia   | 3 005   | 2 917   | 2 904   | 2 911   | 2 846   |
| Ukraine  | 808     | 707     | 790     | 801     | 400     |
| Namibia  | 3 657   | 4 529   | 5 882   | 5 622   | 4 204   |
| Niger  | 3 478   | 3 485   | 2 910   | 2 863   | 2 991   |
| South Africa   | 382     | 358     | 196     | 163     | 124     |
| Canada   | 14 037  | 12 433  | 7 320   | 6 871   | 4 085   |
| USA  | 1 123   | 941     | 565     | 65      | 6       |
| Brazil   | 44      | —       | —       | —       | 15      |
| China  | * 1 616 | * 1 692 | * 1 885 | * 1 885 | * 1 885 |
| India  | * 385   | * 421   | * 423   | * 308   | * 400   |
| Iran   | * —     | * 40    | * 71    | * 71    | * 71    |
| Kazakhstan   | 24 586  | 23 321  | 21 705  | 22 808  | 19 477  |
| Pakistan   | * 45    | * 45    | * 45    | * 45    | * 45    |
| Uzbekistan   | * 3 325 | * 3 400 | * 3 450 | * 3 500 | * 3 500 |
| Australia  | 6 235   | 5 713   | 6 562   | 6 553   | 6 168   |
| World total  | 62 900  | 60 100  | 54 700  | 54 500  | 46 300  |
| World total (U <sub>3</sub> O <sub>8</sub> equivalent) | 74 200  | 70 900  | 64 500  | 63 100  | 54 500  |

### Note(s)

(1) Excluding uranium production from decommissioning operations.

## Mine production of vanadium

tonnes (metal content)

| Country      | 2016   | 2017    | 2018     | 2019     | 2020     |
|--------------|--------|---------|----------|----------|----------|
| Russia       | 16 886 | 18 636  | 17 052   | 18 380   | 19 530   |
| South Africa | 15 877 | 14 222  | 14 904   | 14 858   | 14 421   |
| USA          | —      | —       | —        | 460      | * 170    |
| Brazil       | 4 461  | 5 206   | 5 505    | 5 923    | 6 622    |
| China        | 45 900 | 45 400  | * 40 000 | * 54 000 | * 53 000 |
| India (a)    | 1 125  | * 400   | 442      | * 400    | * 400    |
| Kazakhstan   | * —    | * 1 000 | * 1 000  | * 1 000  | * 1 000  |
| World total  | 84 000 | 85 000  | 79 000   | 95 000   | 95 000   |

### Note(s)

(1) This table includes vanadium in slag products but excludes vanadium recovered as a by-product of the refining and burning of heavy oils.

(a) Years ending 31 March following that stated

## Production of vermiculite

tonnes (metric)

| Country      | 2016      | 2017      | 2018      | 2019      | 2020      |
|--------------|-----------|-----------|-----------|-----------|-----------|
| Bulgaria     | * 10 000  | * 10 000  | * 10 000  | * 10 000  | * 10 000  |
| Russia       | 12 363    | 9 262     | 25 904    | 29 266    | * 9 000   |
| Turkey       | 1 050     | 1 618     | 18 183    | 1 370     | 19 230    |
| Kenya        | 410       | * 400     | * 400     | * 400     | * 400     |
| South Africa | 166 483   | 166 084   | 141 346   | 158 013   | 118 223   |
| Uganda       | 3 295     | 4 119     | 10 413    | 9 674     | 14 170    |
| Zimbabwe (a) | 29 020    | 23 302    | 33 161    | * 30 000  | * 30 000  |
| Mexico       | 310       | 464       | 244       | 148       | * 148     |
| USA (a)      | * 100 000 | * 100 000 | * 100 000 | * 100 000 | * 100 000 |
| Argentina    | 60        | —         | *—        | *—        | *—        |
| Brazil       | 55 000    | 55 000    | 50 000    | 50 000    | * 50 000  |
| China        | * 15 000  | * 15 000  | * 15 000  | * 15 000  | * 15 000  |
| India (b)    | 9 042     | 6 054     | 2 992     | 2 774     | 1 260     |

Note(s)

(a) Sold or used by producers

(b) Years ended 31 March following that stated

## Production of wollastonite

tonnes (metric)

| Country       | 2016      | 2017      | 2018      | 2019      | 2020      |
|---------------|-----------|-----------|-----------|-----------|-----------|
| Finland       | * 10 000  | * 10 000  | * 10 000  | * 11 000  | * 11 000  |
| Spain         | 13 553    | 19 135    | 12 235    | 7 165     | 17 412    |
| Mexico        | 63 683    | 98 449    | 145 814   | 159 498   | 77 665    |
| USA           | * 60 000  | * 50 000  | * 60 000  | * 50 000  | * 40 000  |
| China         | * 880 000 | * 840 000 | * 890 000 | * 890 000 | * 890 000 |
| India (a)     | 166 186   | 153 049   | 184 063   | 124 657   | 103 902   |
| Australia (b) | 1 797     | 1 749     | 2 007     | —         | 2 426     |

Note(s)

(1) In addition to the countries listed, Canada also produces wollastonite (since 2014).

(a) Years ended 31 March following that stated

(b) Years ended 30 June of that stated

## Mine production of zinc

tonnes (metal content)

| Country                    | 2016       | 2017       | 2018       | 2019        | 2020        |
|----------------------------|------------|------------|------------|-------------|-------------|
| Armenia                    | 4 735      | 5 784      | 6 497      | 6 743       | 7 758       |
| Bosnia & Herzegovina       | 9 670      | 10 235     | 10 603     | 6 440       | 4 849       |
| Bulgaria                   | 11 415     | 10 886     | 11 367     | 14 570      | 18 000      |
| Finland                    | 45 852     | 66 284     | 85 335     | 68 153      | 57 962      |
| Georgia                    | ...        | ...        | ...        | ...         | 2 243       |
| Greece                     | 18 866     | 17 300     | 21 456     | 22 298      | 28 037      |
| Ireland, Republic of       | 147 797    | 130 580    | 131 742    | 122 500     | 127 000     |
| Kosovo                     | 4 814      | 4 468      | 3 619      | 3 089       | 3 909       |
| Montenegro                 | 8 100      | 8 800      | 10 700     | 9 500       | 10 100      |
| North Macedonia            | 24 871     | 27 846     | 30 384     | 31 291      | 31 748      |
| Poland                     | 50 124     | 44 959     | 41 886     | 37 645      | 39 500      |
| Portugal                   | 71 052     | 71 357     | 144 983    | 161 569     | 176 849     |
| Romania                    | * 1 600    | * 800      | * 300      | * 1 300     | 100         |
| Russia                     | 245 800    | 255 200    | 288 000    | 275 400     | * 280 000   |
| Serbia                     | 6 200      | 11 900     | 11 800     | 6 900       | 6 500       |
| Slovakia                   | 126        | 166        | 151        | 119         | 96          |
| Spain                      | 76 342     | 70 451     | 106 352    | 90 980      | 90 368      |
| Sweden                     | 258 264    | 251 244    | 237 715    | 247 657     | 234 811     |
| Turkey                     | 118 700    | 155 900    | 184 500    | 146 800     | 136 300     |
| Algeria                    | 314        | * 500      | * 500      | * 1 000     | 1 600       |
| Burkina Faso               | 81 422     | 92 731     | 99 162     | 95 611      | 73 543      |
| Congo                      | 1          | 4          | 1          | 5           | 1           |
| Congo, Democratic Republic | 12 587     | 12 377     | 1 129      | 1 607       | 15 305      |
| Eritrea                    | 40 900     | 95 400     | 125 000    | 121 260     | 121 930     |
| Morocco                    | 53 880     | 51 701     | 43 567     | 43 600      | 38 000      |
| Namibia                    | 124 749    | 132 854    | 118 435    | 114 735     | 62 333      |
| Nigeria                    | * 14 000   | * 22 000   | * 27 000   | * 23 000    | * 26 900    |
| South Africa               | 26 695     | 30 778     | 28 129     | 125 157     | 160 816     |
| Zambia                     | —          | —          | —          | 44          | * 1 500     |
| Canada                     | 301 210    | 346 776    | 304 964    | 323 019     | 371 491     |
| Cuba                       | —          | * 2 900    | * 42 000   | * 57 800    | * 57 700    |
| Dominican Republic         | 3 636      | 3 920      | 4 038      | 5 527       | 2 361       |
| Guatemala                  | 14 975     | 6 100      | —          | —           | —           |
| Honduras                   | 14 579     | 20 436     | 28 421     | 29 223      | * 27 000    |
| Mexico                     | 661 646    | 671 444    | 662 355    | 859 194     | 688 461     |
| USA                        | 804 800    | 773 800    | 824 000    | 753 000     | 718 000     |
| Argentina                  | 26 680     | 26 800     | 23 980     | 16 407      | 8 569       |
| Bolivia                    | 489 293    | 527 206    | 519 630    | 527 521     | 358 411     |
| Brazil                     | 158 200    | 156 500    | 169 800    | 163 400     | 174 500     |
| Chile                      | 42 870     | 29 008     | 26 810     | 5 620       | 28 662      |
| Peru                       | 1 337 081  | 1 473 073  | 1 474 383  | 1 404 382   | 1 334 570   |
| Burma (a)                  | 72 640     | 12 560     | 11 700     | * 39 000    | * 19 000    |
| China                      | 4 710 500  | 3 868 500  | 3 721 100  | * 3 700 000 | * 3 200 000 |
| India (a)                  | 755 778    | 772 600    | 728 402    | 723 412     | 756 998     |
| Indonesia                  | * 8 500    | * 13 900   | * 20 100   | * 26 200    | * 17 420    |
| Iran                       | * 135 000  | 140 000    | * 145 000  | * 150 000   | * 150 000   |
| Kazakhstan                 | 351 000    | 345 000    | 346 000    | 321 900     | 335 400     |
| Korea (Rep. of)            | 2 257      | 3 321      | 3 656      | 4 106       | 4 252       |
| Korea, Dem. P.R. of        | 66 469     | 35 671     | * 35 000   | * 30 000    | * 28 000    |
| Laos                       | * 700      | * 5 700    | * 3 100    | * 1 300     | * 1 200     |
| Mongolia                   | 50 100     | 82 700     | 43 950     | 41 550      | 38 150      |
| Pakistan (b)               | 7 702      | 19 457     | 26 979     | 37 365      | 17 527      |
| Saudi Arabia               | 41 640     | 21 677     | 18 000     | 18 900      | * 19 000    |
| Tajikistan                 | 73 900     | 81 500     | 84 213     | 79 131      | 47 651      |
| Thailand                   | 33 983     | 1 182      | —          | —           | —           |
| Uzbekistan                 | 12 000     | 37 000     | 31 000     | 37 000      | 41 000      |
| Vietnam                    | * 12 000   | * 12 000   | * 12 000   | * 12 000    | * 12 000    |
| Australia                  | 884 826    | 852 164    | 1 146 781  | 1 337 321   | 1 314 910   |
| World total                | 12 500 000 | 11 900 000 | 12 200 000 | 12 500 000  | 11 500 000  |

See notes on the following page.

## Mine production of zinc

Note(s)

(a) Years ended 31 March following that stated

(b) Years ended 30 June of that stated

## Production of slab zinc

tonnes (metric)

| Country             | 2016       | 2017       | 2018       | 2019       | 2020       |
|---------------------|------------|------------|------------|------------|------------|
| Belgium (a)         | 236 000    | 249 000    | 275 000    | 271 200    | 270 000    |
| Bulgaria            | 75 811     | 73 715     | 75 150     | 73 512     | 74 500     |
| Finland             | 290 599    | 284 992    | 295 029    | 290 844    | 297 257    |
| France              | 149 000    | 166 000    | 155 000    | 150 000    | 166 000    |
| Germany             | 168 000    | 174 000    | 180 000    | 182 000    | 175 000    |
| Italy               | 139 500    | 128 800    | 131 600    | 132 900    | 126 100    |
| Netherlands         | 283 000    | 248 000    | 268 000    | * 240 000  | * 250 000  |
| Norway              | 170 541    | 172 086    | 190 570    | 195 374    | 191 576    |
| Poland              | 161 200    | 162 247    | 159 739    | 159 436    | 160 300    |
| Russia              | 247 300    | 256 700    | 254 600    | 206 700    | 211 800    |
| Spain               | 500 000    | 507 000    | 511 000    | 507 900    | 504 100    |
| Ukraine             | 100        | —          | —          | —          | —          |
| Algeria             | 3 101      | 1 472      | 2 045      | 543        | —          |
| Namibia             | 90 739     | 83 768     | 67 122     | 64 985     | 16 206     |
| Canada              | 691 389    | 598 438    | 620 202    | 653 194    | 678 558    |
| Mexico              | 321 159    | 327 003    | 336 378    | 388 588    | 363 383    |
| USA                 | 126 000    | 132 000    | 116 000    | 115 000    | 180 000    |
| Brazil              | 284 457    | 245 200    | 251 000    | 241 900    | 247 000    |
| Peru                | 341 518    | 312 339    | 333 677    | 356 925    | 318 619    |
| China               | 6 195 962  | 6 143 900  | 5 607 103  | 6 236 423  | 6 424 876  |
| India (a)           | 672 010    | 791 461    | 696 283    | 688 282    | 715 445    |
| Iran                | 135 000    | 140 000    | 130 000    | 144 000    | 135 000    |
| Japan               | 533 689    | 523 919    | 521 110    | 526 717    | 501 146    |
| Kazakhstan          | 325 820    | 331 018    | 317 965    | 318 399    | 311 322    |
| Korea (Rep. of)     | 1 009 116  | 961 904    | 1 008 957  | 973 000    | 980 000    |
| Korea, Dem. P.R. of | * 15 000   | * 15 000   | * 15 000   | * 15 000   | * 15 000   |
| Thailand            | 72 813     | 30 018     | —          | —          | —          |
| Uzbekistan          | 68 000     | 70 000     | 70 458     | 67 844     | 72 993     |
| Vietnam             | 10 800     | 10 900     | * 10 000   | * 10 000   | 10 000     |
| Australia           | 464 176    | 462 095    | 489 967    | 435 977    | 447 250    |
| World total         | 13 800 000 | 13 600 000 | 13 100 000 | 13 600 000 | 13 800 000 |

Note(s)

(a) Years ended 31 March following that stated

## Production of zirconium minerals

tonnes (metric)

| Country       | 2016      | 2017      | 2018      | 2019      | 2020      |
|---------------|-----------|-----------|-----------|-----------|-----------|
| Russia (a)    | 7 800     | 7 200     | 7 400     | 6 300     | 6 000     |
| Ukraine       | * 22 000  | * 25 000  | 21 614    | * 22 000  | * 22 000  |
| Kenya         | 27 671    | 65 324    | 36 604    | 48 356    | 32 224    |
| Madagascar    | 15 582    | 21 000    | 22 757    | 28 500    | 25 300    |
| Mozambique    | 68 200    | 73 960    | 76 550    | 87 181    | 78 138    |
| Nigeria       | 891       | * 900     | 531       | * 500     | * 500     |
| Senegal       | 52 627    | 61 562    | 64 278    | 58 432    | 59 000    |
| Sierra Leone  | * 1 400   | 3 000     | 11 400    | 8 500     | 6 600     |
| South Africa  | * 360 000 | * 377 000 | * 350 000 | * 370 000 | * 320 000 |
| USA           | * 80 000  | 80 000    | 100 000   | 100 000   | * 90 000  |
| Brazil (b)    | 21 302    | * 21 000  | * 20 000  | * 20 000  | * 20 000  |
| China         | * 33 500  | * 33 500  | * 33 500  | * 33 500  | * 33 500  |
| India (c)     | 11 709    | 9 107     | 11 906    | * 12 000  | * 10 000  |
| Indonesia (d) | * 35 000  | * 29 000  | * 54 000  | * 73 000  | * 64 000  |
| Malaysia      | 653       | 1 595     | 509       | 449       | 157       |
| Sri Lanka     | 7 749     | 8 569     | 785       | 917       | 419       |
| Vietnam       | * 6 000   | *—        | * 4 000   | * 3 000   | * 3 000   |
| Australia (e) | 620 136   | 583 339   | 414 672   | 499 335   | 434 339   |
| World total   | 1 372 000 | 1 401 000 | 1 231 000 | 1 372 000 | 1 205 000 |

### Note(s)

(1) In this table the term 'zirconium minerals' is understood to mean zircon, unless otherwise stated.

- (a) Baddeleyite concentrate
- (b) Including caldasite rock containing zircon and baddeleyite
- (c) Years ending 31 March following that stated
- (d) Conservative BGS estimates, based on exports
- (e) Years ended 30 June of that stated

## **APPENDIX 1**

Additional tables relating to Europe only



## Production of primary aggregates (sand and gravel and crushed rock)

tonnes (metric)

| Country                     | 2016         | 2017         | 2018         | 2019         | 2020          |
|-----------------------------|--------------|--------------|--------------|--------------|---------------|
| <b>Austria</b>              |              |              |              |              |               |
| Sand and gravel             | 29 957 472   | 30 926 736   | 31 617 440   | 30 712 467   | 30 010 316    |
| Crushed rock (a)            | 24 862 807   | 25 963 256   | 27 684 134   | 27 674 453   | 27 471 201    |
| <b>Belgium</b>              |              |              |              |              |               |
| Sand and gravel             | * 20 000 000 | * 19 000 000 | * 15 500 000 | * 15 500 000 | * 15 500 000  |
| Crushed rock                | * 46 000 000 | * 46 000 000 | * 45 000 000 | * 45 000 000 | * 45 000 000  |
| <b>Bulgaria</b>             |              |              |              |              |               |
| Sand and gravel (a)         | 8 571 694    | 9 860 186    | 8 610 204    | 8 189 735    | 8 500 308     |
| Crushed rock (a)            | 19 379 125   | 16 444 761   | 21 468 893   | 22 769 369   | 24 611 097    |
| <b>Croatia</b>              |              |              |              |              |               |
| Sand and gravel             | 3 444 036    | 3 766 684    | 3 646 945    | 4 105 831    | 4 585 010     |
| <b>Cyprus</b>               |              |              |              |              |               |
| Crushed rock                | 5 482 913    | 7 034 430    | 7 978 133    | 8 422 664    | 7 905 100     |
| <b>Czech Republic</b>       |              |              |              |              |               |
| Sand and gravel             | 18 338 000   | 19 848 000   | 20 473 000   | 19 982 000   | 20 335 000    |
| Crushed rock                | 37 793 000   | 38 262 000   | 41 648 000   | 42 225 000   | 42 915 000    |
| <b>Denmark</b>              |              |              |              |              |               |
| Sand and gravel             | 47 058 000   | 49 323 000   | 48 950 000   | 47 803 000   | 51 558 000    |
| Crushed rock                | 232 000      | 283 000      | 537 000      | 233 000      | 175 000       |
| <b>Estonia</b>              |              |              |              |              |               |
| Sand and gravel             | 7 269 100    | 6 733 400    | 6 467 500    | 6 438 700    | 3 962 700     |
| Crushed rock                | 6 224 000    | 7 704 100    | 6 148 300    | 5 771 800    | 10 923 300    |
| <b>Finland</b>              |              |              |              |              |               |
| Sand and gravel             | * 35 000 000 | * 28 200 000 | * 24 500 000 | * 23 800 000 | * 23 000 000  |
| Crushed rock                | * 43 000 000 | * 48 700 000 | * 51 100 000 | * 51 000 000 | * 50 000 000  |
| <b>France</b>               |              |              |              |              |               |
| Sand and gravel             | 120 382 000  | 123 865 000  | 126 365 000  | 126 717 000  | * 126 700 000 |
| Crushed rock                | 183 960 000  | 187 233 000  | 195 998 000  | 198 951 000  | * 199 000 000 |
| <b>Germany</b>              |              |              |              |              |               |
| Sand and gravel             | 247 000 000  | 257 000 000  | 259 000 000  | 259 000 000  | 262 000 000   |
| Crushed rock                | 218 000 000  | 220 000 000  | 226 000 000  | 217 000 000  | 223 000 000   |
| <b>Greece</b>               |              |              |              |              |               |
| Sand and gravel             | 42 051 690   | 38 339 770   | 34 439 069   | * 34 000 000 | * 34 000 000  |
| <b>Hungary</b>              |              |              |              |              |               |
| Sand and gravel             | 29 829 848   | 37 984 379   | 46 866 306   | 49 419 275   | * 49 000 000  |
| Crushed rock                | 9 002 304    | 9 097 923    | 10 562 195   | 9 345 548    | * 9 000 000   |
| <b>Iceland</b>              |              |              |              |              |               |
| Sand and gravel             | * 291 000    | * 291 000    | * 291 000    | * 291 000    | * 291 000     |
| <b>Ireland, Republic of</b> |              |              |              |              |               |
| Sand and gravel             | * 7 000 000  | * 7 000 000  | * 7 000 000  | * 7 000 000  | * 7 000 000   |
| Crushed rock                | * 23 000 000 | * 23 000 000 | * 23 000 000 | * 23 000 000 | * 23 000 000  |
| <b>Italy</b>                |              |              |              |              |               |
| Sand and gravel             | 59 911 685   | 63 627 458   | 69 575 607   | 52 111 877   | 54 606 351    |
| Crushed rock                | 54 850 309   | 57 663 627   | 34 169 132   | * 32 060 000 | * 29 800 000  |
| <b>Latvia</b>               |              |              |              |              |               |
| Sand and gravel             | 9 181 594    | 11 417 545   | 13 668 753   | 12 951 427   | * 12 500 000  |
| Crushed rock                | 1 547 520    | 2 069 297    | 2 101 489    | 987 008      | 901 472       |
| <b>Lithuania</b>            |              |              |              |              |               |
| Sand and gravel             | 8 227 013    | 9 805 230    | 9 992 563    | 11 675 361   | 12 539 223    |
| Crushed rock                | 4 365 787    | 6 392 084    | 7 340 099    | 7 517 080    | 8 298 830     |
| <b>Malta</b>                |              |              |              |              |               |
| Crushed rock (b)            | 1 551 411    | 1 426 820    | 1 682 385    | 1 739 310    | 1 436 438     |
| <b>Montenegro</b>           |              |              |              |              |               |
| Sand and gravel             | 178 906      | 173 670      | 159 528      | 156 612      | 380 976       |
| Crushed rock                | 184 976      | 212 697      | 166 550      | 143 219      | 163 573       |
| <b>Netherlands</b>          |              |              |              |              |               |
| Sand and gravel             | 55 900 000   | 43 600 000   | 64 800 000   | 68 600 000   | * 69 000 000  |
| <b>Norway</b>               |              |              |              |              |               |
| Sand and gravel             | 14 959 000   | 14 696 000   | 13 324 347   | 13 362 555   | 14 053 691    |
| Crushed rock                | 70 043 000   | 75 845 000   | 80 300 804   | 84 412 381   | 79 020 476    |
| <b>Poland</b>               |              |              |              |              |               |
| Sand and gravel             | 173 175 000  | 186 296 000  | 197 005 000  | 182 811 000  | 180 243 000   |
| Crushed rock                | 59 448 000   | 67 617 000   | 80 161 000   | 81 562 000   | 76 286 654    |
| <b>Portugal</b>             |              |              |              |              |               |
| Sand and gravel             | 5 753 545    | 6 526 376    | 8 370 573    | 10 187 542   | 10 784 029    |
| Crushed rock                | 25 939 048   | 28 789 458   | 30 620 462   | 32 134 534   | 35 063 333    |
| <b>Romania</b>              |              |              |              |              |               |
| Sand and gravel             | * 53 500 000 | * 55 000 000 | * 88 000 000 | * 60 000 000 | * 60 000 000  |
| Crushed rock                | * 34 000 000 | * 31 000 000 | * 28 000 000 | * 28 000 000 | * 28 000 000  |

## Production of primary aggregates (sand and gravel and crushed rock)

tonnes (metric)

| Country          | 2016          | 2017          | 2018          | 2019          | 2020          |
|------------------|---------------|---------------|---------------|---------------|---------------|
| Slovakia         |               |               |               |               |               |
| Sand and gravel  | 1 306 800     | 1 743 489     | 2 096 000     | 1 982 000     | 1 785 727     |
| Crushed rock     | 12 833 100    | 13 518 792    | 12 790 000    | 11 551 000    | 10 823 895    |
| Slovenia         |               |               |               |               |               |
| Sand and gravel  | 1 833 732     | 2 047 403     | 1 810 666     | 1 437 101     | 1 869 851     |
| Crushed rock     | 7 470 433     | 8 642 881     | 10 282 002    | 9 550 639     | 8 983 918     |
| Spain            |               |               |               |               |               |
| Sand and gravel  | 31 000 000    | 37 000 000    | 42 600 000    | 43 000 000    | 42 000 000    |
| Crushed rock     | 100 000 000   | 68 000 000    | 70 000 000    | 79 000 000    | 75 000 000    |
| Sweden           |               |               |               |               |               |
| Sand and gravel  | 11 927 694    | 11 774 505    | 12 187 744    | 10 617 896    | 9 290 761     |
| Crushed rock     | 75 720 385    | 84 467 197    | 91 730 406    | 92 890 100    | 91 730 897    |
| Switzerland      |               |               |               |               |               |
| Sand and gravel  | * 36 630 000  | * 35 640 000  | * 35 160 000  | * 35 140 000  | * 34 550 000  |
| Crushed rock     | 2 324 800     | 2 194 123     | 2 410 000     | 2 270 000     | 2 390 000     |
| United Kingdom   |               |               |               |               |               |
| Sand and gravel  | 68 075 000    | 67 548 000    | 69 882 000    | 66 170 000    | 57 702 000    |
| Crushed rock (c) | 125 301 000   | 125 739 000   | 129 998 000   | 129 600 000   | 225 011 000   |
| European total   | 2 340 000 000 | 2 382 000 000 | 2 501 000 000 | 2 448 000 000 | 2 534 000 000 |

### Note(s)

- (1) So far as possible, these production statistics include construction sand; gravel, pebbles, shingle and flint; crushed stone used for concrete aggregates, roadstone and other construction uses; granules, chippings and powders.
  - (2) Where official sources show more than one series for aggregates the higher series has generally been used in this table.
  - (3) Where marine sands and gravels have been identified, these are included.
  - (4) Information may be incomplete or absent due to reporting methods, confidentiality or lack of available information.
  - (5) Production from many small operations are not officially compiled. The minimum number of employees for which establishments are required to report production varies between different countries and can also vary from year to year.
  - (6) Quantities of sand from sand and gravel operations may be discarded due to low demand. This may or may not be included in the statistics.
- (a) Sales
- (b) Estimated by official source based on a previous year census and the rate of change observed from a sample of quarries in subsequent years
- (c) Includes small quantities for other purposes in Northern Ireland

## Production of cement clinker

tonnes (metric)

| Country        | 2016        | 2017         | 2018        | 2019        | 2020         |
|----------------|-------------|--------------|-------------|-------------|--------------|
| Austria        | * 125 000   | * 125 000    | * 125 000   | * 125 000   | 19 630       |
| Belgium        | * 850 000   | 800 584      | 2 234 195   | * 2 250 000 | 2 394 779    |
| Bulgaria       | 61 100      | 79 800       | * 80 000    | * 80 000    | * 80 000     |
| Cyprus         | 1 801 647   | 1 815 568    | 1 671 205   | 1 643 193   | 2 001 957    |
| Czech Republic | 3 188 086   | 3 236 047    | 3 514 288   | 3 722 188   | 3 556 702    |
| Estonia        | 328 900     | 517 900      | 505 300     | 504 000     | 52 000       |
| France         | 12 528 000  | 12 357 000   | 12 845 000  | 13 005 000  | * 13 000 000 |
| Germany        | 23 423 000  | * 23 000 000 | 22 835 000  | 22 923 753  | 23 464 980   |
| Greece         | 5 891 157   | 7 088 107    | 6 576 608   | 6 429 107   | 6 130 855    |
| Hungary        | * 400 000   | * 400 000    | * 400 000   | * 400 000   | * 400 000    |
| Italy          | 13 677 374  | 18 164 817   | 13 354 776  | 14 855 163  | 12 928 011   |
| Latvia         | * 1 500 000 | * 1 500 000  | * 1 500 000 | * 1 500 000 | * 1 500 000  |
| Luxembourg     | * 700 000   | * 700 000    | * 700 000   | * 700 000   | * 700 000    |
| Norway         | 1 306 292   | 1 461 477    | 1 429 400   | 1 407 000   | 1 389 000    |
| Poland         | 12 075 300  | 12 996 500   | 14 221 000  | 14 178 000  | 14 361 461   |
| Portugal       | 4 412 793   | 4 854 448    | 4 294 389   | 4 272 085   | 4 568 932    |
| Romania        | 5 932 979   | 6 189 799    | 6 586 702   | 7 208 688   | 7 541 962    |
| Serbia         | 1 311 629   | * 1 300 000  | * 1 300 000 | * 1 300 000 | * 1 300 000  |
| Slovakia       | * 1 700 000 | * 1 800 000  | * 1 900 000 | * 2 000 000 | * 2 000 000  |
| Spain          | 17 341 318  | 17 304 352   | 18 266 325  | 17 226 700  | 15 651 702   |
| Sweden         | 2 847 000   | 2 768 000    | 2 957 600   | 2 539 000   | 2 397 000    |
| Turkey         | 67 856 234  | 70 812 559   | 70 343 788  | 56 966 272  | 71 767 003   |
| United Kingdom | 8 056 000   | 7 824 000    | 7 734 000   | 7 830 000   | 6 941 000    |
| European total | 187 000 000 | 197 000 000  | 195 000 000 | 183 000 000 | 194 000 000  |

## Production of finished cement

tonnes (metric)

| Country              | 2016          | 2017        | 2018        | 2019        | 2020          |
|----------------------|---------------|-------------|-------------|-------------|---------------|
| Austria (a)          | 4 501 008     | 4 660 187   | 5 227 834   | 4 516 947   | 4 508 448     |
| Belgium              | 6 255 000     | 6 491 000   | 6 643 000   | 6 773 000   | * 6 800 000   |
| Bulgaria (a)(b)      | 1 951 286     | 2 064 792   | 2 208 116   | 2 371 458   | 2 175 279     |
| Croatia              | 4 325 467     | 5 134 160   | 5 144 991   | 5 235 569   | 5 455 445     |
| Cyprus               | 1 018 537     | 1 319 351   | 1 357 991   | 1 537 017   | 1 496 494     |
| Czech Republic       | 3 937 000     | 4 033 854   | 4 427 713   | 4 569 379   | 4 513 409     |
| Denmark              | 2 259 902     | 2 359 131   | 2 372 246   | 2 440 600   | 2 497 680     |
| Estonia (a)          | 398 800       | 502 900     | 526 900     | 411 300     | 258 400       |
| Finland (a)          | 1 335 248     | 1 510 974   | 1 462 240   | 1 430 226   | * 1 400 000   |
| France               | 15 934 000    | 16 851 000  | 16 537 000  | 16 710 000  | * 17 000 000  |
| Germany              | 32 674 000    | 33 991 150  | 33 654 985  | 34 185 343  | 35 485 000    |
| Greece               | 6 680 078     | 6 334 960   | 6 676 881   | 5 755 532   | (a) 5 272 020 |
| Hungary              | * 1 000 000   | * 1 000 000 | * 1 000 000 | * 1 000 000 | * 1 000 000   |
| Ireland, Republic of | * 2 100 000   | * 2 100 000 | * 2 100 000 | * 1 700 000 | * 1 800 000   |
| Italy                | 19 992 976    | 25 328 555  | 18 644 359  | 19 481 760  | 19 818 320    |
| Latvia               | * 1 000 000   | * 1 000 000 | * 1 000 000 | * 1 000 000 | * 1 000 000   |
| Lithuania            | 1 009 936     | 1 023 437   | 1 150 635   | 1 222 934   | 1 220 837     |
| Luxembourg           | * 1 000 000   | * 1 000 000 | * 1 000 000 | * 1 000 000 | * 1 000 000   |
| Netherlands          | * 1 970 000   | * 2 070 000 | * 2 236 000 | * 2 303 000 | * 2 142 000   |
| North Macedonia      | 855 295       | 900 836     | 920 810     | 896 030     | 927 566       |
| Norway               | 1 745 614     | 1 924 388   | 1 856 800   | 1 780 000   | 1 737 000     |
| Poland               | 15 782 400    | 17 254 400  | 18 957 000  | 18 946 000  | 19 048 709    |
| Portugal (a)         | 4 100 010     | 3 792 733   | 3 963 088   | 4 297 556   | 4 498 364     |
| Romania              | 8 037 717     | 8 441 574   | 8 951 154   | 9 936 772   | 10 539 046    |
| Serbia               | (a) 1 774 404 | 1 907 689   | 2 092 501   | 2 151 000   | 2 364 000     |
| Slovakia             | 3 518 456     | 3 781 889   | 3 912 674   | 4 030 506   | 4 071 834     |
| Slovenia             | * 700 000     | * 700 000   | * 700 000   | * 700 000   | * 700 000     |
| Spain                | 14 286 013    | 15 548 943  | 16 214 663  | 16 998 100  | 16 166 950    |
| Sweden               | 2 795 000     | 3 067 400   | 3 152 300   | 2 844 000   | 2 515 000     |
| Switzerland (c)      | 4 397 180     | 4 272 316   | 4 289 000   | 4 210 000   | 4 150 000     |
| Turkey               | 75 403 325    | 80 552 257  | 71 830 736  | 56 528 236  | 72 299 054    |
| United Kingdom       | 9 370 000     | 9 359 000   | 9 197 000   | 9 079 000   | 8 046 000     |
| European total       | 252 000 000   | 270 000 000 | 259 000 000 | 246 000 000 | 262 000 000   |

Note(s)

(a) Sales

(b) Portland cement only

(c) Includes production in Liechtenstein

## **APPENDIX 2**

### Further acknowledgments

## Further Acknowledgments

In addition to the acknowledgments section on page iv, supplementary information is also obtained from publications dealing with a wide range of commodities such as the African Development Bank Group, African Statistical Yearbook; BP PLC, BP Statistical Review of World total Energy; Austrian Federal Ministry of Science, Research and Economy, World Mining Data; Société de l'Industrie Minérale, Annuaire Statistique Mondial des Minerais et Métaux; Publications of the Interstate Statistical Committee of the CIS; World Bureau of Metal Statistics, World Metal Statistics and Metallstatistik.

Information has been obtained from the websites of the following international organisations:

Alacero; CEMBUREAU The European Cement Association; Extractive Industries Transparency Initiative (EITI); European Aggregates Association (UEPG); Eurostat; Federacciai; International Tin Association Ltd; Kimberley Process; South East Asia Iron and Steel Institute (SEASI); The European Steel Association (EUROFER); The Silver Institute; United Nations agencies; United States Energy Information Administration; United States Geological Survey; World Nuclear Association; World Steel Association.

In addition, information has been obtained from the websites of the following companies:

Agrium; Alcoa SMZ; ALRO S.A.; Aluar; Alumina Ltd; Aluminium Bahrain; Anglo Asian Mining Plc; AngloGold Ashanti; Arab Potash Company; ARMZ Uranium Holding Co; Aurubis; Ascendant Resources Inc; Asian Mineral Resources Ltd; Atico Mining Corporation; Aura Minerals Inc; Autlan; Avesoro Resources Inc; AzerGold; B2Gold; Barrick Gold Corporation; BEB Erdgas und Erdöl GmbH & Co; Bikita Minerals; Boliden Group; Cámara Argentina del Acero; Camimex; Canadian Clay Products Inc; Centamin Plc; Centerra Gold Inc; CI Resources Ltd; Consolidated Nickel Mines Ltd; Dominion Salt; Dundee Precious Metals Inc; Emirates Global Aluminium; Endeavour Mining; Endiama EP; Eramet Group; ETI Aluminium Inc; EVRAZ Plc; Fenix Metals Ltd; Ferbasa; First Quantum Mineral Ltd; Freeport McMoran; Galane Gold; Gazprom; Glencore International AG; Grafitbergbau Kaisersberg GmbH; Gravita India Ltd; Grecian Magnesite SA; Heidelberg Cement AG; Highlands Pacific Ltd; Hindalco Industries Ltd; Hudson Resources Inc; IAMGold Corporation; Iluka Resources; Inception Mining Inc; Israel Chemicals Company; IRC Company Limited; Johnson Matthey; Jordan Phosphate Mines Company; KAZ Minerals Plc; Kenmare Resources Plc; LARCO; Largo Resources Ltd; Libyan Iron and Steel company; Lundin Mining Corporation; Lynas Corporation Ltd; Ma'aden Saudi Arabian Mining Company; Malaysia Smelting Corporation; Managem Group; Mandalay Resources Ltd; Masan Resources Corporation; Maya Gold & Silver Inc; MedcoEnergi; Metallurgical Corporation of China; Minera Alumbra; MMG Limited; Myanmar Yang Tse Copper Ltd; Mytilineos; National Aluminium Company Ltd; Nedmag B.V.; Newcrest Mining Ltd; Newmont Mining Corporation; Nexa Resources S.A.; Nickel28; Nickel Asia Corporation; Nordgold; Norilsk Nickel; Norsk Hydro ASA; Northern Minerals; Nyrstar; OCP Group; OFZ Inc; OM Holdings Ltd;

Orocobre Ltd; Orosur mining Inc; Orvana Minerals Corp; Outokumpu; Padaeng Industries; Paladin Energy Ltd; Pan American; PanAust Ltd; PEMEX Petróleos Mexicanos; Peñoles; Perlite Group; PhosAgro; PT Antam Tbk; PT Indonesia Asahan Aluminium; PT Merdeka Copper Gold Tbk, Indonesia; Qatalum; Qatar Steel Company; Rainbow Rare Earths Limited; Resolute Mining; Rio Tinto Ltd; Ronphos Corporation; Robex Resources; RUSAL; RW Silicium GmbH; Salinen Austria AG; Serbia Zijin Bor Copper DOO; Sherritt International Corporation; SMR; Solikamsk Magnesium Plant; Solway Investment Group Ltd; South32; Southern Copper Corporation; Syrah Resources Ltd; Staatsolie; Tahoe Resources; Tajik Aluminium Company; Talum Group; Tasmania Mines Ltd; Teranga Gold Corporation; Thailand Smelting and Refining Co., Ltd (THAISARCO); TIZir Ltd; Treibacher Industrie AG; Trevali Mining Corporation; United States Antimony Corporation; Uralkali; Vale; Vargon Alloys AB; Vedanta Resources; Verband der Kali - und Salzindustrie EV; Vimetco NV; Weatherley International Plc; Wolf Minerals Ltd; Wolfram Bergbau und Hütten AG; Zavalievsky Graphite Ltd; Zijin Mining.

Information has also been obtained from the following organisations either by direct correspondence or by website consultation:

National Statistic and Information Authority, Afghanistan; National Agency of Natural Resource, Albania; Albanian Geological Survey, Albania; Institute of Statistics, Albania; Office National des Statistiques, Algeria; Instituto Argentino del Petroleo y del Gas, Argentina; The National Institute and Statistics and Censuses, Argentina; Ministry of Productive Development of the Nation, Argentina; Statistical Committee of the Republic of Armenia; Department of Natural Resources and Mines (Queensland), Australia; Primary Industries and Resources SA (South Australia), Australia; Department of Primary Industries (Victoria), Australia; Department of Mines and Energy (Northern Territories), Australia; Mineral Resources Tasmania, Australia; Department of Mines Industry Regulation and Safety (Western Australia); NSW Department of Primary Industries (New South Wales), Australia; Office of chief economist, Australia; Statistik Austria; Federal Ministry of Science, Research and Economy, Austria; The State Statistical Committee of the Republic of Azerbaijan; Department of Statistics, Bahamas; National Oil and Gas Authority, Bahrain; Bangladesh Bureau of Statistics; Ministry of Energy, Small Business and Entrepreneurship Barbados; National Statistical Committee Belarus; Belgian Steel Federation, Belgium; Federation de l'Industrie Cimentiere Belge, Belgium; National Statistics Bureau, Bhutan; Ministerio de minería y metalurgia, Bolivia; Agency for Statistics of Bosnia and Herzegovina; Department of Mines, Botswana; Bank of Botswana; Statistics Botswana; Associacao Brasileira do Alumínio, Brazil; Agencia Nacional do Petroleo, Gas Natural e Biocombustiveis, Brazil; Agencia Nacional de Mineracao, Brazil; Ministry of Mines and Energy, Brazil; Departamento Nacional da Produção Mineral, Brazil; Energy Department, Prime Ministers Office, Brunei; Ministry of Energy, Bulgaria; Bulgarian Association of Metal Industries, Bulgaria; Chambre des Mines du Burkina, Burkina Faso; Central Statistical

Organization, Burma; Institut de Statistiques et d'Etudes Economiques du Burundi; Société Nationale des Hydrocarbures, Cameroon; la Banque des Etats de l'Afrique Centrale, Cameroon; Natural Resources Canada; Canadian Association of Petroleum Producers, Canada; The Chilean Copper Commission, Chile; Servicio Nacional de Geología y Minería, Chile; National Bureau of Statistics of China; China Non-Ferrous Metals Industry Association; Agencia Nacional de Minería, Columbia; Ministry of Mines and Energy, Columbia; Banque Centrale du Congo, Congo, Democratic Republic; Dirección de Geología y Minas, Costa Rica; Croatian Bureau of Statistics, Croatia; Ministry of Economy, Entrepreneurship and Crafts, Croatia; Oficina Nacional de Estadísticas e Información, Cuba; Ministry of Agriculture Natural Resources and Environment, Cyprus; Czech Cement Association, Czech Republic; Czech Geological Survey, Czech Republic; Steel Union, Czech Republic; Danish Energy Agency, Denmark; Statistics Denmark; Dirección General de Minería, Dominican Republic; Autoridade Nacional do Petróleo e Minerais, East Timor; Agencia de Regulación y Control Minero, Ecuador; Central Bank of Ecuador; Central Agency for Public Mobilisation and Statistics, Egypt; Statistics Estonia; Central Bank of Eswatini; Fiji Bureau of Statistics; Geological Survey of Finland; Bureau de Recherches Géologiques et Minières, France; Federation Française de l'Acier, France; Infociments, France; L'Union nationale des industries de carrières et matériaux de construction, France; National Statistics Office of Georgia; National Agency for Mines, Georgia; Federal Institute for Geosciences and Natural Resources, Germany; Chamber of Mines, Ghana; Bank of Ghana, Ghana; Ministry of Environment and Energy, Greece; Greek Institute of Geology and Mineral Exploration, Greece; Greek Statistical Authority, Greece; Greek Mining Enterprises Association, Greece; Ministerio de Energía y Minas, Guatemala; Direction Nationale de la Statistique, Guinea; Bank of Guyana; Mining and Geological Survey of Hungary; Hungarian Central Statistical Office, Hungary; Statistics Iceland; Indian Bureau of Mines, India; Ministry of Mines, India; Office of the Salt Commissioner, India; Ministry of Energy and Mineral Resources of Indonesia; Statistics Indonesia; Statistical Centre of Iran; Iranian Mines & Mining Industries Development & Renovation Organization, Iran; National Iranian Copper Industries Co, Iran; Sustainable Energy Authority of Ireland; Department of Communications, Energy and Natural Resources, Ireland; Ministry of National Infrastructure, Energy and Water, Israel; Italian National Institute of Statistics, Italy; National Association of Non-Ferrous Metals Industries, Italy; Jamaica Bauxite Institute; Statistical Institute of Jamaica; Ministry of Economy Trade and Industry, Japan; Metal Economics Research Institute, Japan; Sulphuric Acid Association of Japan; Ministry of Energy and Mineral Resources, Jordan; Kazakhstan Statistics Agency, Kazakhstan; Kenya National Bureau of Statistics; Korea Institute of Geoscience & Mineral Resources, Korea (Rep. of); Independent Commission for Mines and Minerals, Kosovo; National Statistical Committee of the Kyrgyz Republic; Lao Statistics Bureau; Central Statistical Bureau of Latvia; Central Bank of Liberia; Central Bank of Libya; Statistics Lithuania; Statistical Portal Grand Duchy of Luxembourg; Madagascar Chamber of Mines; Banque Centrale de Madagascar; Ministry of Finance, Economic Planning and Development, Malawi; Mineral and Geoscience Department, Malaysia; Bank Negara

Malaysia; Malaysia Smelting Corporation; Africa Fertilizer Org, Mali; National Statistics Office, Malta; Office National de la Statistique, Mauritania; Statistics Mauritius; Instituto Nacional de Estadística y Geografía, Mexico; Mexican Geological Survey, Mexico; Mongolian Development Institute, Mongolia; Mineral Resources and Petroleum Authority, Mongolia; National Statistical Committee, Mongolia; Statistical Office of Montenegro; Ministère de l'Energie, des Mines et de l'Environnement, Morocco; National Office of Hydrocarbons and Mines, Morocco; Instituto Nacional de Estadística, Mozambique; Bank of Namibia; Geological Survey of Namibia; Chamber of Mines, Namibia; Ministry of Industry, Department of Mines & Geology, Nepal; Statistics Netherlands; Nlog, Netherlands; Direction de l'Industrie, des Mines et de l'Energie, New Caledonia; Ministry of Business, Innovation & Employment, New Zealand; New Zealand Petroleum & Minerals; Ministerio de Energía y Minas, Nicaragua; Banco Central de Nicaragua; Institut National de la Statistique, Niger; National Bureau of Statistics, Nigeria; Nigerian Geological Survey Agency, Nigeria; State Statistical Office, North Macedonia; Norwegian Petroleum Directorate, Norway; Norwegian Directorate of Mining, Norway; Statistics Norway; National Centre for Statistics & Information, Oman; Central Bank of Oman; Pakistan Bureau of Statistics; Geological Survey of Pakistan; Instituto Nacional de Estadística y Censo, Panama; Chamber of Mines and Petroleum, Papua New Guinea; Ministry of Energy and Mines, Peru; Department of Energy, Philippines; Mines and Geoscience Bureau, Philippines; Polish Geological Institute - National Research Institute, Poland; Statistics Poland; Polish Academy of Science, Poland; Direção Geral de Energia e Geologia, Portugal; Directorate-General for Natural Resources, Safety and Maritime Services, Portugal; National Agency for Mineral Resources, Romania; Institutul Național de Statistică, Romania; Ministry of Natural Resources, Russia; Statistics of Russia; National Bank of Rwanda, National Institute of Statistics, Rwanda; General Authority for Statistics, Saudi Arabia; Agence Nationale de la Statistique et de la Démographie, Senegal; Statistical Office for the Republic of Serbia; Bank of Sierra Leone; State Geological Institute of Dionýz Štúr, Slovakia; Geological Survey of Slovenia; Department of Mineral Resources, South Africa; Ministry of Mining, South Sudan; Ministry of Industry, Energy and Tourism, Spain; Geological and Mining Institute of Spain; Central Bank of Sri Lanka; Central Bank of Sudan; Jernkontoret, Sweden; Geological Survey of Sweden; Georesources Switzerland; Cemsuisse, Switzerland; Bureau of Mines, Taiwan; Ministry of Economic Affairs, Taiwan; Agency on Statistics under President of the Republic of Tajikistan; National Bureau of Statistics, Tanzania; Department of Primary Industries and Mines, Thailand; Department of Mineral Fuels, Thailand; Direction Général des Mines et de la Géologie, Togo; Central bank of Trinidad & Tobago; Institut National de la Statistique, Tunisia; Ministry of Industry, Energy and Mines, Tunisia; Turkish Statistical Institute, Turkey; Ministry of Energy and Natural Resources, Turkey; Turkish Cement Manufacturers' Association (TÜRKÇİMENTO); Uganda Bureau of Statistics; State Statistics Service of Ukraine; Iron and Steel Statistics Bureau, United Kingdom; Department for Business, Energy and Industrial Strategy, United Kingdom; Office for National Statistics, United Kingdom; Ministerio de Industria, Energía y Minería, Uruguay;

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