

# World Mineral Production



2012–2016



**British  
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL



BRITISH GEOLOGICAL SURVEY

# WORLD MINERAL PRODUCTION 2012–16

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BRITISH GEOLOGICAL SURVEY

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Cover image: Evaporation ponds near the Khooor 'Potash complex' in central Iran, producing salt and carnallite.  
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## PREFACE

Welcome to the latest edition of World Mineral Production, which includes global mineral production data for 2016 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, 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 2012 to 2016. 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 British Geological Survey by numerous national and international organisations is gratefully acknowledged.

As with past editions, the production statistics in this latest volume reveal some interesting trends. For example, between 2015 and 2016 there was a 31% increase in the global production of lithium, which more than offsets the 11% decline between 2014 and 2015. This reflects the significant recent increased demand for lithium, particularly in connection with batteries for electric-powered vehicles, and is the result of increased production from Argentina (up 58% in 2016 compared to 2015), Chile (up 39%) and Australia (up 25%). There were also increases in lithium output in Portugal and Zimbabwe as well as new production from Bolivia.

Other mineral production increases are more difficult to explain, such as the 24% increase in China's production of mercury, which has pushed the global total up by 21% between 2015 and 2016. This is surprising in light of the UN Minamata Convention on Mercury, which is designed to protect human health and the environment from the adverse effects of mercury by phasing out mercury mining and reducing its use. Despite 128 country signatures and 88 ratifications, the global production of mercury continued to rise during the five years presented in this volume. In August 2017 China announced that it would ban all primary mercury mining by 2032 as part of this Convention and this is significant because in 2016 China produced 87% of the world's mercury.

In contrast to lithium, another significant battery metal, cobalt, experienced a decline in mine production of nearly 12% in 2016 compared to 2015. This is primarily the result of lower production from the Democratic Republic of Congo (DRC)

where output in 2016 was almost 18% less than 2015. The reasons for this are unclear but may be related to the general economic situation in the DRC, problems with the availability of electrical power and lower prices in 2016 for both cobalt and copper; the latter has an impact because cobalt is mined as a by-product of copper in DRC. The temporary closure of at least one mine in the country due to a processing plant upgrade also contributed to the production decrease.

Concern surrounding the worldwide security of supply of minerals, which has been evident for a few years now, continues. Particular interest focusses on the so called 'critical' minerals, i.e. those elements that are essential for new and/or green technologies. New policies and programmes of supporting research have continued to be developed across the entire worldwide supply chain, with the common aims of diversifying the supply base (which includes, looking at novel primary resources types, particularly those in frontier environments), improving resource efficiency (including, but not limited to, recycling), and developing alternatives for the most constrained elements both in terms of substituting materials and other technologies.

Following the analysis carried out by a consortium, of which BGS was a part, the updated list of critical raw materials was published by the European Commission in the autumn 2017. This list increases the number of raw materials, or material groups, classified as 'critical' to the European Union from 20 to 27. New additions to the list are barytes, bismuth, hafnium, helium, natural rubber, phosphorus, scandium, tantalum and vanadium. Chromium and magnesite were removed from the list.

During the past year, the BGS has continued to be involved with several minerals-related research projects, including ones which have recently ended [e.g. the European rare earth element project (EURARE; [www.eurare.eu](http://www.eurare.eu)) and the Mineral Intelligence Capacity Analysis (MICA; <http://mica.eurogeosurveys.org/>)], others which are ongoing [e.g. Solution for Critical Raw Materials – a European Expert Network (SCRREEN; <http://screen.eu/>) and Global Material Flows and Demand-Supply Forecasting for Mineral Strategies (MinFuture; <http://minfuture.eu/>)] and new projects that have just commenced [e.g. Optimising quality of information in raw materials data collection across Europe (ORAMA)].

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.

John N Ludden  
Executive Director

British Geological Survey  
Keyworth  
Nottingham

February 2018

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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, the Barytes Association and the International Fertilizer Industry Association Ltd. 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.

Supplementary information is also obtained from publications dealing with a wider range of commodities such as Société de l'Industrie Minière, *Annuaire Statistique Mondial des Minerais et Métaux*; World Bureau of Metal Statistics, *World Metal Statistics* and, *Metallstatistik*; publications of the Interstate Statistical Committee of the CIS, the United States Geological Survey, and UN agencies.

In addition, information has been obtained from the websites of the following organisations, companies, statistical offices and government departments: United Nations; BP Plc; Eurofer; Eurostat; Instituto Latinoamericano del Fierro y el Acero; World Steel Organisation; Kaolin & Plastic Clays Europe; Kimberley Process; World Nuclear Association; African Development Bank; UEPG; Agnico Eagle Mines; Altyntau; Altyntau; Anglo American; AngloGold Ashanti; ARMZ; Aura Minerals Inc; Avocet Mining Plc; Belvedere Resources; BHP Billiton; Boliden Metal Producers; Centamin; Centerra Gold; Consolidated Murchison; CZP; Dominion Salt; Dragon Mining; Dundee Precious Metals; Eagle Graphite; ElektroZinc; Endeavour Mining; Endomines; Eurasian Natural Resources Corporation; Evraz; First Quantum; Galaxy Resources; Gemfields Plc; Glencore Xstrata; Gravita; Hudson Resources Ltd; Iamgold Corporation; IRC Group; Johnson Matthey; KAZ Minerals; Kazakhmys; Kazzinc; Kenmare Resources Plc; Lappland Goldminers; Lundin Mining; Lynas Corporation; Mandalay Resources; Minerals and Metals Group; Nevsun Resources; Nickel Asia; Nordgold; Norsk Hydro; Nyrstar; Orvana Minerals; Outokumpu; Paladin Energy Ltd; PanAust Mining; Phosagro; Phosphate Resources Ltd; Polymetal International; PT Antam; Qatalum; Qatar Steel Company; RandGold Resources; Resolute Mining; Rich Metal Group; Rio Tinto; Ronphos Corporation; UC Rusal; Semafo; Sherritt International; Specialty Metals Resources; SMZ, a.s. Jelšava; South 32; Sun-gold; Talvivaara; Teranga Gold Corp; TiZir; Ural Mining and Metallurgical Company; Uralkali; Vitmetco; Weatherly International Plc; Wolf Minerals; Office National des Statistiques, Algeria; Endiama E.P., Angola; Aluar Aluminio Argentino, Argentina; Alumbreira, Argentina; Institute of Argentinean Petroleum and Gas, Argentina; Acero Argentinos; Department of Natural Resources and Mines Queensland, Australia; Northern Territory Government, Australia; Department of Mines and Energy Northern Territories, Australia; Primary Industries and Resources SA, Australia; Department of Primary Industries Victoria, Australia; Mineral Resources Tasmania, Australia; Tasmania Mines Ltd; Australia; NWS Department of Primary Industries, Australia; Bureau of Resources and Energy Economics, Australia; Department of Mines and Petroleum, Western Australia; Grafitbergbau-Kaisersberg, Austria; Vereinigung der Osterreichischen Zementindustrie, Austria; Department of Statistics of the Bahamas; Aluminium Bahrain; Petrobangla,

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### *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	2012	2013	2014	2015	2016
Bosnia & Herzegovina	800 316	657 115	605 215	787 409	641 231
Croatia	5 690	8 220	9 150	11 900	9 780
France (a)	69 500	100 000	71 000	* 70 000	* 70 000
Greece	1 816 000	1 844 000	1 876 000	1 831 000	1 880 000
Hungary	255 000	93 700	14 400	8 300	17 000
Montenegro	—	61 154	155 153	50 369	* 516 200
Russia	5 166 000	5 322 000	5 589 000	5 398 000	5 432 000
Turkey	1 521 150	795 562	1 091 442	* 1 100 000	* 1 100 000
Ghana	752 771	826 994	798 114	1 014 605	1 143 676
Guinea (b)	17 823 000	18 763 000	19 182 000	19 470 305	30 800 000
Mozambique	8 633	6 190	3 324	4 985	1 451
Sierra Leone	776 000	616 000	1 161 705	1 334 046	1 368 531
Tanzania	28 434	39 977	25 641	205	73
Dominican Republic	10 522	769 530	1 446 311	1 724 162	282 000
Jamaica	9 339 291	9 435 214	9 676 697	9 628 824	8 540 130
Mexico	96 000	—	—	—	—
USA (c)	128 152	* 100 000	* 100 000	* 100 000	* 100 000
Brazil (d)	34 987 800	33 903 800	36 313 200	37 063 900	39 244 200
Guyana	2 213 972	1 713 242	1 563 563	1 526 467	1 479 090
Suriname	2 874 312	2 670 680	2 707 719	1 865 148	—
Venezuela	2 285 949	2 346 160	2 315 787	991 810	* 900 000
China	44 052 300	50 339 383	59 212 401	60 787 600	* 68 000 000
India (e)	16 507 960	22 319 148	22 493 671	28 123 789	24 664 632
Indonesia	31 443 325	57 023 774	2 556 429	* 611 000	* 1 485 000
Iran (f)	898 437	903 559	748 297	861 604	999 400
Kazakhstan	5 170 000	5 192 800	4 515 600	4 682 600	4 802 200
Malaysia	121 873	208 770	(g)* 3 500 000	(g)* 27 700 000	(g)* 6 670 000
Pakistan (h)	30 223	25 288	31 156	24 689	57 024
Saudi Arabia	760 114	1 044 360	2 076 000	2 174 000	3 843 000
Vietnam	* 100 000	482 000	1 090 000	* 1 094 000	* 1 419 000
Australia	76 281 247	81 119 334	78 632 393	80 909 703	83 516 578
Fiji	349 556	564 777	489 476	120 726	59 500
Solomon Islands	—	—	* 40	* 280 000	* 230 000
World total	257 000 000	299 000 000	260 000 000	291 000 000	289 000 000

### Note(s)

(1) This table includes production of refractory bauxite

(a) For non-metallurgical uses

(b) No adjustment has been made for moisture content

(c) Data for Alabama only

(d) Including beneficiated and direct shipping ore

(e) Years ended 31 March following that stated

(f) Years ended 20 March following that stated

(g) Conservative BGS estimate based on reported exports

(h) Years ended 30 June of that stated

## Production of alumina

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

Country	2012	2013	2014	2015	2016
Azerbaijan	101 780	—	—	—	—
Bosnia & Herzegovina	202 416	175 961	170 646	250 845	187 515
France	430 000	430 000	400 000	432 000	* 500 000
Germany	* 1 000 000	* 1 000 000	* 1 000 000	* 1 000 000	* 1 000 000
Greece	642 880	665 512	667 070	661 330	673 056
Hungary	* 111 000	* 81 100	* 1 000	—	—
Ireland, Republic of	1 250 600	1 264 689	1 270 784	1 283 111	1 283 799
Romania	414 000	391 000	362 627	404 825	467 031
Russia	2 719 000	2 659 000	2 572 000	2 593 000	2 682 000
Spain	* 1 100 000	1 573 000	1 517 000	1 633 000	1 579 000
Turkey	* 220 000	* 186 000	* 190 000	* 190 000	* 190 000
Ukraine	1 429 000	1 493 000	1 455 000	1 481 000	1 510 000
Guinea	167 020	—	—	—	—
Canada	1 498 605	1 554 604	1 562 559	1 560 932	1 566 467
Jamaica	1 757 693	1 854 910	1 850 960	1 864 645	1 865 278
USA	4 372 000	4 324 000	4 461 000	4 234 000	* 2 500 000
Brazil	10 320 600	9 942 100	10 404 000	10 451 500	10 885 500
Suriname	1 202 806	1 149 392	1 149 388	779 660	—
Venezuela	808 043	579 874	660 195	459 488	300 600
China	37 696 300	47 749 600	52 399 100	58 979 000	60 907 000
India (a)	3 609 815	3 779 301	4 024 215	* 5 400 000	* 5 800 000
Indonesia	—	—	—	69 869	* 495 000
Iran (b)	227 000	249 000	251 000	241 000	* 248 000
Japan	* 350 000	* 250 000	* 120 000	* 20 000	* 17 000
Kazakhstan	1 510 000	1 590 000	1 628 252	1 448 280	1 500 013
Saudi Arabia	—	—	23 000	846 000	1 429 000
Vietnam	—	214 000	485 000	* 486 000	* 631 000
Australia	20 914 745	21 528 263	20 494 595	20 097 181	20 680 826
World total	94 100 000	104 700 000	109 100 000	116 900 000	118 900 000

### 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	2012	2013	2014	2015	2016
Azerbaijan	54 890	53 290	50 357	53 303	36 811
Bosnia & Herzegovina	159 660	157 191	131 238	118 253	106 649
France	349 000	343 000	415 000	415 000	424 600
Germany	410 413	492 368	530 683	541 379	546 806
Greece	165 050	169 480	173 260	179 993	182 800
Iceland	787 071	784 132	698 765	724 704	700 080
Italy	99 600	—	—	—	—
Montenegro	74 813	47 951	42 767	42 499	38 892
Netherlands	86 300	81 000	800	28 200	36 300
Norway	1 110 900	1 172 900	1 182 000	1 224 000	1 247 000
Romania	248 600	250 200	263 098	271 356	272 507
Russia	4 024 000	3 724 000	3 488 000	3 529 000	3 561 000
Slovakia	160 662	163 000	167 767	171 328	173 600
Slovenia	83 300	84 035	84 400	83 800	84 365
Spain	386 395	* 250 000	* 230 000	* 360 000	* 360 000
Sweden	129 000	131 000	113 000	116 000	124 000
Turkey	43 700	32 200	30 400	45 900	78 800
United Kingdom	60 000	45 000	41 000	48 000	46 000
Cameroon	52 000	75 000	93 000	* 65 000	* 65 000
Egypt (a)	400 061	318 459	333 178	338 000	314 600
Ghana	38 000	36 600	38 100	33 800	* 35 000
Mozambique	562 000	562 000	566 900	558 386	571 125
Nigeria	22 000	2 000	—	—	—
South Africa	665 000	822 000	745 000	695 000	701 000
Canada	2 780 556	2 967 364	2 858 238	2 880 035	3 208 707
USA	2 070 300	1 946 000	1 710 400	1 586 500	818 430
Argentina	412 692	434 758	442 719	430 388	424 700
Brazil	1 436 400	1 304 100	962 000	772 200	793 000
Venezuela	203 000	171 717	138 334	125 537	* 147 000
Bahrain	890 217	912 700	931 427	960 643	971 420
China	23 534 000	26 534 000	28 316 671	31 410 000	31 873 000
India (b)	1 720 427	1 667 300	2 026 803	2 354 949	2 896 629
Indonesia	253 000	255 300	264 400	257 100	245 000
Iran (c)	337 000	350 000	355 000	355 000	360 000
Japan	4 500	3 000	500	—	—
Kazakhstan	249 000	250 159	207 849	219 192	240 171
Malaysia	121 900	* 290 000	440 000	440 000	620 000
Oman	360 000	354 000	364 000	377 000	386 000
Qatar	627 971	634 351	640 153	637 900	643 500
Saudi Arabia	—	187 000	662 000	839 000	869 000
Tajikistan	272 506	216 369	121 261	139 123	129 300
United Arab Emirates	1 814 000	1 845 000	2 296 000	2 397 000	2 471 000
Australia	1 859 726	1 777 427	1 702 984	1 645 960	1 635 241
New Zealand	325 000	324 000	327 000	333 000	339 000
World total	49 400 000	52 200 000	54 200 000	57 800 000	58 800 000

### 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) Years ended 31 March following that stated

(c) Years ended 20 March following that stated

## Mine production of antimony

tonnes (metal content)

Country	2012	2013	2014	2015	2016
Russia	* 6 400	* 6 520	* 6 400	7 420	6 620
Turkey	7 119	4 512	3 013	1 917	* 2 000
Morocco	710	—	—	—	—
South Africa	3 044	2 332	816	400	* 1 200
Canada	100	177	5	1	0
Guatemala	62	159	—	—	25
Honduras	—	—	13	14	—
Mexico	169	294	266	90	166
Bolivia	5 081	5 053	4 186	3 843	2 669
Burma (a)	* 6 000	* 7 000	10 585	5 777	2 780
China	135 629	152 104	140 389	112 000	107 525
Iran	—	400	432	216	* 200
Kazakhstan	* 600	* 900	* 800	* 700	* 900
Kyrgyzstan	924	* 900	* 1 450	* 1 200	* 1 880
Laos	521	804	620	1 166	242
Pakistan (b)	12	89	127	114	21
Tajikistan	6 645	7 307	* 6 500	* 5 400	* 12 000
Thailand	672	488	706	* 700	32
Vietnam	480	990	1 098	219	204
Australia (b)	1 950	3 062	3 680	3 926	5 004
World total	176 000	193 000	181 000	145 000	143 000

### 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	2012	2013	2014	2015	2016
Belgium	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
Portugal	* 15	* —	* —	* —	* —
Russia	* 1 500	* 1 500	* 1 500	* 1 500	* 1 500
Morocco	8 820	8 968	6 863	7 567	* 7 000
Namibia	1 590	1 520	1 980	1 960	* 1 900
Bolivia	104	120	52	38	38
China	* 26 000	* 25 000	* 25 000	* 25 000	* 25 000
Japan	* 45	* 45	* 45	* 45	* 45

### 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	2012	2013	2014	2015	2016
Russia	* 1 000 000	* 900 000	* 800 000	650 375	691 712
Zimbabwe					
Chrysotile	30	377	—	—	—
Argentina	102	* 101	* 100	* —	* —
Brazil	304 568	290 825	311 227	* 300 000	* 300 000
China	* 420 000	* 420 000	* 410 000	* 400 000	* 400 000
India					
Amphibole (a)	389	172	—	—	—
Kazakhstan	241 000	243 300	213 100	179 800	192 500
World total	2 000 000	2 000 000	2 000 000	2 000 000	2 000 000

### Note(s)

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

(a) Years ended 31 March following that stated

## Production of barytes

tonnes (metric)

Country	2012	2013	2014	2015	2016
Bosnia & Herzegovina	28	—	—	—	—
Bulgaria	—	1 000	20 000	60 000	55 000
Georgia	—	—	500	500	400
Germany	52 030	45 446	87 585	45 311	49 373
Italy	* 3 500	* 3 500	* 3 500	* 3 500	* 3 500
Russia	* 180 000	* 180 000	* 220 000	361 000	434 000
Slovakia	21 000	24 000	21 000	20 000	25 000
Turkey	* 250 000	* 250 000	* 340 000	* 310 000	* 240 000
United Kingdom	30 000	* 30 000	* 44 000	* 50 000	* 56 000
Algeria	36 000	30 250	56 829	44 000	* 44 000
Egypt (a)	* 3 700	3 821	3 379	* 3 500	* 3 500
Morocco	1 021 400	1 094 500	1 006 600	1 212 130	550 000
Nigeria	* 6 000	* 6 000	* 6 000	* 6 000	* 6 000
Tunisia	11 000	5 300	9 800	* 10 000	* 10 000
Zimbabwe	100	300	300	500	200
Canada	22 000	22 000	35 000	32 000	32 000
Guatemala	91	343	43	544	500
Mexico	139 997	343 585	130 914	265 700	150 970
USA (b)	666 000	723 000	663 000	425 000	* 316 000
Argentina	9 416	25 744	16 300	* 17 000	* 17 000
Bolivia	20 400	30 476	26 240	46 732	16 632
Brazil	49 100	* 41 400	* 41 400	* 50 000	* 40 000
Colombia	* 2 000	2 039	3 414	3 535	2 557
Peru	79 451	52 491	106 071	28 407	7 953
Afghanistan	300	400	500	* 500	* 500
Burma (c)	21 539	31 295	23 060	2 836	3 215
China	4 400 000	3 500 000	4 100 000	3 500 000	3 100 000
India (c)	1 789 431	1 170 522	910 963	* 700 000	* 1 300 000
Iran (d)	314 769	435 798	440 741	405 038	* 400 000
Kazakhstan	590 000	530 200	200 000	210 000	190 000
Laos	23 000	27 000	46 000	92 000	82 000
Malaysia	—	500	14 456	—	—
Pakistan (a)	48 510	118 471	133 658	118 773	157 858
Saudi Arabia	32 000	30 000	32 000	43 000	—
Thailand	64 499	107 437	134 961	170 621	223 100
Vietnam	90 000	90 000	140 000	80 000	50 000
Australia	10 273	13 176	14 676	6 016	7 139
World total	10 000 000	9 000 000	9 000 000	8 300 000	7 600 000

### 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	2012	2013	2014	2015	2016
Armenia					
Bentonite	4 987	15 387	798	1 592	5 543
Azerbaijan					
Bentonite	36 700	91 958	76 512	56 825	54 545
Bosnia & Herzegovina					
Bentonite (a)	—	18 808	80 952	67 261	102 858
Bulgaria					
Bentonite	77 900	—	41 100	61 600	37 100
Cyprus					
Bentonite	160 180	158 386	140 174	127 036	117 184
Czech Republic					
Bentonite	221 000	226 000	301 000	369 000	374 000
Denmark					
Bentonite	30 330	56 355	66 388	54 272	66 278
France					
Bentonite	28 000	25 000	20 000	* 20 000	* 20 000
Germany					
Bentonite	366 220	358 844	394 657	393 000	393 000
Greece					
Bentonite	1 235 105	1 000 000	1 011 485	1 150 000	930 000
Attapulgitite	19 870	32 400	45 000	108 000	44 500
Hungary					
Bentonite	1 392	7 397	10 463	11 420	* 11 000
Italy					
Bentonite	95 757	20 129	20 658	12 840	45 978
Macedonia					
Bentonite	2 355	18 520	11 691	9 004	1 968
Poland					
Bentonite	780	1 050	1 650	450	1 000
Romania					
Bentonite	19 241	24 127	18 583	19 355	24 996
Russia					
Bentonite	* 460 000	* 460 000	* 460 000	497 900	589 000
Slovakia					
Bentonite	177 000	184 000	205 000	205 000	158 000
Slovenia					
Bentonite	98	143	199	232	182
Spain					
Bentonite	96 605	102 726	105 627	100 604	105 900
Attapulgitite	23 537	26 764	26 798	26 188	28 789
Sepiolite	622 372	599 352	555 581	524 915	500 000
Turkey					
Bentonite	1 033 568	622 872	1 088 444	3 134 911	1 210 000
Sepiolite	* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
Ukraine					
Bentonite	219 000	* 219 000	* 219 000	* 219 000	* 219 000
Algeria					
Bentonite	26 000	27 670	31 510	34 100	* 34 000
Angola					
Fuller's earth	35 492	98 084	* 98 000	...	...
Egypt					
Bentonite (b)	4 594	2 523	3 615	* 3 600	* 3 600
Kenya					
Bentonite	75	80	110	* 110	* 110
Morocco					
Bentonite	91 200	105 240	98 757	92 290	* 90 000
Fuller's earth (c)	81 800	59 000	* 60 000	* 60 000	* 60 000
Mozambique					
Bentonite	846	93	739	350	322
Senegal					
Attapulgitite	180 500	234 600	191 400	188 400	172 300
South Africa					
Bentonite	120 566	177 187	169 591	163 696	148 742
Attapulgitite	15 850	21 233	18 376	18 280	16 374



## Production of bentonite and fuller's earth

tonnes (metric)

Country	2012	2013	2014	2015	2016
Canada					
Bentonite (d)	2 015	3 451	2 083	583	468
Cuba					
Bentonite	668	335	700	500	389
Guatemala					
Bentonite	16 183	18 377	38 368	31 582	18 081
Mexico					
Bentonite	956 224	826 887	519 625	294 236	* 290 000
Fuller's earth	227 496	306 507	245 147	108 215	* 108 000
USA					
Bentonite (e)	4 980 000	4 350 000	4 800 000	4 040 000	* 3 800 000
Fuller's earth (e)	1 980 000	1 990 000	1 990 000	1 930 000	* 1 850 000
Argentina					
Bentonite	193 795	262 895	* 225 000	* 200 000	* 200 000
Bolivia					
Bentonite	745	182	886	1 023	525
Brazil					
Bentonite	512 975	403 351	405 169	* 400 000	* 400 000
Chile					
Bentonite	893	3 313	1 083	1 434	1 288
Colombia					
Bentonite	* 8 500	9 056	* 9 000	* 9 000	* 9 000
Peru					
Bentonite	22 977	47 743	37 375	21 341	19 246
Uruguay					
Bentonite	5 530	8 974	7 800	4 250	* 4 250
Burma					
Bentonite (f)	* —	* 1 000	—	700	600
China					
Bentonite	* 3 500 000	* 3 600 000	* 3 650 000	* 3 650 000	* 3 650 000
India					
Bentonite (f)	* 1 188 000	* 1 305 000	* 1 371 000	* 1 457 000	* 1 745 000
Fuller's earth (f)	* 5 600	* 5 600	* 5 600	* 5 600	* 5 600
Indonesia					
Bentonite	* 7 000	* 6 000	* 6 000	* 6 000	* 6 000
Iran					
Bentonite (g)	430 231	502 155	403 008	486 840	600 000
Iraq					
Bentonite	6 530	6 288	* 6 300	* 6 300	* 6 300
Japan					
Bentonite	* 420 000	* 420 000	* 420 000	* 420 000	* 420 000
Korea (Rep. of)					
Bentonite	88 543	80 188	71 850	78 439	63 834
Fuller's earth	57 787	51 309	54 001	87 094	81 688
Pakistan					
Bentonite (b)	16 520	26 077	40 374	23 283	41 506
Fuller's earth (b)	6 906	4 259	6 397	8 005	13 740
Philippines					
Bentonite	2 699	3 329	3 369	3 477	3 231
Thailand					
Bentonite	81 000	150 000	* 150 000	* 150 000	* 150 000
Uzbekistan					
Bentonite	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
Australia					
Bentonite (b)	* 82 100	* 105 900	* 66 300	* 70 600	* 91 500
Fuller's earth	* 10 000	10 543	10 176	16 216	12 200
New Zealand					
Bentonite	2 263	762	* 750	* 750	* 750
World total bentonite	17 100 000	16 100 000	16 900 000	18 200 000	16 300 000
World total fuller's earth (a)	3 300 000	3 400 000	3 300 000	3 100 000	2 900 000

See notes on 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 to attapulgite, 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) Including attapulgite and sepiolite
  - (b) Years ended 30 June of that stated
  - (c) Smectite
  - (d) Sales
  - (e) Sold or used by producers
  - (f) Years ended 31 March following that stated
  - (g) Years ended 20 March following that stated

## Production of beryl

tonnes (metric)

Country	2012	2013	2014	2015	2016
Madagascar (a)	16	* 85	* 135	* 135	* 135
Mozambique	532	103	3	312	181
Zambia	5	5	4	7	5
USA (b)	5 570	5 910	6 900	5 100	* 5 000
China	* 500	* 500	* 500	* 500	* 500

### 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	2012	2013	2014	2015	2016
Armenia	4	4	* 4	* 4	* 4
Bulgaria	1	3	—	—	—
Russia	* 45	* 45	* 45	* 45	* 45
Canada	121	35	3	2	2
Mexico	800	824	948	601	539
Bolivia	10	—	11	20	43
China	2 494	1 393	1 490	* 1 300	* 1 100
Japan (a)	446	485	582	568	409
Vietnam	—	—	646	1 510	* 1 700
World total	3 900	2 800	3 700	4 100	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.

(a) Metal production

## Production of borates

tonnes (metric)

Country	2012	2013	2014	2015	2016
Russia	* 400 000	* 250 000	* 250 000	* 80 000	* 80 000
Turkey	1 814 725	1 748 231	3 143 175	2 180 976	* 2 000 000
USA (a)	* 1 300 000	* 1 300 000	* 1 300 000	* 1 300 000	* 1 300 000
Argentina	479 412	426 000	* 600 000	* 480 000	* 520 000
Bolivia	142 532	164 803	168 187	166 451	199 924
Chile	444 487	580 528	496 533	517 584	558 854
Peru	104 072	224 454	239 725	662 709	33 792
China (b)	* 160 000	* 160 000	* 160 000	* 160 000	* 160 000
Iran (c)	2 500	2 330	1 383	675	* 700
Kazakhstan	* 30 000	* 30 000	* 30 000	* 500 000	* 510 000

### 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	2012	2013	2014	2015	2016
Germany	* 1 600 000	* 1 500 000	* 1 500 000	* 1 500 000	* 1 500 000
Ukraine	* 4 100 000	* 4 100 000	* 3 500 000	* 3 500 000	* 3 500 000
USA (a)	* 225 000 000	* 225 000 000	* 225 000 000	* 225 000 000	* 225 000 000
China	* 105 000 000	* 110 000 000	* 110 000 000	* 100 000 000	* 95 000 000
India (b)	1 773 010	2 131 260	2 196 270	2 439 390	2 717 210
Israel	173 940 000	172 341 000	173 796 000	115 583 000	161 986 000
Japan	* 20 000 000	* 20 000 000	* 20 000 000	* 20 000 000	* 20 000 000
Jordan	* 60 000 000	* 80 000 000	* 100 000 000	* 100 000 000	* 100 000 000
Turkmenistan	* 480 000	* 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	2012	2013	2014	2015	2016
Bulgaria	360	411	382	344	350
Germany	* 400	* 400	* 400	* 400	* 400
Netherlands	* 560	* 610	* 620	* 620	* 620
Norway	* 310	* 310	* 310	* 310	* 335
Poland	370	460	628	383	319
Russia	1 000	900	* 1 200	* 1 300	* 1 700
Turkey	—	12	—	—	—
Canada (a)	1 286	1 313	1 187	1 159	2 305
Mexico	1 482	1 451	1 409	1 283	1 244
USA (a)	* 600	* 600	* 550	* 500	* 400
Argentina	37	28	30	39	—
Brazil	* 200	* 200	* 200	* 200	* 200
Peru	684	695	769	757	820
China	7 265	7 496	8 201	8 162	* 8 100
India (b)	391	228	69	—	35
Japan	1 856	1 821	2 039	2 188	2 170
Kazakhstan	1 166	1 335	1 633	1 475	2 682
Korea (Rep. of)	3 904	3 904	5 645	* 5 600	4 600
Korea, Dem. P.R. of	* 200	* 200	* 200	* 200	* 200
World total	22 100	22 400	25 500	24 900	26 500

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	2012	2013	2014	2015	2016
Albania	365 749	529 592	683 874	639 909	712 694
Finland (a)	425 217	981 752	1 034 750	946 188	1 070 281
Kosovo	2 860	8 950	12 700	—	—
Russia	552 000	360 000	380 000	503 000	* 503 000
Turkey	3 295 398	4 140 655	6 611 394	* 6 600 000	* 6 600 000
Madagascar	110 000	58 100	53 657	88 560	71 043
South Africa	11 310 223	13 644 699	14 037 722	15 684 481	14 705 180
Sudan	18 300	30 870	60 000	15 813	* 16 000
Zimbabwe	408 476	355 142	408 422	208 328	112 026
Brazil	472 501	485 951	716 674	* 700 000	* 700 000
Afghanistan	4 678	5 040	* 4 500	* 4 500	* 4 500
China	* 123 000	* 105 000	* 24 000	* 20 000	* 20 000
India (b)	2 833 895	2 878 320	2 164 163	2 915 584	3 727 777
Iran (c)(d)	411 566	344 169	359 332	276 570	* 275 000
Kazakhstan	5 233 000	5 255 000	5 410 700	5 382 800	5 545 700
Oman	554 800	787 700	751 200	442 600	450 800
Pakistan	* 500 000	* 490 000	* 350 000	* 330 000	* 230 000
Philippines (c)	36 628	26 164	47 056	15 502	25 745
Vietnam	* 1 800	* 24 800	* —	* —	* —
Australia	452 300	355 200	—	—	—
World total	27 100 000	30 900 000	33 100 000	34 800 000	34 800 000

### 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

## Production of coal

tonnes (metric)

Country	2012	2013	2014	2015	2016
Albania					
Lignite	—	—	—	100	2 000
Bosnia & Herzegovina					
Brown coal & lignite	12 311 623	11 764 827	11 673 320	12 111 830	13 488 147
Bulgaria					
Anthracite & Bituminous	—	—	16 500	—	10
Lignite	31 040 700	26 459 300	29 127 500	33 773 000	29 294 200
Brown coal	2 556 700	2 301 500	2 228 800	2 165 100	2 140 000
Czech Republic					
Bituminous	10 796 000	8 610 000	8 341 000	7 640 000	6 074 000
Brown coal	43 710 000	40 585 000	38 348 000	38 251 000	38 646 000
Georgia	424 998	404 187	299 314	305 870	339 760
Germany					
Anthracite & Bituminous	11 558 000	8 260 000	8 340 000	6 650 000	3 930 000
Brown coal	185 432 000	182 995 337	178 154 848	178 065 353	171 546 550
Greece					
Lignite	62 368 800	55 500 000	50 411 000	46 308 000	32 669 000
Hungary					
Bituminous	—	—	11	5 687	748
Lignite	8 438 000	8 834 000	8 918 000	9 095 000	9 164 000
Brown coal	875 944	718 700	635 700	162 490	80 000
Kosovo					
Lignite	8 028 397	8 219 393	7 204 211	8 240 694	8 800 848
Macedonia					
Lignite	7 309 546	6 633 560	6 469 819	5 927 749	5 101 758
Montenegro					
Lignite	1 706 302	1 692 535	1 655 045	1 752 758	1 349 729
Norway					
Bituminous (a)	1 325 000	2 135 000	1 701 000	1 203 000	962 000
Poland					
Bituminous	79 854 904	68 399 000	65 696 000	65 070 000	66 484 000
Lignite	64 297 772	66 139 000	64 002 000	63 135 000	60 273 000
Romania					
Anthracite & Bituminous	1 876 062	1 839 667	1 619 347	1 418 596	* 1 200 000
Lignite	31 529 377	22 902 291	23 144 539	25 245 677	22 976 000
Brown coal	17 700	—	—	—	—
Russia	354 000 000	347 000 000	356 000 000	372 000 000	385 000 000
Serbia					
Bituminous	141 000	160 000	121 000	123 000	105 000
Lignite (b)	37 707 017	39 752 741	29 340 000	37 308 043	(c) 38 744 000
Brown coal	316 507	340 892	354 000	351 116	...
Slovakia					
Lignite	136 000	179 000	166 000	97 000	195 000
Brown coal	1 964 000	2 009 000	1 885 000	1 636 000	1 622 000
Slovenia					
Lignite	3 967 064	3 721 188	3 108 203	3 168 001	3 348 889
Brown coal	314 262	50 744	—	—	—
Spain					
Anthracite	2 514 649	759 930	1 263 585	1 113 336	362 608
Bituminous	1 823 343	1 814 328	1 343 617	610 395	310 270
Sub-bituminous	1 826 680	1 870 569	1 347 849	1 318 625	376 250
Turkey					
Anthracite	3 235 299	2 789 338	1 916 833	2 074 049	* 2 000 000
Lignite	78 014 194	66 310 998	71 082 623	58 330 354	* 58 000 000
Ukraine					
Bituminous	65 705 000	64 427 000	45 932 000	29 917 000	* 29 900 000
Lignite	* 175 000	* 175 000	* 175 000	* 175 000	* 175 000
United Kingdom					
Bituminous (d)	16 287 000	12 673 000	11 648 000	8 598 000	4 178 000
Botswana	1 454 724	1 495 653	1 711 555	2 065 778	1 873 547
Congo, Democratic Republic					
Bituminous	—	4 800	3 700	4 400	* 4 400
Egypt (e)	315 953	* 300 000	* 300 000	* 300 000	* 300 000
Ethiopia					
Lignite	* 20 000	* 20 000	* 20 000	* 34 000	* 34 000
Malawi	70 552	67 024	63 673	58 774	43 338

# Production of coal

tonnes (metric)

Country	2012	2013	2014	2015	2016
Mozambique					
Bituminous	4 900 000	* 5 500 000	* 8 500 000	* 8 600 000	5 500 000
Niger	235 072	241 792	255 936	221 024	246 631
Nigeria					
Sub-bituminous	36 300	39 916	321 140	121 560	* 120 000
South Africa					
Anthracite	3 005 136	3 621 283	3 516 573	3 395 505	2 612 215
Bituminous	255 570 657	252 660 850	257 881 954	248 680 484	248 399 455
Swaziland					
Anthracite	152 284	257 090	177 931	141 732	158 419
Tanzania					
Bituminous	78 672	84 772	249 495	255 884	278 701
Zambia					
Bituminous	51 710	175 994	158 757	103 439	126 050
Zimbabwe					
Bituminous	1 593 600	3 114 200	5 782 600	4 336 100	1 635 800
Canada					
Coal	...	...	69 036 000	61 931 000	60 978 000
Bituminous	35 374 000	38 283 000	...	...	...
Sub-bituminous	21 625 000	21 657 000	...	...	...
Lignite	9 496 000	8 969 000	...	...	...
Mexico					
Bituminous	16 276 556	15 717 587	15 874 413	9 024 197	* 9 000 000
USA					
Anthracite (f)	2 148 000	1 944 097	1 766 289	1 944 000	1 510 000
Bituminous (f)	440 321 000	427 450 027	435 440 500	366 241 366	293 346 350
Sub-bituminous	436 395 960	393 978 539	397 912 999	380 577 606	299 591 410
Lignite	71 602 574	70 060 970	72 109 393	64 929 000	66 313 390
Argentina					
Bituminous	246 000	183 000	* 300 000	* 300 000	* 300 000
Brazil					
Bituminous & lignite (g)	6 440 998	8 009 895	7 696 154	6 353 656	6 800 000
Chile					
Bituminous	141 120	144 313	194 747	157 017	114 887
Lignite	570 594	2 758 131	3 973 438	3 004 709	2 410 284
Colombia					
Bituminous	89 024 321	85 496 062	88 577 980	85 547 514	90 512 694
Peru					
Anthracite & Bituminous	226 908	211 885	229 213	251 788	266 236
Venezuela					
Bituminous	1 910 801	1 229 309	800 640	801 697	* 800 000
Afghanistan					
Bituminous	14 500	16 000	18 000	* 18 000	* 18 000
Bangladesh (e)	861 072	854 804	942 796	675 776	1 021 638
Bhutan	98 731	77 744	121 891	85 164	117 783
Burma (h)	471 022	380 272	388 732	419 862	549 838
China	3 945 128 000	3 974 322 000	3 874 000 000	3 747 000 000	3 363 986 000
India					
Bituminous (h)	556 402 000	565 765 000	609 200 000	639 230 000	660 402 000
Lignite (h)	46 453 000	44 271 000	48 300 000	43 842 000	45 124 000
Indonesia					
Anthracite & Bituminous	386 077 357	474 371 369	458 096 707	461 566 080	456 197 775
Iran					
Bituminous (i)	831 000	1 183 000	1 434 000	1 470 000	1 500 000
Kazakhstan					
Bituminous	112 780 000	113 349 000	107 669 100	101 792 500	97 081 100
Lignite	7 748 000	6 511 000	6 893 500	5 525 700	5 302 800
Korea (Rep. of)					
Anthracite	2 094 000	1 814 000	1 748 000	1 764 000	1 727 000
Korea, Dem. P.R. of	41 492 000	* 42 000 000	* 41 000 000	* 41 000 000	* 41 000 000
Kyrgyzstan	1 163 900	1 407 900	1 777 400	1 869 900	* 1 869 900
Laos	510 100	508 185	131 884	* 132 000	* 132 000
Malaysia	2 951 124	2 907 963	2 667 764	2 559 444	1 332 600
Mongolia	31 139 000	33 341 000	24 449 000	23 979 000	35 096 500

## Production of coal

tonnes (metric)

Country	2012	2013	2014	2015	2016
Nepal					
Sub-bituminous (j)	10 904	14 084	8 151	7 399	2 900
Pakistan (e)(k)	3 178 986	2 813 079	3 340 192	3 407 659	3 749 312
Philippines					
Bituminous	7 348 647	7 100 033	7 601 260	7 377 639	11 211 254
Tajikistan	412 000	515 600	878 100	1 041 900	1 361 400
Thailand					
Lignite	18 652 557	18 110 763	17 991 362	15 150 549	17 491 596
Uzbekistan					
Bituminous	232 239	56 245	47 173	* 47 000	* 47 000
Lignite	3 803 825	3 972 561	4 352 672	* 4 350 000	* 4 350 000
Vietnam					
Anthracite	42 083 000	41 064 000	41 086 000	41 664 000	38 527 000
Australia					
Bituminous (l)	381 045 000	411 313 000	441 519 000	441 086 000	443 883 000
Brown coal (e)	69 124 000	59 854 000	58 001 000	60 957 000	59 757 000
New Zealand					
Bituminous	2 276 300	2 279 300	1 948 000	1 399 800	1 205 400
Sub-bituminous	2 324 000	2 055 700	1 727 700	1 665 700	1 448 700
Lignite	325 900	290 400	316 700	324 100	313 000
World total	8 200 000 000	8 225 000 000	8 164 000 000	7 925 000 000	7 388 000 000

### 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) 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 brown coal

(d) Including anthracite

(e) Years ended 30 June of that stated

(f) Includes a small amount of refuse recovery

(g) Including beneficiated and directly shipped material

(h) Years ended 31 March following that stated

(i) Years ended 20 March following that stated

(j) Years ended 15 July of that shown

(k) Including lignite

(l) Including sub-bituminous



## Mine production of cobalt

tonnes (metal content)

Country	2012	2013	2014	2015	2016
Finland	1 381	2 061	2 104	2 119	2 308
Poland	1 770	1 660	1 640	1 730	1 670
Russia (a)	2 186	2 368	2 302	2 040	2 100
Botswana	195	248	196	316	248
Congo, Democratic Republic	86 433	76 593	75 560	83 529	68 822
Madagascar	718	2 340	3 221	3 920	3 370
Morocco (a)	1 314	1 353	1 391	1 722	2 081
South Africa (a)	1 102	1 294	1 332	1 362	1 101
Uganda (a)	556	181	—	—	—
Zambia (a)	5 665	5 658	4 317	2 997	4 725
Zimbabwe	195	319	358	355	409
Canada	6 676	7 168	6 907	7 489	6 969
Cuba	3 792	3 319	3 210	3 734	3 694
USA	—	—	120	760	* 690
Brazil	2 900	3 500	3 838	* 3 800	* 3 600
China	7 498	8 580	9 619	10 093	* 10 500
Indonesia	* 3 600	* 4 700	* 329	* 350	* 350
Philippines	2 269	2 126	4 094	4 140	2 554
Vietnam	—	—	223	277	134
Australia (b)	5 411	6 837	6 252	6 777	6 012
New Caledonia	3 026	3 640	4 681	5 098	4 350
Papua New Guinea	469	1 013	2 134	2 505	2 191
World total	137 000	135 000	134 000	145 000	128 000

### Note(s)

- (1) There is frequently a considerable disparity between the cobalt content of ore raised and cobalt actually recovered  
(2) Figures in this table relate either to cobalt recovered or to cobalt contained in ore raised. In many countries it is not clear whether cobalt that is known to exist in extracted ore is recovered.

(a) Metal and/or refined

(b) Years ended 30 June of that stated

## Production of refined cobalt

tonnes (metric)

Country	2012	2013	2014	2015	2016
Belgium (a)	4 200	5 415	5 850	6 306	6 329
Finland	10 562	10 798	12 551	9 615	12 393
France	326	308	219	133	119
Norway	2 969	3 348	3 582	3 117	3 541
Russia	2 186	2 368	2 302	2 040	2 100
Congo, Democratic Republic (b)	2 999	3 000	3 300	3 300	400
Madagascar	493	2 083	2 915	3 464	3 273
Morocco	1 314	1 353	1 391	1 722	2 081
South Africa (c)	1 102	1 294	1 332	1 362	1 101
Uganda	556	291	—	—	—
Zambia	5 665	5 658	4 317	2 997	4 725
Canada (d)	5 994	5 602	5 491	6 126	6 355
Brazil	1 750	1 871	1 350	1 300	400
China (a)	29 784	36 062	39 292	48 719	45 046
India	800	295	* 100	* 150	* 100
Japan	2 542	2 747	3 654	4 259	4 305
Australia	4 769	4 981	5 419	5 150	3 200
New Caledonia (e)	151	503	435	1 568	2 531

### 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	2012	2013	2014	2015	2016
Albania	5 691	5 087	3 503	2 106	218
Armenia	40 908	48 891	50 952	83 634	102 962
Azerbaijan	502	327	784	969	1 941
Bulgaria (a)	118 255	115 149	108 323	111 746	109 702
Cyprus	4 328	3 631	3 088	2 121	1 754
Finland	25 446	38 763	42 790	41 085	47 488
Georgia	6 800	10 000	6 800	13 000	14 000
Macedonia	10 600	11 700	9 600	11 400	10 200
Poland	427 064	428 879	421 285	426 196	424 000
Portugal	74 043	77 236	75 433	83 081	74 453
Romania	5 902	7 600	8 100	4 400	8 400
Russia	582 900	655 900	691 500	711 400	684 500
Serbia	32 200	36 200	33 739	29 827	41 300
Slovakia	31	40	46	58	* 46
Spain	99 894	104 600	103 900	112 690	182 500
Sweden	82 422	82 904	79 345	75 125	78 992
Turkey	104 300	120 500	122 000	108 000	* 100 000
Botswana	35 768	48 500	47 700	9 162	12 415
Congo, Democratic Republic	619 942	922 016	1 030 129	1 039 007	1 023 687
Eritrea	—	21 800	88 900	61 600	25 300
Mauritania	37 670	37 970	33 079	45 001	32 820
Morocco	14 750	11 575	16 579	19 903	23 586
Namibia	5 304	4 896	5 249	14 010	16 653
South Africa	88 800	80 821	78 697	77 360	65 257
Tanzania	5 840	5 740	6 363	6 795	7 109
Zambia	695 200	759 800	707 100	719 200	774 300
Zimbabwe	6 665	8 285	8 261	8 218	9 101
Canada	580 082	652 595	672 729	714 647	707 605
Dominican Republic	11 737	10 379	9 262	7 324	9 836
Mexico	500 275	480 124	515 025	594 451	766 129
USA	1 166 800	1 278 000	1 384 700	1 416 300	1 461 900
Argentina	135 700	109 600	102 600	61 800	81 900
Bolivia	8 700	7 549	10 746	9 479	8 718
Brazil	223 141	270 979	301 197	359 463	337 600
Chile	5 433 900	5 776 000	5 761 100	5 772 100	5 552 600
Colombia	781	659	3 991	5 805	* 8 500
Ecuador	1 800	2 600	3 200	3 200	* 2 000
Peru	1 298 761	1 375 641	1 377 642	1 700 817	2 353 859
Burma	* 25 000	* 33 000	* 42 000	* 71 000	* 95 000
China	1 576 800	1 715 150	1 776 794	1 770 000	1 850 000
India (b)	29 281	32 194	24 889	35 120	31 176
Indonesia	398 100	509 300	377 100	577 400	786 000
Iran	245 500	222 900	216 800	246 400	289 300
Kazakhstan	426 800	454 400	471 700	473 600	474 800
Korea, Dem. P.R. of	* 17 000	* 15 000	* 15 000	* 16 000	* 23 000
Kyrgyzstan	—	—	700	3 100	8 200
Laos	149 580	154 915	159 696	167 702	177 939
Mongolia	123 900	189 000	252 000	314 000	508 000
Oman	19 684	10 906	13 699	7 828	—
Pakistan	* 23 900	* 20 700	* 18 000	* 16 000	* 14 000
Philippines	65 444	90 861	91 824	83 835	83 649
Saudi Arabia	4 410	5 095	10 848	14 032	38 779
Uzbekistan	95 600	* 100 000	* 100 000	* 100 000	* 100 000
Vietnam	12 716	12 958	20 296	22 524	21 980
Australia	921 390	1 000 999	978 534	995 881	948 135
Papua New Guinea	125 326	105 523	75 901	45 185	80 022
World total	16 800 000	18 300 000	18 600 000	19 400 000	20 700 000

### Note(s)

(a) Metal content of ore

(b) Years ended 31 March following that stated

## Smelter production of copper

tonnes (metric)

Country	2012	2013	2014	2015	2016
Armenia	10 075	10 771	9 814	11 601	12 920
Bulgaria	269 100	294 000	305 000	301 600	264 000
Finland	129 256	135 840	146 542	141 474	145 189
Germany	352 400	289 900	349 700	338 300	342 800
Norway	37 891	37 461	35 813	35 477	28 123
Poland	466 715	458 789	503 111	514 774	* 460 000
Russia	646 000	650 000	664 000	661 000	894 000
Serbia	32 200	33 300	30 700	43 000	70 000
Spain	270 200	212 000	285 400	286 300	292 300
Sweden	151 100	137 200	145 300	137 400	131 500
Turkey	* 35 500	* 35 800	* 35 100	* 35 000	* 35 000
Namibia	27 767	24 354	35 042	44 504	40 181
South Africa	55 300	69 900	58 500	60 900	51 000
Zambia (a)	519 200	520 300	525 800	648 800	698 100
Zimbabwe	* 5 000	* 5 000	* 5 000	* —	* —
Canada	287 051	254 509	288 699	281 416	304 349
Mexico	260 900	220 800	258 000	256 300	260 000
USA	485 300	516 500	522 000	527 000	563 000
Brazil	170 400	202 800	213 085	157 800	215 500
Chile	1 342 400	1 358 300	1 356 200	1 496 200	1 490 800
Peru	290 088	412 966	314 615	327 909	309 469
China	3 601 400	4 228 919	5 167 900	5 500 000	5 798 000
India	695 400	617 000	766 000	792 600	769 800
Indonesia	198 400	217 700	236 900	199 700	255 700
Iran	173 100	154 600	156 500	153 500	153 400
Japan	1 274 690	1 261 348	1 323 500	1 243 813	1 289 885
Kazakhstan	341 700	325 600	283 900	384 500	379 000
Korea (Rep. of)	477 300	478 800	500 000	511 200	510 000
Korea, Dem. P.R. of	* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
Oman	721	4 200	2 300	1 300	3 481
Pakistan (b)	20 201	15 285	* 16 000	* 15 000	* 14 000
Philippines	97 000	160 000	153 200	189 200	215 000
Uzbekistan	* 90 000	* 90 000	* 100 000	* 100 000	* 100 000
Vietnam	* 8 000	* 9 700	* 9 700	* 11 000	* 11 000
Australia	422 398	445 520	468 468	432 843	445 202
World total	13 300 000	13 900 000	15 300 000	15 900 000	16 600 000

### 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

(b) Years ended 30 June of that stated

## Production of refined copper

tonnes (metric)

Country	2012	2013	2014	2015	2016
Austria	113 600	82 842	83 200	102 900	103 215
Belgium	397 100	389 400	387 300	378 600	366 700
Bulgaria	226 000	230 100	234 000	230 000	216 000
Cyprus	4 328	3 631	3 088	2 121	1 754
Finland	129 256	135 840	146 542	141 474	145 189
Germany	682 132	677 600	674 000	678 100	671 400
Italy	7 700	4 900	7 900	7 300	6 600
Macedonia	1 100	1 900	1 700	2 268	1 396
Norway	37 891	37 461	35 813	35 477	28 123
Poland	565 834	565 155	576 876	574 310	535 596
Russia	889 400	875 500	890 800	875 700	867 300
Serbia	34 700	35 800	33 175	44 000	71 111
Spain	406 600	351 000	418 500	419 900	429 400
Sweden	214 050	206 193	217 337	206 059	207 220
Turkey	59 673	* 74 000	* 71 300	84 000	* 64 000
Ukraine	24 000	16 500	15 200	18 500	27 100
Congo, Democratic Republic	448 300	633 800	776 900	795 500	713 400
Egypt	* 4 000	* 4 000	* 4 000	* 4 000	* 4 000
Namibia	—	—	—	10 659	16 391
South Africa	66 416	75 400	57 700	59 800	63 900
Zambia	530 200	567 800	499 400	495 600	426 400
Zimbabwe	* 5 000	* 5 000	* 5 000	* —	* —
Canada	275 990	321 511	325 352	330 902	312 324
Mexico	376 900	355 100	397 700	434 100	452 600
USA	1 001 000	1 040 000	1 090 000	1 140 000	1 220 000
Argentina	* 16 000	* 16 000	* 14 000	* 14 000	* 14 000
Bolivia	904	1 271	1 810	1 789	2 199
Brazil	210 700	261 950	236 685	359 848	225 000
Chile	2 902 000	2 754 900	2 729 400	2 688 400	2 612 500
Peru	311 293	361 450	347 398	352 960	331 324
Burma	* 19 000	* 25 000	* 33 200	65 041	92 560
China	5 879 100	6 667 096	7 649 050	7 962 000	8 436 000
India (a)	493 519	644 193	762 176	790 372	787 657
Indonesia	197 200	214 300	231 800	198 400	241 700
Iran (b)	213 000	188 000	194 000	194 000	200 000
Japan	1 516 354	1 468 123	1 554 224	1 483 131	1 553 133
Kazakhstan	367 161	350 837	294 808	394 641	406 802
Korea (Rep. of)	591 000	604 000	604 000	644 603	644 788
Korea, Dem. P.R. of	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Laos	86 295	90 030	88 541	89 253	78 714
Mongolia	2 282	2 598	2 132	2 600	2 600
Oman	721	4 200	2 300	1 300	3 481
Philippines	98 400	153 000	* 130 000	* 150 000	* 185 000
Thailand	486	203	229	187	—
Uzbekistan	* 90 000	* 90 000	* 100 000	* 100 000	* 100 000
Vietnam	* 8 000	* 9 700	* 10 000	11 000	* 11 000
Australia	460 390	480 775	511 252	474 963	474 954
World total	20 000 000	21 100 000	22 500 000	23 100 000	23 400 000

### 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 31 March following that stated  
(b) Years ended 20 March following that stated

## Production of diamond

Carats

Country	2012	2013	2014	2015	2016
Russia	34 927 650	37 884 140	38 303 500	41 912 390	40 322 030
Angola	8 330 996	8 601 696	8 791 340	9 018 942	9 021 767
Botswana	20 478 000	22 597 000	24 658 000	20 824 000	20 954 000
Cameroon (a)	* 5 000	* 5 000	* 6 000	* 4 500	* 3 000
Central African Republic	365 917	(b) ...	(b) ...	(b) ...	10 957
Congo	51 588	56 495	53 163	40 057	12 107
Congo, Democratic Republic	19 154 000	16 653 000	14 689 000	14 284 000	12 377 000
Ghana	215 118	159 074	241 235	174 364	141 530
Guinea	266 800	202 365	164 059	166 880	112 796
Ivory Coast	—	—	1 074	14 925	20 235
Lesotho	478 926	414 013	346 017	304 232	342 014
Liberia	34 271	47 819	74 882	65 996	62 827
Namibia	1 665 684	1 776 260	1 897 872	1 774 509	1 584 168
Sierra Leone	532 560	604 740	594 422	500 050	549 502
South Africa	7 245 403	8 168 113	8 060 373	8 232 627	8 450 758
Tanzania	127 174	179 633	252 875	216 491	226 599
Togo	456	24	23	46	—
Zimbabwe	12 060 163	10 411 818	4 771 637	3 490 881	2 102 873
Canada	10 529 215	10 561 600	12 082 000	11 677 472	11 103 500
Brazil	46 292	49 166	56 923	31 826	183 500
Guyana	40 763	63 961	99 950	118 451	139 890
China	* 1 855	* 1 050	* —	* —	* 127
India (c)	31 988	37 517	36 107	36 044	36 516
Australia	8 625 996	11 481 749	9 288 118	13 560 795	13 958 000
World total	125 200 000	130 000 000	124 500 000	126 400 000	121 700 000

### 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.
- (3) Production of diamond from Ivory Coast was under United Nations sanctions from 2004 to 2013. It is believed illegal production continued during this period but it is not possible to estimate the quantity involved.

- (a) Including artisanal production
- (b) Under temporary suspension by the Kimberley Process and not trading in rough diamonds; however it is unclear whether production was actually zero in these years
- (c) Years ended 31 March following that stated

## Production of diatomite

tonnes (metric)

Country	2012	2013	2014	2015	2016
Armenia	29 148	19 376	20 439	18 915	* 18 900
Czech Republic	43 000	49 000	34 000	15 000	26 000
Denmark					
Moler (a)	111 000	128 125	118 750	127 500	114 375
France	* 85 000	* 85 000	* 90 000	* 90 000	* 90 000
Germany	50 036	51 435	54 277	52 784	54 764
Hungary	1 229	456	550	1 092	* 1 000
Poland	600	600	590	600	500
Russia	* 70 000	* 70 000	72 000	66 200	47 300
Spain (b)	60 777	53 713	59 619	47 706	48 231
Turkey	86 403	84 751	61 884	86 656	* 90 000
Algeria	2 000	2 124	2 415	2 400	* 2 400
Ethiopia (c)	* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
Kenya	1 731	1 054	1 195	1 090	1 092
Mozambique	541	675	680	* 690	* 700
Costa Rica	—	8 813	5 024	* 5 000	* 5 000
Mexico	84 537	87 463	87 849	89 810	96 686
USA (d)	735 000	782 000	901 000	832 000	* 850 000
Argentina	278 126	209 466	* 200 000	* 200 000	* 200 000
Brazil	3 427	1 947	5 080	* 5 000	* 5 000
Chile	23 021	27 092	31 000	26 186	26 937
Peru	93 786	124 917	151 398	120 672	107 265
China	* 420 000	* 420 000	* 420 000	* 420 000	* 420 000
Iran (e)	1 956	4 167	—	—	—
Japan	* 100 000	* 90 000	* 90 000	* 100 000	* 100 000
Korea (Rep. of)	6 000	34 000	65 893	15 310	20 564
Saudi Arabia	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
Thailand	8 500	—	—	—	—
Australia (g)	* 12 000	* 21 000	* 13 000	* 16 000	* 12 000
New Zealand	—	4	43 624	* 44 000	* 44 000
World total	2 314 000	2 363 000	2 536 000	2 391 000	2 389 000

### Note(s)

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

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

(b) Including Tripoli

(c) Years ended 7 July of that stated

(d) Sold or used by producers

(e) Years ended 20 March following that stated

(g) Years ended 30 June of that stated

## Production of feldspar

tonnes (metric)

Country	2012	2013	2014	2015	2016
Czech Republic	445 000	411 000	412 000	433 000	454 000
Finland	43 124	47 636	46 233	38 026	18 549
France	* 600 000	* 550 000	* 550 000	* 550 000	* 550 000
Germany	350 000	* 350 000	320 000	253 411	284 569
Greece	13 000	—	—	—	—
Italy	* 4 700 000	* 4 700 000	* 4 700 000	* 4 700 000	* 4 700 000
Macedonia	17 168	15 168	18 076	20 289	19 919
Norway	—	—	154	76	70 015
Poland	487 200	483 000	519 896	537 520	510 900
Portugal (a)	167 287	138 715	136 440	178 622	232 775
Romania	4 112	7 060	7 570	13 244	4 501
Russia	* 200 000	* 200 000	* 200 000	232 995	278 142
Serbia	19 927	* 20 000	* 20 000	* 20 000	* 20 000
Slovakia	—	5 000	6 000	4 000	8 400
Spain	530 238	592 908	533 328	558 273	530 700
Sweden	27 000	30 000	27 000	29 000	22 000
Turkey	9 479 699	7 090 677	7 609 692	10 422 766	11 033 578
Ukraine	146 286	133 933	(b) 94 506	(b) 44 460	(b)* 44 500
Algeria	162 000	258 700	230 372	154 400	* 155 000
Egypt	* 200 000	* 200 000	* 200 000	* 300 000	* 300 000
Ethiopia (c)	* 500	* 530	596	* 600	* 600
Morocco	* 45 000	* 45 000	* 45 000	* 45 000	* 45 000
Nigeria	* 9 080	* 11 000	* 12 000	* 10 000	34 144
South Africa	94 458	191 443	102 541	126 542	131 023
Sudan	26 283	31 700	50 000	94 354	* 95 000
Cuba	3 800	3 200	3 600	3 300	3 900
Guatemala	19 356	19 611	10 410	10 340	30 428
Mexico	380 441	164 484	150 726	159 372	145 323
USA	560 000	550 000	530 000	510 000	* 600 000
Argentina	273 896	226 435	* 250 000	* 250 000	* 250 000
Brazil	247 152	294 357	717 771	* 700 000	* 700 000
Chile	6 399	3 874	4 233	6 577	6 352
Colombia	* 60 000	46 195	85 510	12 234	15 107
Ecuador	152 590	210 142	183 259	292 565	148 506
Peru	26 359	22 695	18 019	16 979	16 630
Uruguay	—	4	300	200	* 200
Venezuela	85 115	91 054	93 934	75 527	* 75 000
China	* 2 100 000	* 2 500 000	* 2 500 000	* 2 500 000	* 2 500 000
India (d)	1 459 008	1 512 982	1 343 366	* 1 300 000	* 1 300 000
Indonesia	* 19 000	* 18 000	* 18 000	* 18 000	* 18 000
Iran (e)	1 154 998	1 044 791	1 055 368	736 149	* 750 000
Japan (f)	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Korea (Rep. of)	360 413	343 241	528 958	601 030	654 398
Malaysia	482 906	314 399	378 446	442 980	326 648
Pakistan (g)	53 235	38 218	92 672	141 582	316 289
Philippines	24 969	30 388	34 232	38 067	46 630
Saudi Arabia	227 000	160 000	168 000	176 000	188 000
Sri Lanka	87 318	96 043	* 96 000	* 96 000	* 96 000
Taiwan	40	15	5	1	0
Thailand	1 100 619	1 072 656	1 413 428	1 329 816	1 167 147
Uzbekistan	* 4 300	* 4 300	* 4 300	* 4 300	* 4 300
Vietnam	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Australia (g)	* 108 000	* 73 000	* 55 000	* 51 000	* 42 000
World total	26 964 000	24 554 000	25 777 000	28 439 000	29 144 000

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	2012	2013	2014	2015	2016
Bulgaria	69 700	82 500	130 800	146 500	4 400
Germany	54 202	48 744	58 100	49 801	52 552
Russia	130 000	56 200	8 200	2 000	* 2 000
Spain	113 570	128 512	135 293	157 486	132 501
Turkey	5 197	3 874	4 271	6 238	6 500
United Kingdom	—	* 16 000	* 25 000	* 17 000	* 12 000
Egypt (a)	* 2 000	850	—	—	—
Kenya	91 000	71 987	97 156	70 096	42 656
Morocco	79 300	81 200	79 840	80 890	* 81 000
Namibia	74 157	65 259	28 955	—	1 495
South Africa	170 338	157 776	* 180 000	* 135 000	* 180 000
Mexico	1 237 091	1 210 477	1 109 721	624 574	655 255
Argentina	35 874	37 967	* 30 000	* 30 000	* 30 000
Brazil (b)	24 148	27 712	23 849	* 25 000	* 25 000
China	4 200 000	* 4 000 000	4 300 000	* 4 400 000	* 4 200 000
India (c)	3 092	2 487	2 946	2 333	1 175
Iran (d)	60 000	56 298	54 370	57 232	* 60 000
Kazakhstan	* 66 000	* 110 000	* 100 000	* 100 000	* 100 000
Kyrgyzstan	* 4 000	* 4 000	* 4 000	* 4 000	* 4 000
Mongolia	428 900	337 800	* 338 000	* 338 000	* 338 000
Pakistan (a)	6 866	13 344	7 500	—	—
Thailand	9 602	2 432	4 590	15 095	20 100
Vietnam	* 4 000	* 4 000	90 940	193 164	* 217 900
World total	6 900 000	6 500 000	6 800 000	6 500 000	6 200 000

### Note(s)

(1) In addition, the USA produced the following amounts of fluorspar equivalent in fluorosilicic acid derived from processing phosphate rock ('000 t): 2012: 130; 2013: 134; 2014: 131; 2015: 114; 2016: 105.

- (a) Years ended 30 June of that stated
- (b) Including beneficiated and directly shipped material
- (c) Years ended 31 March following that stated
- (d) Years ended 20 March following that stated

## Production of primary gallium

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 and the majority of producers do not report production figures. The leading producing countries are believed to be China, Russia, Germany and Ukraine, with smaller quantities produced in the Republic of Korea, Hungary and Japan.

The following table provides the currently available information but this is incomplete. The United States Geological Survey estimates total World total primary production as: 2012, 273 tonnes; 2013, 390 tonnes; 2014, 440 tonnes; 2015, 470 tonnes and 2016, 375 tonnes.

Lower grade production is often subsequently refined to higher grade material which complicates the collection of production data as double counting is a significant risk. High-purity gallium is believed to be produced in China, Japan, United Kingdom, U.S.A. and possibly Slovakia. There is also believed to be significant production of refined gallium from scrap recycling, particularly in Canada, Germany, Japan, United Kingdom and USA.

tonnes (metric)

Country	2012	2013	2014	2015	2016
Germany	...	38	16	11	23
Russia	* 13	* 13	* 13	* 13	* 13
China	* 270	* 300	* 300	284	189
Japan	8	8	8	6	3
Kazakhstan	16	* —	* —	* —	* —

## Production of germanium metal

tonnes (metric)

Country	2012	2013	2014	2015	2016
Finland	16	17	17	13	0
Russia	* 5	* 5	* 5	* 5	* 5
USA (a)	* 3	* 3	* 3	* 3	* 2
China	* 100	* 110	* 110	94	82
Japan	* 2	* 2	* —	* —	* —

Note(s)

(1) Germanium is also believed to be recovered from imported or domestic material in Belgium, Canada, Russia and Ukraine

(a) Including production of secondary metal

## Mine production of gold

In addition to 'industrial scale' gold mines around the World total, 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 total 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 estimated to be in the region of 30 kg per year, but is not shown in the table.

Burkina Faso – official Chamber of Mines figures include 302 kg for artisanal mining in 2015; 208 kg in 2014; and 476 kg in 2013. An estimate of 300 kg has been added to the reported industrial scale mining figures for 2016. It is believed the actual artisanal production may 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. A nominal estimate of 1000 kg per year is shown in the table but it is likely this is too low. 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 estimated to be in the region of 50-60 kg per year, but is not shown in the table.

Congo – all gold mining is believed to be small scale or artisanal and a nominal estimate of 150 kg per year is shown in the table.

Democratic Republic of Congo – artisanal mining is quite extensive, the figures shown include estimates for artisanal mining ranging from 10 000 to 17 000 kg per year.

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 2013/14 amounted to 7036 kg and in 2014/15 to 5473 kg. Actual artisanal production is likely to be higher.

Equatorial Guinea – artisanal gold mining is likely to be taking place but on a relatively minor scale. It is not shown in this table.

French Guiana – the figures in the table are officially reported but may not include illegal artisanal mining. Some reports indicate that artisanal mining could be as much as 3000 to 5000 kg per year.

Gabon – attempts to regulate artisanal gold mining are being undertaken with gold from artisanal miners being purchased by a government agency from 2013. This has been reported as amounting to 43 kg in 2013 and 55 kg in 2015. Figures for 2014 and 2016 include estimates of approximately 50 kg per year. It is likely that artisanal mining was also taking place in earlier years and in 2012 was likely in the order of 20 kg.

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 under the Extractive Industry Transparency Initiative (EITI), although the most recent EITI report was for 2014 at the time of compilation. In the table below artisanal production for 2012 to 2014 is taken from the EITI report and estimated for 2015 and 2016. The EITI reported quantities are: 2012, 46,510 kg; 2013, 49,095 kg and 2014, 47,044 kg.

Guinea – the figures in the table include reported figures for artisanal mining in 2012 to 2014, with estimates for 2015 and 2016. 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. Some reports estimate it could be as high as 1500 to 3000 kg per year.

Ivory Coast – efforts are being made within Ivory Coast to rationalise artisanal mining as part of the EITI process, although the 2015 EITI report does not give any indication of the likely scale. 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 of 2000 kg has been added to reported industrial scale mine output in 2012 to 2014 and 3000 kg in 2015 and 2016.

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

Liberia – artisanal mining is believed to have reduced from approximately 600 kg per year in 2012 to less than 200 kg in 2016.

Madagascar – estimates of artisanal mining are in the order of 3000 to 4000 kg per year.

Mali – the figures include an estimate of 5000 kg per year for artisanal mining, but it is likely the real figure varies from year to year.

Tanzania – Artisanal mining does occur and in 2016 was reported as producing 30 kg.

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.

kilograms

Country	2012	2013	2014	2015	2016
Armenia	1 941	2 324	2 814	3 640	* 3 600
Azerbaijan	1 562	1 621	1 875	2 240	2 034
Bulgaria	7 058	7 385	7 899	7 914	7 918
Finland	9 100	8 660	8 085	8 342	8 865
Georgia	* 3 100	* 4 300	* 2 300	* 3 100	* 3 600
Greece	26	823	552	510	86
Greenland	307	25	—	—	—
Macedonia	—	—	—	494	664

## Mine production of gold

kilograms

Country	2012	2013	2014	2015	2016
Poland	469	431	226	431	402
Romania	* 500	* 500	* 500	* 500	* 500
Russia	200 345	229 982	249 065	251 210	253 215
Serbia (a)	900	1 154	1 310	* 1 200	850
Slovakia	546	533	582	603	492
Spain	1 529	1 994	1 958	2 128	1 291
Sweden	6 015	6 530	6 849	6 028	6 463
Turkey	29 390	33 980	31 260	27 800	24 500
United Kingdom	102	42	—	—	—
Algeria	264	140	85	106	* 110
Botswana	1 522	1 206	958	757	833
Burkina Faso	29 877	32 994	36 320	36 540	39 000
Burundi	2 147	2 823	650	549	396
Cameroon	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
Congo	* 150	* 150	* 150	* 150	* 150
Congo, Democratic Republic	* 17 000	* 20 000	* 36 000	* 43 000	* 40 000
Egypt	8 175	11 102	11 734	13 657	17 139
Eritrea	9 735	2 862	840	753	* 1 400
Ethiopia (b)	12 581	13 050	10 340	9 370	6 800
Gabon	684	1 201	* 1 060	1 356	* 1 070
Ghana	* 128 600	* 137 800	* 137 900	* 130 100	* 129 000
Guinea	16 154	18 322	23 465	21 464	30 280
Ivory Coast	* 13 000	* 15 000	* 19 000	* 23 000	* 24 000
Kenya	3 600	2 100	200	300	200
Liberia	641	587	620	828	2 144
Madagascar	* 3 157	* 3 000	* 3 000	* 3 000	* 3 000
Mali	* 46 900	* 46 000	* 45 400	* 46 500	* 47 000
Mauritania	7 647	9 518	9 625	8 804	7 122
Morocco (a)	532	463	377	448	352
Mozambique	178	91	197	242	201
Namibia	2 329	2 038	4 553	6 285	6 756
Niger	1 677	1 041	732	1 220	999
Nigeria	4 303	6 261	* 6 300	* 6 300	* 6 300
Rwanda	—	—	319	336	* 300
Senegal	6 666	6 445	6 588	5 670	6 741
Sierra Leone	141	96	43	87	188
South Africa	154 180	159 724	151 622	144 515	142 077
Sudan	44 500	70 000	73 300	82 400	93 400
Tanzania	39 012	43 390	40 598	43 293	44 324
Togo (c)	18 551	21 086	20 583	15 568	14 000
Zambia (d)	4 232	5 207	4 803	4 238	4 610
Zimbabwe	14 743	14 001	15 386	20 023	22 747
Canada	107 486	133 636	152 460	162 504	165 034
Costa Rica	—	* 2 000	* 1 050	* 950	* 950
Dominican Republic	4 106	26 084	35 081	30 838	38 130
Guatemala	6 473	6 386	6 142	5 610	3 910
Honduras	1 859	1 985	2 839	2 736	2 607
Mexico	102 802	119 774	117 771	134 759	132 413
Nicaragua	6 981	8 611	8 237	7 538	8 314
Panama	2 208	1 120	—	—	—
USA	234 623	229 703	210 077	213 808	222 211
Argentina	54 651	52 486	60 170	62 673	56 017
Bolivia	27 488	18 127	24 803	12 810	12 811
Brazil	66 773	79 563	81 038	83 124	80 000
Chile	49 936	51 309	46 031	42 501	46 333
Colombia	66 178	55 745	57 015	59 202	61 805
Ecuador	5 139	8 676	7 322	8 356	6 761
French Guiana	1 147	1 220	1 829	1 460	1 600
Guyana	13 643	14 963	12 053	14 029	22 167
Peru	161 545	151 486	140 090	146 823	153 006
Suriname	12 507	11 001	10 641	9 396	12 926
Uruguay (e)	1 881	2 092	1 715	1 480	993
Venezuela	1 982	1 679	1 056	558	* 500

## Mine production of gold

kilograms

Country	2012	2013	2014	2015	2016
Burma (f)	787	893	1 315	1 692	1 446
China (a)	403 050	428 163	451 799	450 053	453 490
India (f)	1 588	1 564	1 441	1 323	1 594
Indonesia	69 291	59 804	69 023	92 171	80 868
Iran (g)	1 179	1 656	1 760	2 358	* 2 500
Japan	7 232	7 411	7 114	7 699	6 455
Kazakhstan	40 006	42 552	50 339	63 614	74 626
Korea (Rep. of)	336	413	284	258	205
Kyrgyzstan	10 600	19 400	18 000	17 600	21 000
Laos	6 415	6 838	5 265	6 893	6 728
Malaysia	4 625	3 823	4 308	4 732	2 249
Mongolia	5 995	8 904	19 959	20 828	9 331
Philippines	15 762	17 248	18 423	21 314	23 053
Saudi Arabia	4 285	4 158	4 789	5 089	7 010
Tajikistan	2 400	2 670	3 436	* 4 400	* 5 000
Thailand	4 895	4 419	4 576	3 305	4 292
Uzbekistan	* 90 000	* 90 000	* 100 000	* 100 000	* 100 000
Vietnam	1 508	1 681	164	* 110	* 200
Australia	250 441	267 062	274 047	279 190	287 690
Fiji	1 439	1 218	1 188	1 368	1 500
New Zealand	10 049	12 468	11 989	12 687	9 866
Papua New Guinea	57 021	61 878	56 148	57 640	61 952
Solomon Islands	2 109	1 826	603	—	—
World total	2 780 000	2 970 000	3 060 000	3 150 000	3 200 000

### Note(s)

- (1) In several countries substantial amounts of gold produced in small operations are not recorded in the official statistics used when compiling this table.
  - (2) In addition to the countries listed, Benin, Central African Republic, Equatorial Guinea, Uganda, Oman and Taiwan produce less than 100 kg gold per year.
  - (3) In addition to the countries listed, Cambodia, El Salvador, Haiti, Malawi, Pakistan, Paraguay, Portugal, and South Sudan 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	2012	2013	2014	2015	2016
Austria (a)(b)	18 840	17 190	23 240	21 840	* 21 000
Germany	109	269	517	398	502
Norway	6 992	6 207	8 266	9 185	9 600
Russia	* 14 000	* 14 000	* 14 000	15 900	19 400
Sweden	—	—	—	113	—
Turkey	31 500	28 740	* 28 500	* 32 000	* 32 000
Ukraine	4 600	6 900	13 800	14 500	14 630
Madagascar	3 629	3 833	699	* 700	* 700
Zimbabwe	7 022	6 934	6 853	6 362	5 622
Canada	* 20 000	* 20 000	* 30 000	* 30 000	* 21 000
Mexico	7 520	7 024	9 160	13 048	5 220
Brazil (c)	88 110	91 908	87 026	75 100	82 000
China (d)	* 1 800 000	* 1 800 000	* 1 800 000	* 1 800 000	* 1 800 000
India (a)(e)	134 735	146 390	116 712	135 528	122 437
Korea, Dem. P.R. of	* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
Pakistan (f)	912	6 188	14 279	2 864	360
Sri Lanka	4 173	3 143	* 3 100	* 2 800	* 3 100
World total	2 200 000	2 200 000	2 200 000	2 200 000	2 100 000

### Note(s)

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

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

# Production of gypsum

tonnes (metric)

Country	2012	2013	2014	2015	2016
Albania	91 021	126 349	108 733	86 163	132 126
Armenia	30 400	28 700	22 300	19 400	14 800
Austria (a)	791 961	635 299	729 892	715 195	674 346
Azerbaijan	149 983	169 028	145 457	196 463	156 417
Bosnia & Herzegovina (a)	73 365	73 300	67 700	58 800	61 231
Bulgaria	113 700	119 100	87 800	108 600	60 900
Croatia	182 557	114 450	120 055	138 088	170 107
Cyprus	327 800	315 000	347 600	471 885	682 024
Czech Republic	14 000	11 000	11 000	11 000	10 000
France (a)	3 685 230	3 566 028	3 279 252	2 027 360	4 182 614
Germany (a)	1 949 000	1 778 000	4 090 000	4 200 000	3 970 000
Greece (a)	621 000	760 000	664 000	649 280	830 000
Ireland, Republic of	* 200 000	* 200 000	* 300 000	* 250 000	* 250 000
Italy (a)	3 200 920	3 192 186	5 886 653	571 731	617 188
Latvia (a)	252 714	272 340	270 120	* 270 000	* 270 000
Macedonia (a)	157 844	162 661	156 492	172 525	202 582
Moldova (b)	375 900	* 400 000	* 400 000	* 400 000	* 400 000
Norway (a)(c)	85 296	77 009	79 740	77 403	82 386
Poland (a)	1 395 400	1 270 100	1 231 858	1 099 081	1 118 484
Portugal	321 988	299 038	328 730	309 966	255 026
Romania	765 251	736 099	806 887	840 196	714 273
Russia	4 179 000	4 223 000	* 4 400 000	* 4 400 000	* 4 000 000
Slovakia (a)	88 000	60 000	65 000	67 000	53 000
Spain	6 359 923	7 388 699	6 925 120	7 403 767	8 661 649
Switzerland	297 000	284 000	257 000	165 000	195 500
Turkey	8 248 446	9 790 097	9 051 158	8 638 715	* 8 600 000
Ukraine (a)	2 185 800	2 175 400	1 525 300	1 254 900	* 1 255 000
United Kingdom	* 1 200 000	* 1 200 000	* 1 200 000	* 1 200 000	* 1 200 000
Algeria	2 000 000	2 077 700	2 130 459	* 2 000 000	* 2 000 000
Angola	121 981	189 242	* 190 000	* 190 000	* 190 000
Egypt (a)(d)	457 602	940 615	872 141	* 850 000	* 850 000
Eritrea	* 1 200	* 1 200	* 1 200	* 1 000	* 1 000
Ethiopia (a)(e)	46 000	42 452	* 43 000	* 45 000	* 45 000
Kenya (a)	6 653	5 500	5 900	5 800	* 5 800
Libya	* 80 000	* 80 000	* 80 000	* 80 000	* 80 000
Madagascar	* 130	* 130	* 130	* 130	* 130
Mauritania	* 75 000	* 65 000	* 65 000	* 65 000	* 65 000
Morocco	* 600 000	* 600 000	* 600 000	* 600 000	* 600 000
Niger	600	1 755	—	253	250
Nigeria	* 350 000	* 350 000	* 350 000	* 350 000	* 350 000
South Africa	558 242	559 443	376 223	232 878	266 811
Sudan	117 073	132 000	111 271	28 965	* 29 000
Tanzania	91 610	171 567	200 179	239 302	213 744
Tunisia	752 641	744 589	771 652	690 000	* 690 000
Canada (a)	2 550 000	2 654 000	1 811 000	2 682 000	1 704 000
Cuba	131 000	87 100	97 800	90 900	73 900
Dominican Republic	185 890	144 178	243 098	243 992	* 243 000
Guatemala	99 628	117 619	81 885	111 351	130 616
Honduras	* 5 500	* 5 500	* 10 000	* 10 000	* 10 000
Jamaica	64 753	48 322	45 201	42 883	49 703
Mexico	9 456 478	7 903 159	7 043 563	7 101 612	* 7 100 000
Nicaragua	34 890	36 500	46 570	54 580	57 950
USA	12 800 000	14 400 000	14 900 000	15 200 000	* 15 500 000
Argentina	1 432 517	1 547 862	* 1 500 000	* 1 500 000	* 1 500 000
Bolivia	645	1 223	* 1 000	650	1 181
Brazil	3 749 860	3 332 991	3 447 012	* 3 500 000	* 3 500 000
Chile	799 064	1 015 158	843 490	860 075	934 033
Colombia	* 200 000	353 100	395 651	445 855	331 245
Paraguay	* 4 500	* 4 500	* 4 500	* 4 500	* 4 500
Peru	390 705	297 527	543 856	438 025	257 423
Afghanistan	2 000	2 500	3 000	* 3 000	* 3 000
Bhutan	313 173	351 421	414 148	389 365	317 597
Burma (f)	38 579	60 510	104 994	99 860	* 270 000
China	* 128 000 000	* 129 000 000	* 130 000 000	* 130 000 000	* 130 000 000

## Production of gypsum

tonnes (metric)

Country	2012	2013	2014	2015	2016
India (f)(g)	3 564 300	3 115 894	2 478 056	* 2 500 000	* 2 500 000
Iran (h)	14 178 577	17 354 489	14 869 796	12 293 743	* 16 000 000
Iraq	9 424 214	10 461 708	* 10 462 000	* 10 460 000	* 10 460 000
Israel	45 407	27 200	82 000	159 299	147 000
Japan	5 002 000	4 771 000	4 674 000	4 670 000	* 4 700 000
Jordan	275 000	* 275 000	* 275 000	* 275 000	* 275 000
Kazakhstan	* 700 000	* 700 000	* 700 000	* 700 000	* 700 000
Laos	619 300	772 138	584 338	* 584 000	* 584 000
Mongolia	* 60 000	* 60 000	* 60 000	67 300	56 000
Oman	1 915 300	2 785 000	3 387 300	6 049 400	5 482 900
Pakistan (d)	1 260 021	1 249 967	1 326 437	1 417 007	1 871 716
Saudi Arabia	1 700 000	1 700 000	1 780 000	1 860 000	* 2 000 000
Sri Lanka	* 600	* 600	* 600	* 600	* 600
Syria	* 200 000	* 100 000	* 50 000	* 25 000	* 10 000
Tajikistan	13 700	12 200	12 900	8 500	9 000
Thailand					
Gypsum	11 447 199	12 382 648	12 445 100	11 267 144	10 406 597
Anhydrite	857 172	1 264 077	976 818	876 024	1 340 213
Uzbekistan	* 80 000	* 80 000	* 80 000	* 80 000	* 80 000
Yemen, Republic of	* 100 000	* 100 000	* 100 000	* 30 000	* 10 000
Australia (d)	3 834 900	3 588 885	3 624 174	3 824 801	4 282 189
World total	258 100 000	267 600 000	267 900 000	261 100 000	267 100 000

### 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, Japan and Vietnam may also produce gypsum.

- (a) Including anhydrite  
(b) Excluding output from the region east of the River Nistru and the Municipality of Bender  
(c) Sales  
(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



## Refinery production of indium

tonnes (metric)

Country	2012	2013	2014	2015	2016
Belgium	* 30	* 30	* 30	* 30	* 30
France	13	33	43	49	—
Germany	* 10	* 10	* 10	* 10	* 10
Italy	* 5	* 5	* 5	* 5	* 5
Netherlands	* 5	* 5	* 5	* —	* —
Russia	7	7	* 7	* 7	* 7
Canada	* 65	* 70	* 67	* 70	* 65
Brazil	* 5	* 5	* 5	* 5	* 5
Peru	* 11	* 11	14	* 9	* 5
China	* 405	* 415	* 460	* 520	* 510
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	2012	2013	2014	2015	2016
Azerbaijan	240 400	249 100	221 100	246 700	209 600
Russia	* 105 000	* —	* —	13 987	2 952
USA	* 1 270 000	* 1 270 000	* 1 270 000	* 1 350 000	* 1 250 000
Chile	17 494 000	20 656 000	18 989 000	21 179 000	18 758 000
China	* 600 000	* 600 000	* 600 000	* 600 000	* 600 000
Indonesia	* 44 000	* 43 000	* 56 000	* 45 000	* 45 000
Iran (a)	* 300 000	* 300 000	* 300 000	* 300 000	(b)* 360 000
Japan	9 315 000	9 334 000	9 814 000	10 610 000	9 993 000
Turkmenistan	* 480 000	* 500 000	* 500 000	* 510 000	* 510 000
Uzbekistan	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
World total	29 900 000	33 000 000	31 800 000	34 900 000	31 700 000

Note(s)

(a) Years ended 20 March following that stated

(b) Exports

## Production of iron ore

tonnes (metric)

Country	2012	2013	2014	2015	2016
Austria (a)	2 142 255	2 323 323	2 436 675	2 783 327	2 777 260
Azerbaijan	207 300	141 400	91 400	127 600	25 500
Bosnia & Herzegovina	2 075 732	2 121 908	2 127 564	2 122 802	1 751 800
Germany (b)(c)	447 515	413 404	461 082	467 690	514 004
Norway	7 744 487	9 549 232	10 542 149	3 519 116	1 757 851
Russia	104 000 000	102 100 000	102 100 000	101 000 000	101 000 000
Sweden	32 198 000	37 411 000	35 759 000	29 861 000	31 843 000

## Production of iron ore

tonnes (metric)

Country	2012	2013	2014	2015	2016
Turkey	4 969 901	8 589 362	11 887 154	7 760 957	* 7 800 000
Ukraine	67 149 000	70 389 000	68 337 000	66 902 000	* 66 900 000
Algeria	1 700 000	1 066 700	911 135	944 000	* 945 000
Egypt (d)	427 831	1 421 772	1 699 133	* 1 500 000	* 1 500 000
Liberia	2 369 850	4 948 095	4 921 391	5 748 520	1 522 076
Malawi	—	—	—	—	3 800
Mali	* 160 000	* 100 000	* 100 000	* —	* —
Mauritania	11 169 800	12 532 200	13 305 800	11 607 000	13 268 061
Morocco	260 700	301 100	22 910	17 860	* 17 000
Nigeria	* 70 000	* 50 000	* 50 000	* 50 000	* 50 000
Sierra Leone	5 203 490	11 894 580	17 497 553	5 247 688	6 576 576
South Africa (e)	67 100 474	71 543 088	80 759 334	73 220 891	66 455 868
Sudan	96 400	339 390	500 000	—	* —
Swaziland	1 032 230	1 258 560	603 251	—	—
Tunisia	215 382	244 643	331 869	284 600	* 285 000
Uganda	4 431	2 283	41 959	9 000	2 163
Canada (f)	39 427 100	42 769 700	44 196 000	46 673 000	48 999 000
Guatemala	1 000	778	—	—	—
Mexico	22 600 000	28 545 000	25 193 818	20 397 000	* 20 400 000
USA (f)(g)	54 000 000	52 800 000	56 100 000	46 100 000	* 40 800 000
Bolivia	13 348	1 760	18 360	24 453	2 940
Brazil	400 600 000	316 800 000	345 800 000	389 146 000	424 200 000
Chile	17 330 000	17 109 000	18 866 000	15 448 000	14 619 000
Colombia	391 503	710 047	676 180	901 736	715 692
Ecuador (h)	7 631	2 616	408	—	—
Peru	8 221 983	7 014 000	7 193 000	7 320 807	7 663 124
Venezuela	15 403 095	11 198 077	11 258 577	11 715 475	* 11 000 000
Bhutan	3 742	20 506	18 997	43 202	28 065
China	1 309 637 000	1 451 011 000	1 514 240 000	1 381 288 000	1 280 893 000
India (i)	136 618 000	152 183 000	129 321 000	158 108 000	192 081 000
Indonesia	11 545 752	22 353 337	5 951 400	3 838 546	* 3 800 000
Iran (j)	43 497 000	48 693 000	51 500 000	42 500 000	48 000 000
Kazakhstan	52 614 000	51 758 500	51 540 800	37 269 700	35 417 000
Korea (Rep. of)	592 743	663 045	693 262	445 318	444 677
Korea, Dem. P.R. of	* 5 100 000	* 3 444 000	* 3 212 000	* 1 931 000	* 2 000 000
Malaysia (f)	12 143 985	12 134 258	9 615 323	1 625 253	1 914 492
Mongolia	7 561 400	6 011 200	10 260 500	6 173 400	2 209 900
Pakistan (d)	384 893	412 108	197 074	328 915	432 156
Philippines	216 176	826 745	153 775	107 119	6 549
Thailand	303 233	389 620	347 918	16 483	—
Vietnam	1 506 200	2 495 300	2 719 000	2 691 000	3 154 000
Australia	519 356 328	609 729 698	739 682 244	809 881 763	858 025 634
New Zealand	2 394 848	3 156 619	3 245 369	3 193 722	3 495 818
World total	2 972 000 000	3 181 000 000	3 386 000 000	3 300 000 000	3 305 000 000

### Note(s)

- (a) Including micaceous iron oxide
- (b) Including manganeseiferous 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) Including iron sand
- (i) Years ended 31 March following that stated
- (j) Years ended 20 March following that stated

## Production of pig iron

tonnes (metric)

Country	2012	2013	2014	2015	2016
Austria	5 751 000	6 200 000	6 015 000	5 805 000	5 642 000
Azerbaijan	* 2 000	1 916	1 504	1 150	2 533
Belgium	4 073 000	4 343 000	4 335 000	4 248 000	4 896 000
Bosnia & Herzegovina	749 539	759 100	860 430	845 462	778 123
Czech Republic	3 935 207	4 040 000	4 152 000	4 031 129	4 165 000
Finland	2 461 000	2 100 000	2 500 000	2 600 000	2 700 000
France	9 531 844	10 276 499	10 865 646	10 097 177	9 724 062
Germany	27 046 000	26 678 000	27 943 000	27 844 000	27 269 000
Hungary	1 229 000	600 000	801 000	1 247 000	863 000
Italy	9 424 000	6 933 000	6 371 000	5 051 000	6 044 000
Netherlands	5 909 000	5 700 000	5 868 000	6 050 000	6 092 000
Norway	100 000	106 000	102 000	100 000	100 000
Poland	3 943 968	4 013 877	4 639 571	4 826 492	4 679 616
Romania	1 467 000	1 604 000	1 631 000	1 938 502	1 932 273
Russia	50 500 000	50 000 000	51 400 000	53 700 000	51 900 000
Serbia	318 651	366 277	550 000	904 000	1 154 000
Slovakia	3 519 755	3 617 000	3 838 000	3 738 486	3 987 000
Spain	3 081 000	3 949 000	3 958 000	4 450 000	4 115 000
Sweden	2 805 000	2 896 000	3 078 000	3 000 000	3 200 000
Turkey	18 289 109	19 548 094	* 20 000 000	* 20 000 000	* 20 000 000
Ukraine	28 487 000	29 088 700	24 800 900	21 863 000	* 21 860 000
United Kingdom	7 183 100	9 470 600	9 704 600	8 773 500	6 115 000
Algeria	350 000	300 000	300 000	300 000	* 300 000
Egypt	3 618 000	3 400 000	2 882 000	2 451 000	2 618 000
Libya	508 000	1 000 000	1 302 000	449 000	699 000
South Africa	6 092 000	6 404 000	6 040 000	6 939 000	5 013 000
Canada	8 496 000	7 300 000	8 210 000	7 353 000	7 606 000
Mexico	10 197 841	11 011 092	11 092 595	10 074 000	* 9 268 000
Trinidad & Tobago	1 684 300	1 749 700	1 633 000	901 100	—
USA	32 062 000	30 381 000	29 345 000	25 435 000	22 293 000
Argentina	3 683 000	4 115 390	4 428 300	3 937 500	2 665 800
Brazil	32 448 000	31 552 000	* 32 000 000	* 33 000 000	35 000 000
Chile	1 068 000	760 000	584 000	644 000	689 000
Colombia	345 000	264 000	234 000	240 000	235 000
Paraguay	67 000	69 000	71 000	71 000	50 000
Peru	98 000	93 000	88 000	72 000	58 000
Venezuela	4 594 000	2 600 000	1 415 000	1 393 000	908 000
China	663 544 000	711 498 800	713 747 800	691 413 000	700 736 000
India	68 037 000	68 252 000	75 532 000	74 621 000	77 254 000
Indonesia	524 000	757 000	155 000	53 000	* 53 000
Iran	13 725 000	16 465 000	17 333 000	17 005 000	18 300 000
Japan	81 405 470	83 849 049	83 872 490	81 010 826	80 186 246
Kazakhstan	2 707 000	2 622 745	3 184 780	3 233 671	3 595 090
Korea (Rep. of)	41 718 000	41 045 000	46 909 000	47 639 000	46 336 000
Korea, Dem. P.R. of	* 250 000	* 250 000	* 250 000	* 250 000	* 250 000
Malaysia	2 329 000	1 399 000	1 007 000	957 000	656 000
Pakistan	* 198 000	* 165 000	* 142 000	* 163 000	—
Qatar	2 424 000	2 385 493	2 547 000	2 631 000	2 506 000
Saudi Arabia	4 976 000	5 300 000	5 508 000	5 391 000	5 119 000
Taiwan	11 784 000	13 300 000	14 505 000	14 370 000	14 919 000
Vietnam	* 650 000	* 650 000	* 1 393 000	* 1 700 000	* 2 100 000
Australia	3 480 000	3 342 000	3 282 000	3 594 000	3 642 000
New Zealand	670 000	700 000	680 000	678 000	670 000
World total	1 194 000 000	1 245 000 000	1 263 000 000	1 229 000 000	1 231 000 000

### Note(s)

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

## Production of crude steel

tonnes (metric)

Country	2012	2013	2014	2015	2016
Albania	390 000	312 000	560 000	150 000	100 000
Austria	7 421 000	7 953 000	7 876 000	7 687 000	7 438 000
Azerbaijan	267 660	222 800	324 119	302 015	345 340
Belarus	2 869 373	2 394 489	2 597 807	2 577 292	2 265 517
Belgium	7 301 000	7 127 000	7 331 000	7 257 000	7 687 000
Bosnia & Herzegovina	700 341	722 155	792 019	795 942	783 045
Bulgaria	633 000	523 000	612 000	543 000	527 000
Croatia	1 016	135 000	159 000	122 000	—
Czech Republic	5 072 082	5 171 255	5 360 000	5 261 591	5 305 000
Estonia	185	157	202	1 216	828
Finland	3 759 000	3 517 000	3 808 000	3 988 000	4 102 000
France	15 607 227	15 685 350	16 143 625	14 984 045	14 412 574
Germany	42 661 000	42 645 000	42 943 000	42 674 000	42 081 000
Greece	1 247 000	1 030 000	1 022 000	910 000	1 158 000
Hungary	1 543 000	883 000	1 152 000	1 675 000	1 279 000
Italy	27 252 000	24 093 000	23 714 000	22 018 000	23 373 000
Kosovo	* 120 000	* 120 000	* 150 000	* —	* —
Latvia	805 000	198 000	* 190 000	* 190 000	* 190 000
Luxembourg	2 214 000	2 090 000	2 193 000	2 127 000	2 175 000
Macedonia	225 224	145 633	196 454	165 235	239 164
Moldova (a)	335 000	190 000	351 000	443 000	126 000
Montenegro	28 161	19 723	* 15 000	36 602	26 246
Netherlands	6 879 000	6 713 000	6 964 000	6 995 000	6 917 000
Norway	700 000	605 000	600 000	590 000	620 000
Poland	8 542 514	8 199 353	8 799 731	9 337 105	9 160 660
Portugal	1 960 000	2 050 000	2 070 000	2 030 000	2 010 000
Romania	3 292 000	2 985 000	3 158 000	3 423 421	3 384 419
Russia	70 400 000	68 800 000	70 300 000	69 400 000	69 600 000
Serbia	346 000	396 000	583 000	955 000	1 173 000
Slovakia	4 403 447	4 511 000	4 705 000	4 561 609	4 808 000
Slovenia	632 000	618 000	615 000	604 000	613 000
Spain	13 639 000	14 252 000	14 163 000	14 845 000	13 654 000
Sweden	4 312 400	4 391 900	4 533 800	4 367 600	4 616 700
Switzerland	* 1 450 000	* 1 530 000	1 611 607	1 586 020	1 498 021
Turkey	35 885 000	34 654 000	34 035 000	31 517 000	33 163 000
Ukraine	33 509 180	33 198 653	27 372 913	23 166 031	* 23 166 000
United Kingdom	9 579 100	11 857 500	12 033 500	10 906 700	7 581 000
Algeria	557 000	417 000	415 000	650 000	650 000
Congo, Democratic Republic	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Egypt	6 627 000	6 754 000	6 485 000	5 506 000	5 036 000
Ethiopia	* 130 000	* 130 000	* 130 000	* 130 000	* 130 000
Ghana	* 25 000	* 25 000	* 25 000	* 25 000	* 25 000
Kenya	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Libya	315 000	712 000	968 000	352 000	492 000
Mauritania	* 7 000	* 9 000	* 10 000	* 10 000	* 10 000
Morocco	539 000	558 000	501 000	516 000	520 000
Nigeria	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
South Africa	6 938 000	7 253 000	7 210 000	7 614 000	6 141 000
Tunisia	110 800	109 600	100 700	50 000	* 50 000
Uganda	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Canada	13 507 000	12 349 000	12 595 000	12 473 000	12 672 000
Cuba	280 899	268 814	259 130	223 441	206 260
Dominican Republic	* 56 000	* 56 000	* 60 000	* 60 000	* 60 000
El Salvador	72 000	118 000	121 000	114 000	116 000
Guatemala	334 000	385 000	395 000	403 000	* 374 000
Mexico	18 073 052	18 242 195	18 995 283	18 228 000	* 18 137 000
Trinidad & Tobago	623 800	615 800	483 300	266 500	—
USA	88 695 000	86 878 000	88 174 000	78 845 000	78 475 000
Argentina	4 996 000	5 185 710	5 488 100	5 027 900	3 813 800
Brazil	34 524 000	34 163 000	33 912 000	33 200 000	30 200 000
Chile	1 671 000	1 323 000	1 079 000	1 112 000	1 151 000
Colombia	1 302 000	1 236 000	1 208 000	1 211 000	1 259 000
Ecuador	425 000	570 000	667 000	720 000	* 648 000

## Production of crude steel

tonnes (metric)

Country	2012	2013	2014	2015	2016
Paraguay	44 000	45 000	47 000	48 000	35 000
Peru	981 000	1 069 000	1 078 000	1 080 000	1 167 000
Uruguay	78 000	91 000	94 000	97 000	* 95 000
Venezuela	2 359 000	2 494 000	1 466 000	1 346 000	553 000
Burma	* 25 000	* 30 000	* 35 000	* 35 000	* 35 000
China	723 882 200	813 138 900	822 306 300	803 825 000	808 366 000
India (b)	78 416 000	81 694 000	88 979 000	89 790 000	97 443 000
Indonesia	2 254 472	2 644 111	4 351 245	4 854 200	4 745 908
Iran (c)	14 395 000	15 631 000	16 257 000	16 805 000	17 000 000
Israel	* 300 000	* 300 000	* 300 000	* 300 000	* 300 000
Japan	107 232 297	110 594 771	110 666 068	105 134 378	104 775 329
Jordan	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Kazakhstan	3 676 000	3 275 000	4 014 860	3 902 617	4 260 821
Korea (Rep. of)	69 073 000	66 061 000	71 542 000	69 670 000	68 575 000
Korea, Dem. P.R. of	* 1 280 000	* 1 250 000	* 1 250 000	* 1 250 000	* 1 250 000
Kuwait	* 500 000	* 500 000	* 500 000	* 500 000	* 500 000
Malaysia	5 611 538	4 693 120	4 316 000	3 783 572	2 764 078
Mongolia	72 400	* 58 600	* 58 600	* 58 600	* 58 600
Pakistan	* 1 631 000	* 1 845 000	* 2 423 000	* 2 892 000	* 3 553 000
Philippines	1 260 000	1 308 000	1 196 000	968 000	1 075 000
Qatar	2 148 000	2 236 000	2 867 000	2 594 000	2 521 000
Saudi Arabia	5 203 000	5 471 000	6 291 000	5 662 000	5 461 000
Singapore	688 000	433 000	575 000	510 000	520 000
Syria	* 70 000	* 10 000	* 5 000	* 5 000	* 5 000
Taiwan	19 927 000	21 466 000	22 511 000	20 815 000	20 858 000
Thailand	3 328 000	3 579 000	4 095 000	3 718 000	3 824 000
United Arab Emirates	2 408 000	2 878 000	2 390 000	3 006 000	3 149 000
Uzbekistan	736 000	746 000	723 000	643 000	654 000
Vietnam	5 298 000	5 474 000	5 847 000	5 647 000	7 811 000
Australia	4 850 912	4 730 900	4 582 300	4 935 300	5 215 489
New Zealand	912 000	900 000	881 000	793 000	577 000
World total	1 555 000 000	1 642 000 000	1 670 000 000	1 620 000 000	1 623 000 000

### Note(s)

- (1) Unless otherwise indicated, these figures include production from scrap  
(2) Small amounts of steel are believed to be produced in Sri Lanka

- (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	2012	2013	2014	2015	2016
Albania					
Ferro-chrome	24 018	24 692	34 897	43 350	44 411
Armenia					
Ferro-molybdenum	5 836	6 619	6 528	5 576	6 526
Austria					
Ferro-molybdenum	4 000	4 000	4 000	4 000	4 000
Ferro-nickel	2 500	2 500	2 500	2 500	2 500
Ferro-vanadium	8 000	8 000	8 000	8 000	7 000
Bosnia & Herzegovina					
Ferro-alloys	15 874	16 707	18 383	18 716	28 138
Czech Republic					
Ferro-vanadium	* 5 800	* 6 400	* 6 100	* 6 200	* 6 300
Finland					
Ferro-chrome	229 000	434 000	441 000	457 000	469 000
France					
Ferro-manganese	101 000	104 000	115 700	* 116 000	* 116 000
Ferro-silico-manganese	68 500	64 900	64 800	* 64 800	* 64 800
Ferro-silicon	63 300	49 600	40 000	* 45 000	* 45 000
Silicon metal	* 110 000	* 110 000	100 000	* 100 000	80 000
Other ferro-alloys	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Georgia					
Ferro-manganese	* 4 500	* 4 500	* 4 500	* 4 500	* 4 500
Ferro-silico-manganese	257 421	253 361	243 951	217 289	244 616
Germany					
Ferro-chrome	* 17 800	* 17 500	* 17 000	* 17 000	* 17 000
Silicon metal	28 574	30 283	28 500	29 953	29 940
Other ferro-alloys	8 248	* 8 200	* 8 200	* 8 200	* 8 200
Greece					
Ferro-nickel	96 435	86 850	94 952	89 129	87 880
Iceland					
Ferro-silicon	131 818	125 204	112 657	121 556	128 019
Italy					
Ferro-manganese	* 27 000	* 27 000	* 27 000	* 27 000	* 27 000
Ferro-silico-manganese	110 000	153 000	67 000	82 000	* 80 000
Kosovo					
Ferro-nickel	* 30 200	* 33 300	* 39 100	* 39 000	* 29 000
Macedonia					
Ferro-silico-manganese	14 179	—	—	—	—
Ferro-nickel	19 247	20 001	18 054	17 699	10 603
Ferro-silicon	42 402	72 279	73 014	45 698	24 431
Norway					
Ferro-manganese	325 900	306 700	312 400	* 350 000	* 300 000
Ferro-silico-manganese	271 400	301 400	314 300	* 315 000	* 315 000
Ferro-silicon	203 886	337 281	192 389	243 813	249 475
Silicon metal	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Poland					
Ferro-manganese	800	820	549	—	—
Ferro-silico-manganese	200	100	32	—	—
Ferro-silicon	78 115	73 589	62 878	77 754	77 682
Other ferro-alloys	300	11 250	24 909	460	12 517
Romania					
Ferro-silico-manganese	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Russia					
Spiegeleisen	* 7 000	* 7 000	* 7 000	* 7 000	* 7 000
Ferro-chrome	477 600	* 450 000	* 400 000	363 286	268 439
Ferro-silico-chrome	* 4 200	* 4 200	* 4 200	* 4 200	* 4 200
Ferro-manganese	* 170 000	* 170 000	* 170 000	155 700	124 200
Ferro-silico-manganese	* 148 000	* 148 000	* 148 000	188 895	203 216
Ferro-molybdenum	7 018	5 297	4 503	* 4 500	* 4 500
Ferro-nickel	20 049	* 20 000	* 20 000	* 20 000	* 20 000
Ferro-silicon	1 042 000	* 1 050 000	* 1 050 000	1 057 909	935 912
Ferro-vanadium	14 381	14 059	14 076	12 277	12 392
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-silico-manganese	50 089	26 794	29 643	27 100	* 27 000
Ferro-silicon	32 726	41 664	39 300	38 200	* 38 000
Other ferro-alloys	20 059	* 20 000	22 300	30 200	* 30 000

## Production of ferro-alloys

tonnes (metric)

Country	2012	2013	2014	2015	2016
<b>Spain</b>					
Ferro-manganese	* 80 200	106 900	227 000	* 225 000	* 220 000
Ferro-silico-manganese	148 100	136 100	128 700	* 130 000	* 129 000
Ferro-silicon	* 68 600	* 80 500	* 80 500	* 80 000	* 80 000
Silicon metal	* 27 200	* 29 200	* 29 200	* 30 000	* 30 000
<b>Sweden</b>					
Ferro-chrome	35 800	55 078	65 703	82 616	81 102
<b>Turkey</b>					
Ferro-chrome	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
Ferro-silico-chrome	* 3 000	* 3 000	* 3 000	* 3 000	* 3 000
<b>Ukraine</b>					
Ferro-manganese	163 921	88 626	104 291	100 209	* 100 200
Ferro-silico-manganese	823 131	724 892	960 657	750 181	* 750 200
Ferro-nickel	119 652	121 586	114 222	95 209	* 95 200
Ferro-silicon	150 265	191 207	167 977	114 826	* 114 800
Other ferro-alloys	22 115	15 908	15 326	19 360	* 19 400
<b>Egypt</b>					
Ferro-silicon (a)	54 930	49 060	56 794	* 57 000	* 57 000
Other ferro-alloys (a)	* 30 000	* 30 000	* 12 000	* 12 000	* 12 000
<b>South Africa</b>					
Ferro-chrome	3 063 257	3 219 000	* 3 000 000	* 3 000 000	* 3 000 000
Ferro-manganese	* 654 000	* 650 000	* 650 000	* 650 000	* 650 000
Ferro-silico-manganese	149 000	* 150 000	* 150 000	* 150 000	* 150 000
Ferro-silicon	91 000	* 90 000	* 90 000	* 90 000	* 90 000
Ferro-vanadium	* 16 000	* 16 000	* 16 000	* 16 000	* 16 000
Silicon metal	* 47 000	* 50 000	* 50 000	* 50 000	* 50 000
<b>Zimbabwe</b>					
Ferro-chrome	195 750	129 554	235 256	190 837	* 190 000
<b>Canada</b>					
Ferro-niobium	4 710	4 920	5 770	5 760	* 6 000
Ferro-silicon	31 979	38 817	35 500	* 35 000	* 35 000
Ferro-vanadium	800	800	800	* 800	* 600
Silicon metal	* 30 000	* 12 000	* 30 000	* 30 000	* 25 000
<b>Dominican Republic</b>					
Ferro-nickel	38 433	23 419	—	—	* 30 900
<b>Mexico</b>					
Ferro-manganese	61 845	60 674	67 506	67 919	84 529
Ferro-silico-manganese	161 221	157 855	164 852	139 363	134 251
<b>USA</b>					
Ferro-silicon & silicon metal	499 000	468 000	502 000	* 525 000	* 525 000
<b>Argentina</b>					
Ferro-silico-manganese	* 11 000	* 11 000	* 11 000	* 11 000	* 10 000
Ferro-silicon	* 11 000	* 11 000	* 11 000	* 11 000	* 11 000
<b>Brazil</b>					
Ferro-chrome	181 425	174 200	188 700	173 500	* 175 000
Ferro-silico-chrome	18 890	13 184	* 13 000	* 13 000	* 13 000
Ferro-silico-magnesium	21 200	* 20 000	* 20 000	* 20 000	* 20 000
Ferro-manganese	88 714	83 348	* 80 000	* 40 000	* 50 000
Ferro-silico-manganese	241 705	227 652	* 230 000	* 230 000	* 230 000
Ferro-nickel	94 400	34 500	37 200	71 500	* 75 000
Ferro-niobium	50 400	46 600	51 700	150 000	* 150 000
Ferro-silicon	203 881	158 000	230 000	* 200 000	* 200 000
Silicon metal	230 000	230 000	230 000	150 000	* 150 000
Other ferro-alloys	38 784	* 40 000	* 40 000	* 40 000	* 40 000
<b>Chile</b>					
Ferro-molybdenum	15 451	13 072	14 584	* 14 500	* 14 500
<b>Colombia</b>					
Ferro-nickel	138 966	137 995	* 113 000	* 100 500	* 101 600
<b>Venezuela</b>					
Ferro-manganese	* 12 000	* 12 000	* 12 000	* 12 000	* 12 000
Ferro-silico-manganese	14 200	* 14 200	* 14 000	* 14 000	* 14 000
Ferro-nickel	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Ferro-silicon	72 300	* 74 300	* 80 000	* 80 000	* 80 000

## Production of ferro-alloys

tonnes (metric)

Country	2012	2013	2014	2015	2016
Bahrain					
Ferro-manganese	35 000	35 000	* 35 000	* 35 000	* 35 000
Ferro-silicon	3 000	3 000	* 3 000	* 3 000	* 3 000
Bhutan					
Ferro-silicon	* 82 000	* 83 000	* 79 500	* 104 500	* 106 000
China					
Ferro-alloys	* 30 300 000	37 762 000	37 860 000	36 664 000	35 588 000
Silicon metal	1 136 800	1 452 100	1 705 000	* 1 700 000	* 1 700 000
India					
Ferro-aluminium (b)	4 935	5 497	3 737	3 212	4 345
Ferro-chrome (b)	944 000	944 000	944 000	944 000	944 000
Ferro-silico-magnesium (b)	19 205	21 964	26 123	20 541	20 183
Ferro-manganese (b)	518 000	518 000	518 000	518 000	518 000
Ferro-silico-manganese (b)	236 541	225 395	249 691	269 920	300 625
Ferro-molybdenum (b)	1 076	1 231	1 295	1 459	1 603
Ferro-silicon (b)	90 000	90 000	90 000	90 000	90 000
Ferro-titanium (b)	630	821	545	198	291
Ferro-vanadium (b)	796	906	1 035	937	1 329
Other ferro-alloys (b)	* 730	* 730	* 730	* 730	* 730
Indonesia					
Ferro-manganese	* 13 000	* 12 000	* 12 000	* 12 000	* 12 000
Ferro-silico-manganese	* 9 000	* 8 000	* 8 000	* 8 000	* 8 000
Ferro-nickel	91 860	91 245	84 255	* 182 000	* 411 000
Iran					
Ferro-chrome (c)	* 8 000	* 8 000	* 8 000	* 8 000	* 8 000
Ferro-silicon (c)	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Japan					
Ferro-chrome	19 392	21 671	(d) ...	(d) ...	(d) ...
Ferro-manganese	436 171	460 936	463 345	465 952	473 740
Ferro-silico-manganese	52 287	24 741	(d) ...	(d) ...	(d) ...
Ferro-molybdenum	4 616	4 550	(d) ...	(d) ...	(d) ...
Ferro-nickel	371 913	402 768	379 291	396 969	333 448
Ferro-vanadium	4 403	4 433	(d) ...	(d) ...	(d) ...
Other ferro-alloys	19 364	19 394	79 912	73 651	77 453
Kazakhstan					
Ferro-chrome	1 305 343	1 337 275	1 351 803	1 414 476	1 525 222
Ferro-silico-chrome	164 853	165 195	158 825	74 609	94 467
Ferro-silico-manganese	251 530	203 926	200 379	164 189	125 898
Ferro-silicon	464	470	* 470	* 470	* 470
Other ferro-alloys	1 845	646	4 130	88 646	70 627
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	* 16 000	* 21 000	* 22 000	* 16 000	* 23 000
Australia					
Ferro-manganese & ferro-silico-manganese (a)	198 000	234 000	269 000	278 000	222 000
Silicon metal	* 43 000	* 52 000	* 54 000	* 51 000	* 51 000
New Caledonia					
Ferro-nickel	184 476	174 078	224 884	228 484	261 420

### 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) Years ended 30 June of that stated  
(b) Years ended 31 March following that stated  
(c) Years ended 20 March following that stated  
(d) Included with 'other ferro-alloys'



## Production of kaolin

tonnes (metric)

Country	2012	2013	2014	2015	2016
Austria	13 497	11 558	14 343	12 894	13 558
Belgium	* 300 000	* 300 000	* 300 000	* 300 000	* 300 000
Bosnia & Herzegovina	149 495	44 940	21 610	252 268	248 685
Bulgaria	33 900	22 600	6 900	* 6 500	* 6 500
Czech Republic (a)	624 000	609 000	617 000	648 000	648 000
France	308 000	300 000	311 000	310 000	* 310 000
Germany (b)	* 1 100 000	* 1 100 000	1 100 000	1 100 000	1 023 000
Greece	6 268	—	—	—	—
Italy	* 180 000	* 180 000	* 180 000	* 180 000	* 180 000
Poland (c)	137 800	166 000	197 322	146 500	148 900
Portugal	321 689	248 008	269 073	251 582	261 912
Romania	—	32 722	30 638	* 30 000	* 30 000
Russia	* 45 000	* 45 000	* 45 000	* 45 000	* 45 000
Serbia	69 487	* 70 000	* 70 000	* 70 000	* 70 000
Slovakia	3 000	6 000	6 000	6 000	11 000
Spain (c)	402 251	410 717	344 414	391 960	350 000
Turkey	988 081	1 027 189	734 072	1 887 302	* 1 900 000
Ukraine	1 217 909	1 179 380	1 426 447	1 814 786	* 1 814 800
United Kingdom	* 1 150 000	* 1 110 000	* 1 090 000	* 1 014 000	* 940 000
Algeria	100 000	42 500	181 068	51 300	* 50 000
Egypt	* 300 000	* 300 000	* 300 000	* 300 000	* 300 000
Eritrea	* 200	* 200	* 200	* 200	* 200
Ethiopia (d)	4 000	3 534	4 530	* 4 000	* 4 000
Kenya	* 1 100	* 1 200	* 1 200	* 1 200	* 1 200
Madagascar	230	200	221	* 220	* 220
Nigeria	* 140 000	* 140 000	* 140 000	* 140 000	* 140 000
South Africa	40 999	22 295	27 258	20 339	21 141
Sudan	11 579	26 000	50 000	14 490	* 15 000
Tanzania	1 422	907	3 809	1 953	605
Uganda	42 886	43 875	46 286	34 697	45 909
Cuba	4 000	3 600	1 700	1 500	2 500
Guatemala	1 866	1 339	1 285	1 101	793
Mexico	514 730	669 860	546 437	366 049	* 366 000
USA (e)	5 900 000	6 140 000	6 310 000	5 990 000	* 5 710 000
Argentina	66 574	* 70 000	* 65 000	* 60 000	* 55 000
Brazil (a)	2 388 000	2 139 000	2 055 000	1 700 000	1 700 000
Chile	60 429	60 000	60 000	60 000	60 000
Colombia	* 50 000	51 168	* 36 000	20 282	8 510
Ecuador	42 564	100 195	40 236	64 486	4 110
Paraguay	* 6 000	* 6 000	* 6 000	* 6 000	* 6 000
Peru	34 585	32 249	19 964	43 251	19 262
Venezuela	2 447	2 793	* 3 000	* 3 000	* 3 000
China	* 3 300 000	* 3 300 000	* 3 300 000	* 3 200 000	* 3 200 000
India (f)(g)	101 354	71 901	74 207	* 74 000	* 74 000
Indonesia	* 180 000	* 180 000	* 180 000	* 180 000	* 180 000
Iran (h)	1 503 377	* 1 000 000	1 879 943	1 169 366	* 1 500 000
Japan	* 13 000	* 13 000	* 13 000	* 13 000	* 13 000
Jordan	76 194	* 65 000	* 65 000	* 65 000	* 65 000
Korea (Rep. of)	796 603	847 172	682 749	587 787	586 973
Malaysia	438 923	293 480	219 652	294 693	284 023
Oman	139 500	114 700	66 600	169 500	173 800
Pakistan (i)	21 555	22 917	16 191	18 956	21 683
Philippines	4 631	6 568	7 050	8 179	10 059
Saudi Arabia	137 000	101 000	106 000	111 000	196 000
Sri Lanka	11 805	12 990	* 13 000	* 13 000	* 13 000
Taiwan	26 376	15 963	1 808	732	4 035
Thailand (a)	175 464	* 175 000	* 175 000	* 175 000	* 175 000
Uzbekistan (f)	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Vietnam	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000

## Production of kaolin

tonnes (metric)

Country	2012	2013	2014	2015	2016
Australia (i)	89 229	204 521	171 933	246 047	164 554
New Zealand	11 578	13 066	61 382	13 659	61 650
World total	24 000 000	23 400 000	23 900 000	23 900 000	23 800 000

### Note(s)

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

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

## Mine production of lead

tonnes (metal content)

Country	2012	2013	2014	2015	2016
Bosnia & Herzegovina	5 238	6 308	5 599	6 199	6 803
Bulgaria (a)	15 949	16 914	15 618	16 755	22 062
Greece	18 060	18 010	16 700	14 500	12 300
Ireland, Republic of	47 400	42 950	40 500	31 300	19 600
Kosovo	5 295	6 378	7 676	5 541	6 530
Macedonia	39 184	42 826	43 810	37 922	31 034
Montenegro	1 958	2 453	2 755	3 476	5 186
Poland	89 000	79 000	83 329	69 190	62 750
Portugal	87	1 496	3 192	3 077	4 126
Romania	* 5 300	* 400	* —	* —	* —
Russia	151 000	165 000	196 000	180 000	193 000
Serbia	2 500	3 100	3 700	3 300	3 500
Slovakia	166	235	162	* 200	* 200
Spain	3 800	2 200	1 300	1 598	4 900
Sweden	63 551	59 556	70 848	79 354	75 830
Turkey	57 017	76 638	62 190	33 477	29 480
United Kingdom	(b) 61	(c)* 100	(d)* 100	(d)* 100	(d)* 100
Burkina Faso	—	2 168	1 902	* 2 000	—
Congo, Democratic Republic	800	600	800	700	100
Morocco	27 526	30 765	27 505	32 138	37 300
Namibia	9 530	11 224	11 788	10 746	6 116
Nigeria	11 300	11 500	11 400	* 8 000	* 13 000
South Africa	52 489	41 848	29 348	34 573	39 344
Canada	64 116	20 678	3 617	3 809	12 658
Guatemala	2 300	863	10 359	10 153	9 970
Honduras	12 400	11 600	15 500	9 800	3 985
Mexico	238 091	253 361	250 462	263 772	241 271
USA	345 000	339 000	379 000	367 000	* 335 000
Argentina	26 500	28 700	29 900	29 800	* 28 000
Bolivia	81 095	82 131	75 572	75 272	89 510
Brazil	8 922	8 020	10 978	* 9 400	9 700
Chile	410	1 829	2 678	2 979	1 110
Peru	249 236	266 472	277 000	315 525	314 422
Burma	* 9 800	* 11 700	* 18 000	* 14 200	* 27 500
China	2 613 200	2 696 538	2 608 619	2 340 000	2 230 000
India (e)	104 345	109 812	111 267	147 399	150 886
Iran	45 000	42 000	36 000	* 41 000	* 42 000
Kazakhstan	38 000	40 800	37 800	40 700	70 700
Korea (Rep. of)	1 940	2 500	2 764	2 921	2 840
Korea, Dem. P.R. of	* 25 000	* 40 000	* 36 000	* 32 000	* 37 000
Laos	164	1 600	100	400	400
Pakistan	* 600	* 300	* 1 200	* 100	1 196
Tajikistan	16 000	17 000	28 000	31 000	47 000
Uzbekistan	* 3 000	* 3 000	* 3 000	* 3 000	* 2 000
Vietnam	* 200	* —	* 1 400	* 1 100	* 1 100
Australia	620 598	711 210	727 954	653 488	453 374
World total	5 100 000	5 300 000	5 300 000	5 000 000	4 700 000

### Note(s)

(a) Metal content of ore

(b) By-product of gold mining in Northern Ireland.

(c) By-product of Pennine fluorspar operations and of gold mining in Northern Ireland.

(d) By-product of Pennine fluorspar operations

(e) Years ended 31 March following that stated

## Production of refined lead

tonnes (metric)

Country	2012	2013	2014	2015	2016
Austria	24 504	25 000	25 100	24 400	25 000
Belgium	119 000	129 429	133 252	130 000	142 100
Bosnia & Herzegovina	3 327	2 382	1 227	142	182
Bulgaria	85 000	90 000	92 000	90 000	89 000
Croatia	—	—	—	* 1 900	* 4 400
Czech Republic	41 000	42 000	44 000	44 000	* 43 000
Estonia	8 046	7 581	8 588	8 329	8 348
France	83 000	71 000	72 000	72 000	70 000
Germany	423 000	400 000	380 000	378 000	378 000
Greece	* 6 000	* 6 000	* 12 000	* 14 000	* 20 000
Ireland, Republic of	16 000	17 000	17 200	17 200	* 18 000
Italy	138 400	179 700	209 600	207 500	222 700
Netherlands	27 000	27 000	31 000	32 000	31 000
Poland	141 000	145 400	149 000	155 400	154 900
Portugal	5 000	4 000	5 000	* 5 000	* 5 000
Romania	13 200	14 000	12 000	* 12 000	* 11 000
Russia	110 000	106 000	96 500	116 000	* 110 000
Serbia	13 000	15 000	* 15 000	* 15 000	* 15 000
Slovenia	12 000	12 000	11 000	12 000	* 12 000
Spain	160 000	157 000	166 000	165 000	166 000
Sweden	61 528	68 713	68 708	71 293	74 367
Turkey	* 50 000	* 50 000	* 55 000	* 56 000	* 58 000
Ukraine	43 200	48 800	42 900	31 800	35 600
United Kingdom	311 930	296 000	267 000	351 200	374 600
Algeria	6 000	* 9 000	* 9 000	* 9 000	* 8 000
Ghana (a)	2 961	3 076	2 817	3 048	1 823
Kenya	* 1 000	* 1 200	* 1 000	* 1 100	* 1 800
Morocco	15 600	* 14 000	* 15 000	* 14 000	* 11 000
Mozambique (a)	1 500	1 900	2 310	2 494	2 844
Nigeria	* 15 000	* 14 000	* 14 000	* 2 000	* 9 000
Senegal (a)	3 366	2 607	2 187	1 857	3 576
South Africa	54 000	52 000	52 000	52 000	54 000
Uganda	* 500	* 500	* 500	* 500	* 500
Zambia	* 4 000	* 5 000	* 5 000	* 5 000	* 5 000
Canada	279 150	281 781	281 456	268 863	274 226
Costa Rica	4 000	7 000	7 000	7 000	* 7 000
Dominican Republic	5 000	6 000	6 000	6 000	* 6 000
Guatemala	* 11 000	* 12 000	* 12 000	* 12 000	* 12 000
Honduras	—	—	2 000	2 000	* 2 000
Mexico	279 100	271 200	363 500	356 000	341 400
USA (b)	1 220 000	1 264 000	1 020 000	1 050 000	1 120 000
Argentina	* 90 300	91 000	92 000	92 000	* 90 000
Bolivia	500	—	1 924	459	41
Brazil	165 397	151 964	160 393	* 160 000	176 216
Chile	9 000	14 000	* 10 000	* 10 000	* 11 000
Colombia	* 42 000	* 42 000	* 42 000	* 42 000	* 42 000
Peru	5 000	62 900	54 550	1 494	* —
Venezuela	* 25 000	* 22 000	* 20 000	* 20 000	* 16 000
Burma	* 200	* 200	* 200	* 600	* 5 900
China	4 590 900	4 935 100	4 704 319	4 405 000	4 665 000
India	460 100	463 000	477 000	500 600	518 500
Indonesia	* 45 000	* 42 000	* 46 000	* 46 000	* 48 000
Iran	81 000	76 000	72 000	78 000	84 000
Israel	25 000	25 000	25 000	25 000	* 27 000
Japan	258 527	251 854	* 240 000	* 231 000	* 236 000
Kazakhstan	88 099	91 072	127 064	120 108	134 089
Korea (Rep. of)	460 000	427 700	639 000	641 000	831 000
Korea, Dem. P.R. of	* 3 000	* 3 000	* 3 000	* 1 000	* 2 000
Lebanon	* 7 200	* 7 200	* 7 200	* 10 000	* 10 000
Malaysia	32 100	32 000	26 200	25 300	24 000
Pakistan (c)	1 414	2 527	2 549	—	—
Philippines	* 32 000	* 32 000	* 30 000	* 28 000	* 18 000
Saudi Arabia	* 37 000	* 37 000	* 36 000	* 37 000	* 50 000
Sri Lanka (a)	3 762	4 803	4 528	2 548	3 006

## Production of refined lead

tonnes (metric)

Country	2012	2013	2014	2015	2016
Taiwan	35 000	34 000	40 000	46 000	48 000
Thailand	86 507	87 385	79 250	86 000	90 000
United Arab Emirates	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
Australia	207 000	232 000	226 000	223 000	224 000
New Zealand	* 3 000	—	—	—	—
World total	10 600 000	11 000 000	10 900 000	10 600 000	11 300 000

### 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	2012	2013	2014	2015	2016
Portugal					
Lepidolite	20 698	19 940	17 459	17 120	25 758
Zimbabwe	47 000	44 000	44 000	44 000	48 000
Canada	* —	* —	108	—	—
USA (a)	* 1 000	870	* 900	* 900	* 900
Argentina (b)(c)	14 369	13 305	31 434	19 159	30 335
Bolivia	—	—	—	—	(b) 162
Brazil					
Spodumene	7 084	7 982	8 519	* 8 500	* 8 500
Chile (d)	71 594	60 646	62 253	56 375	78 182
China (a)	* 1 900	* 2 100	* 1 900	* 2 000	* 2 000
Australia					
Spodumene	452 921	* 363 000	* 444 000	* 428 000	* 533 000
World total (Li content)	28 500	24 700	29 500	26 200	34 300

### 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	2012	2013	2014	2015	2016
Austria	778 810	714 422	754 096	702 504	565 892
Greece	349 998	314 770	391 140	383 312	418 558
Netherlands (a)	290 873	249 568	285 907	257 510	265 857
Poland	83 860	97 000	92 000	96 000	77 920
Russia	* 2 600 000	* 2 600 000	* 2 600 000	* 2 600 000	* 2 600 000
Slovakia	618 400	584 000	557 100	501 200	* 430 900
Spain	649 977	836 269	836 869	464 691	525 198
Turkey	2 475 828	2 597 465	2 377 157	3 335 258	* 2 800 000
South Africa	* 30 000	* 40 000	* 50 000	* 50 000	* 60 000
Canada (b)	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Guatemala	27 132	17 196	24 268	* 20 000	23 137
Mexico	100 724	101 000	101 000	101 000	* 101 000
Brazil (c)	1 707 730	1 084 194	1 152 233	* 1 150 000	* 1 150 000
Colombia	—	1 774	2 218	1 538	1 066
China	* 16 000 000	* 17 000 000	* 20 500 000	* 19 000 000	* 19 000 000
India (d)	224 315	196 940	285 009	327 663	299 167
Iran (e)	143 000	109 496	202 151	151 881	* 150 000
Israel (f)	105 610	91 040	135 966	* 136 000	* 136 000
Korea, Dem. P.R. of	* 250 000	* 250 000	* 250 000	* 250 000	* 250 000
Nepal (g)	—	—	225	60	—
Pakistan (h)	5 444	6 705	3 770	24 627	35 228
Philippines	4 822	5 998	* 6 000	7 158	10 310
Saudi Arabia	254 000	235 000	286 000	294 000	286 200
Australia (h)	614 139	522 187	611 547	680 967	489 036
World total	27 500 000	27 800 000	31 700 000	30 700 000	29 800 000

### 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 15 July of that stated
- (h) Years ended 30 June of that stated

## Production of primary magnesium metal

tonnes (metric)

Country	2012	2013	2014	2015	2016
Russia	13 798	13 970	13 744	12 460	14 346
USA	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
Brazil	* 16 000	* 16 000	* 16 000	* 15 000	* 15 000
China	698 200	770 407	873 649	852 064	910 300
India	* 200	* 200	* 200	* 200	* 200
Israel	27 292	27 399	26 000	29 708	34 649
Kazakhstan	22 000	13 000	9 500	8 100	* 10 000
Korea (Rep. of)	* 2 500	* 7 500	* 10 000	* 10 000	* 10 000
Malaysia	—	150	2 950	* —	* —

### 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 compounds.
- (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 10,000 t.

## Production of manganese ore

tonnes (metric)

Country	2012	2013	2014	2015	2016
Bulgaria	39 100	103 600	93 700	46 500	41 700
Georgia (a)	* 370 000	* 370 000	* 370 000	* 370 000	* 370 000
Hungary	51 000	35 000	51 000	57 000	19 000
Romania	8 993	21 300	12 662	40 262	4 477
Russia	8 200	—	—	—	* —
Turkey	192 756	321 785	245 830	142 809	* 150 000
Ukraine	1 234 007	1 524 696	1 526 218	* 1 525 000	* 1 525 000
Burkina Faso	—	—	—	* 1 600	—
Egypt (b)	* 40 000	31 325	22 299	* —	* —
Gabon	3 363 170	4 091 399	4 081 000	* 4 100 000	* 4 100 000
Ghana	1 490 634	1 997 911	1 531 394	1 562 769	2 018 254
Ivory Coast	120 486	271 562	308 401	294 904	294 904
Morocco	90 200	111 000	91 271	71 700	* 130 000
Namibia	188 862	133 474	104 527	38 360	16 896
South Africa					
Metallurgical	8 931 472	* 10 930 000	* 13 830 000	* 15 947 000	* 13 708 000
Chemical	11 943	* 22 000	* 27 000	* 32 000	* 27 500
Sudan	—	3 250	20 000	31 400	* 32 000
Mexico	510 942	580 309	652 465	592 728	549 589
Brazil	2 796 000	2 833 000	2 723 000	2 816 675	2 800 000
Burma	* 286 000	* 394 000	* 242 000	* 70 000	* 272 000
China	* 14 500 000	* 15 000 000	* 15 000 000	* 15 000 000	* 15 000 000
India (c)	2 342 169	2 626 291	2 369 481	2 166 947	2 393 182
Iran (d)	172 560	163 367	139 736	86 523	* 85 000
Kazakhstan	2 975 000	2 852 100	2 608 800	1 625 700	1 569 400
Malaysia	1 099 585	1 125 127	835 429	480 727	700 717
Oman	37 500	49 000	37 500	7 400	21 300
Thailand	8 151	14 320	14 330	9 000	9 150
Vietnam	* 15 800	* 9 700	* 10 000	20 700	13 400
Australia	7 178 975	7 425 985	7 587 207	6 281 497	5 327 090
World total	48 100 000	53 000 000	54 500 000	53 400 000	51 200 000

### Note(s)

(1) In addition to the countries listed, Colombia and Cuba may produce manganese ore

(a) Marketable

(b) Fiscal years ending 30 June of that stated

(c) Years ended 31 March following that stated

(d) Years ended 20 March following that stated



## Production of mercury

kilograms

Country	2012	2013	2014	2015	2016
Russia	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Morocco	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Mexico (a)	* 235 300	* 266 900	* 300 900	* 306 500	* 261 500
USA	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Argentina	37 000	28 000	* 25 000	* 25 000	* 25 000
Chile (b)	(a)* 47 900	(a)* 19 300	* 18 000	* 14 000	* 2 000
China	1 347 000	1 822 000	2 259 000	2 800 000	3 483 000
Kyrgyzstan	74 000	31 000	46 000	20 000	* 20 000
Tajikistan	103 000	130 000	85 000	96 000	* 100 000
World total	1 900 000	2 400 000	2 800 000	3 300 000	4 000 000

### 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	2012	2013	2014	2015	2016
Finland	12 112	11 244	11 973	11 836	10 843
France (a)	* 18 000	* 19 700	* 20 200	* 20 700	* 19 600
Russia	* 9 000	* 7 000	* 6 000	4 823	3 701
Spain (a)	3 518	3 462	4 049	4 355	4 000
Turkey	6 077	1 076	17 440	44 637	* 50 000
Madagascar	12 532	10 779	9 400	19 000	* 22 000
South Africa	400	309	383	29	8
Sudan	324	500	1 000	—	* —
Canada	* 22 000	* 22 000	* 22 000	* 22 000	* 22 000
Mexico	160	160	160	145	* 145
USA (a)(b)	47 500	48 100	48 200	36 200	* 30 200
Argentina	5 785	* 7 500	* 5 000	* 5 000	* 5 000
Brazil	5 220	9 728	427 341	* 450 000	* 450 000
China (c)	* 149 000	* 161 000	* 159 000	* 151 000	* 157 000
India (d)	1 256	1 660	636	* 600	* 600
Iran (e)	* 7 000	5 635	* 5 600	* 5 600	* 5 600
Korea (Rep. of) (f)	25 594	25 143	24 205	17 405	12 934
Malaysia (g)	3 967	4 363	5 659	4 788	4 716
Sri Lanka	1 260	1 493	* 1 500	* 1 500	* 1 500
Taiwan	6 844	8 931	5 016	8 287	1 879
World total	338 000	350 000	775 000	808 000	802 000

### 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) Conservative BGS estimates, based on exports

(d) Years ended 31 March following that stated

(e) Years ended 20 March following that stated

(f) Mainly sericite

(g) Sericite

## Mine production of molybdenum

tonnes (metal content)

Country	2012	2013	2014	2015	2016
Armenia	5 446	5 934	6 022	5 324	5 438
Norway	4	8	2	1	2
Russia	4 838	3 605	3 114	3 254	* 3 300
Turkey	—	1	—	3	1
Canada	8 954	8 952	8 681	1 983	2 764
Mexico	11 366	12 562	14 370	11 327	11 896
USA	61 500	61 000	68 200	47 400	* 31 600
Argentina	4 850	3 829	1 907	1 730	957
Brazil	185	* 200	* 200	* 200	* 200
Chile	34 793	38 433	48 898	52 398	55 834
Peru	16 790	18 140	17 000	20 153	25 757
China	120 870	122 265	128 538	135 000	129 150
Iran (a)	3 512	3 470	4 000	6 705	* 6 500
Mongolia	1 904	1 819	1 999	2 557	2 431
World total	275 000	280 000	303 000	288 000	276 000

### 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	2012	2013	2014	2015	2016
Norway	320 000	320 000	331 000	324 000	* 324 000
Russia					
Nepheline syenite	4 947 000	4 662 000	4 396 000	4 111 000	4 432 000
Nepheline concentrates	1 056 700	990 600	940 300	951 900	958 100
Canada	592 000	674 000	670 000	599 000	475 000

## Mine production of nickel

tonnes (metal content)

Country	2012	2013	2014	2015	2016
Albania	750	2 151	5 091	6 280	3 952
Finland (a)	19 073	18 560	19 281	9 383	20 654
Greece	20 600	19 800	20 600	20 800	21 800
Kosovo	4 436	7 607	6 724	7 418	4 265
Macedonia	* 1 700	—	—	—	—
Norway	351	296	290	300	300
Poland	840	570	780	840	770
Russia	268 700	264 000	264 000	261 000	222 000
Spain	2 398	7 574	8 631	7 213	—
Turkey	3 805	1 076	3 034	8 637	* 10 000
Botswana	17 948	22 848	14 958	16 789	14 273
Madagascar	5 695	25 148	37 053	47 271	42 105
Morocco	288	160	—	—	* —
South Africa (b)	45 945	51 208	54 956	56 689	48 994
Zimbabwe	7 899	12 962	16 633	16 109	17 743
Canada	211 701	227 743	228 867	234 519	235 707
Cuba	64 600	55 600	51 600	53 800	51 600
Dominican Republic	15 186	9 355	—	—	93 000
Guatemala	2 400	10 200	46 800	56 400	45 900
USA	—	—	4 093	27 167	24 114
Brazil	89 600	77 400	85 600	89 300	86 400
Colombia	51 595	49 369	41 221	36 671	37 000
Venezuela	8 100	—	2 500	2 581	—
Burma	—	* 6 100	* 21 000	* 26 400	* 11 800
China	93 300	93 151	101 067	101 400	90 000
Indonesia	1 013 000	1 340 000	188 000	129 751	179 600
Philippines	317 621	315 633	393 262	418 292	300 506
Vietnam	—	1 166	6 854	8 607	4 272
Australia	304 152	292 619	268 533	229 381	203 135
New Caledonia	131 693	164 406	178 080	186 065	208 837
Papua New Guinea	5 283	11 369	20 987	25 582	22 269
World total	2 709 000	3 088 000	2 090 000	2 085 000	2 001 000

### Note(s)

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

(b) Includes metal and metal content of sulphate and concentrates

## Smelter/refinery production of nickel

tonnes (metric)

Country	2012	2013	2014	2015	2016
Austria	500	500	600	700	700
Finland	46 275	44 498	42 750	60 709	85 424
France	13 200	12 100	8 400	6 500	4 600
Greece	18 630	17 500	18 481	17 113	17 071
Kosovo	4 400	7 600	6 700	7 400	4 300
Macedonia	19 200	20 000	18 100	17 700	10 600
Norway	91 687	91 017	90 526	91 222	92 735
Poland	840	570	780	840	770
Russia	254 100	241 800	234 700	231 200	192 100
Ukraine	20 800	26 800	25 100	20 800	18 800
United Kingdom	39 400	42 400	39 100	38 804	45 194
Madagascar	5 695	25 148	37 053	47 271	42 105
Morocco	* 300	* 200	200	200	200
South Africa	32 900	32 200	34 100	41 900	42 100
Zimbabwe	1 800	2 800	4 600	—	—
Canada	146 850	152 728	149 486	149 716	158 299
Cuba	25 700	16 600	13 300	14 600	14 400
Dominican Republic	15 186	9 355	—	—	* 9 300
Guatemala	—	—	* 4 000	10 826	8 688
Brazil	59 779	57 500	82 370	89 302	77 100
Colombia	51 595	49 369	41 221	36 671	37 000
Venezuela	8 100	5 200	2 500	2 581	—
Burma	—	* 6 100	* 21 000	* 26 400	* 11 800
China	519 200	693 500	690 500	* 600 000	573 400
Indonesia	18 372	21 200	21 900	* 46 000	* 117 000
Japan	169 600	177 810	177 782	192 789	195 565
Korea (Rep. of)	19 870	23 325	24 903	34 882	44 857
Australia	125 636	141 251	137 762	152 978	120 520
New Caledonia	45 383	48 370	62 049	77 530	95 983
World total	1 755 000	1 967 000	1 990 000	2 017 000	2 021 000

### 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.

## Production of perlite

tonnes (metric)

Country	2012	2013	2014	2015	2016
Armenia	181	53	14	—	4
Bulgaria	3 700	—	—	—	* —
Greece	876 000	890 000	985 000	890 610	700 000
Hungary	72 364	64 944	68 546	65 459	* 65 000
Italy	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Russia	* 45 000	* 45 000	* 45 000	* 45 000	* 45 000
Slovakia	24 000	16 000	17 000	25 000	19 000
Turkey	887 600	1 075 949	879 125	846 242	* 900 000
Ukraine	* 36 000	* 36 000	* 36 000	* 36 000	* 36 000
South Africa	* 400	* 400	* 400	* 400	* 400
Mexico	29 950	27 200	26 000	13 000	* 13 000
USA	393 000	419 000	462 000	459 000	* 473 000
Argentina	24 663	19 793	* 20 000	* 17 000	* 15 000
Chile	—	4 800	800	3 000	5 500
China	* 700 000	* 700 000	* 700 000	* 700 000	* 700 000
Iran (a)	836 928	1 120 951	351 009	395 182	* 400 000
Philippines	9 221	14 249	17 134	35 675	38 745
Thailand	41 400	14 293	54 100	17 200	15 690
Australia (b)	940	1 300	—	—	620
New Zealand	3 598	—	—	* —	* —

### Note(s)

(1) In addition to the countries listed, Algeria, Canada, Djibuti, Georgia, 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	2012	2013	2014	2015	2016
Albania	1 029 319	1 203 638	1 342 451	1 279 253	489 410
Austria (a)(b)	917 889	917 321	945 034	905 999	809 358
Azerbaijan	43 600 000	43 500 000	(b) 41 952 400	(b) 41 628 300	(b) 41 050 700
Belarus	1 660 000	1 645 000	1 645 000	1 645 000	1 645 000
Bulgaria	23 600	27 400	26 200	23 700	22 600
Croatia	620 835	620 795	535 281	613 281	676 752
Czech Republic	150 000	152 000	148 000	126 000	116 000
Denmark	9 968 000	8 657 000	8 159 150	7 710 265	6 949 005
Estonia (c)	2 180 313	2 379 253	2 295 594	2 002 415	2 156 912
France	809 022	796 645	763 502	829 924	817 319
Georgia	42 194	47 863	42 631	40 206	38 557
Germany	2 633 000	2 638 379	2 429 789	2 412 063	2 355 028
Greece	446 000	440 000	462 000	497 000	601 000
Hungary	700 931	626 890	616 070	633 072	* 650 000
Italy	5 376 629	5 480 000	5 750 000	5 450 000	3 800 000
Lithuania	101 644	86 054	80 862	73 540	63 468
Netherlands	1 650 000	1 729 000	2 089 000	2 004 000	1 558 000
Norway	94 497 000	90 387 000	93 294 000	95 797 000	98 466 000
Poland	677 664	960 672	950 548	927 737	1 001 122
Romania	3 992 011	3 994 122	3 922 784	3 862 744	3 686 000
Russia	517 000 000	523 000 000	525 000 000	533 000 000	549 000 000
Serbia	1 124 794	1 163 988	1 112 303	1 026 686	933 884
Slovakia	14 000	13 000	8 000	10 000	9 000
Slovenia	279	298	366	261	229
Spain	143 526	367 569	305 263	229 567	139 176
Turkey	2 957 000	2 508 894	2 743 565	* 2 700 000	* 2 700 000
Ukraine	3 345 000	3 071 000	2 758 000	2 531 000	* 2 530 000
United Kingdom	44 560 000	40 646 000	39 689 000	47 462 000	48 073 000
Algeria	67 200 000	64 800 000	68 800 000	67 200 000	68 500 000
Angola	86 900 000	87 300 000	83 000 000	88 700 000	87 900 000
Cameroon	3 129 000	3 399 200	3 850 000	4 896 300	4 716 700
Chad	5 300 000	4 400 000	4 300 000	3 800 000	3 800 000
Congo	13 250 062	13 130 000	13 178 000	13 518 000	15 415 000
Congo, Democratic Republic	1 173 020	1 146 380	1 147 838	1 132 052	1 075 779
Egypt	34 700 000	34 400 000	35 100 000	35 400 000	33 800 000
Equatorial Guinea	14 900 000	14 600 000	13 100 000	13 500 000	13 100 000
Gabon	12 700 000	11 600 000	11 600 000	11 500 000	11 400 000
Ghana	3 928 000	4 960 000	5 311 000	5 161 000	5 060 000
Ivory Coast	1 954 000	1 904 000	1 854 000	1 704 000	1 553 000
Libya	72 387 000	49 459 000	23 897 000	19 996 000	18 810 000
Mauritania	327 000	336 000	299 000	258 900	235 606
Morocco	7 000	6 000	5 000	5 000	* 5 000
Niger	995 700	995 000	995 000	995 000	647 218
Nigeria	114 400 000	109 200 000	112 800 000	112 000 000	98 800 000
Senegal	7 700	15 800	30 100	22 900	3 300
South Africa	137 000	79 000	88 803	70 979	38 796
South Sudan	(d) 1 500 000	4 900 000	7 700 000	7 300 000	5 800 000
Sudan	5 100 000	5 800 000	5 783 400	5 400 000	5 100 000
Tunisia	3 314 000	3 038 000	2 813 000	2 547 000	* 2 500 000
Barbados	37 369	34 923	32 161	34 239	31 944
Canada	161 000 000	183 400 000	186 200 000	191 100 000	191 800 000
Cuba	2 998 900	2 897 100	2 905 300	2 822 000	* 2 800 000
Guatemala	537 620	505 573	508 862	508 222	455 679
Mexico	150 601 000	148 998 583	144 138 810	133 953 966	127 077 904
Trinidad & Tobago	4 222 897	4 180 844	4 186 801	4 052 724	3 693 394
USA	408 705 215	463 954 442	542 522 718	586 713 201	564 105 999
Argentina	29 284 559	28 675 450	28 249 453	28 243 328	27 176 128
Bolivia	1 925 800	2 922 000	3 090 500	3 288 300	3 334 602
Brazil	111 470 000	109 360 000	121 372 585	130 716 876	135 223 698
Chile	321 305	357 838	354 130	254 649	213 032
Colombia	46 866 079	49 742 675	49 430 000	53 000 000	48 800 000
Ecuador	25 696 000	26 842 000	28 359 000	29 100 000	29 300 000
Peru	7 494 774	8 278 655	8 525 044	7 342 379	6 657 419
Suriname	958 219	964 672	988 869	998 387	961 341
Venezuela	139 200 000	137 600 000	138 200 000	135 900 000	124 100 000

## Production of crude petroleum

tonnes (metric)

Country	2012	2013	2014	2015	2016
Afghanistan	* 3 000	4 507	5 080	* 5 100	* 5 100
Bahrain (b)	2 939 000	3 068 000	3 115 000	3 209 000	* 3 210 000
Brunei	7 955 925	6 733 840	6 217 262	6 238 268	5 960 395
Burma (e)	875 000	863 000	826 000	664 000	607 000
China (a)	207 478 000	209 918 500	211 429 200	214 555 800	206 638 000
East Timor (b)	3 661 000	2 519 000	1 615 000	1 585 000	1 006 816
India (e)	37 862 000	37 788 000	37 461 000	36 950 000	36 009 000
Indonesia	43 105 000	41 259 000	39 439 000	39 290 000	36 832 000
Iran	180 681 600	169 763 200	174 239 000	181 606 500	216 431 400
Iraq	152 400 000	153 200 000	160 300 000	197 000 000	218 900 000
Israel	30 690	52 259	60 010	65 383	92 837
Japan	724 000	627 000	588 000	544 000	501 000
Jordan	1 000	1 000	800	500	400
Kazakhstan	79 225 000	81 731 400	80 825 600	79 456 300	78 041 000
Kuwait (f)	153 700 000	151 300 000	150 800 000	149 100 000	152 700 000
Kyrgyzstan	83 600	83 500	82 900	106 700	* 106 700
Malaysia	28 000 000	27 500 000	28 800 000	31 200 000	31 600 000
Mongolia	500 137	705 488	* 900 000	1 206 231	1 134 773
Oman	45 803 815	46 902 251	46 981 924	48 854 229	49 816 773
Pakistan (g)	3 276 442	3 735 038	4 155 885	4 627 053	4 246 335
Philippines	876 595	819 217	995 470	845 024	844 200
Qatar	83 300 000	84 200 000	83 500 000	79 300 000	79 400 000
Saudi Arabia (f)	547 000 000	542 300 000	543 400 000	567 800 000	585 700 000
Syria	8 500 000	2 700 000	1 500 000	1 200 000	1 100 000
Taiwan	11 379	10 511	9 320	9 534	8 446
Tajikistan	29 800	27 300	24 500	24 600	24 600
Thailand	16 200 000	16 600 000	16 300 000	17 200 000	17 600 000
Turkmenistan	11 000 000	11 400 000	12 100 000	12 700 000	12 700 000
United Arab Emirates	154 700 000	165 700 000	167 300 000	175 500 000	182 400 000
Uzbekistan	3 200 000	2 900 000	2 800 000	2 700 000	2 600 000
Vietnam (b)	17 305 300	17 390 000	17 392 000	18 746 000	17 230 000
Yemen, Republic of	8 000 000	8 900 000	6 700 000	2 000 000	800 000
Australia	21 672 309	18 238 139	19 558 279	17 222 771	16 015 145
New Zealand (b)	1 866 590	1 605 470	1 788 250	1 869 660	1 584 650
Papua New Guinea	1 346 000	1 399 000	1 407 000	1 311 000	1 195 000
World total	4 098 000 000	4 133 000 000	4 216 000 000	4 353 000 000	4 377 000 000

### Note(s)

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

- (a) Including oil from shale and coal
- (b) Including natural gas liquids
- (c) From oil shale
- (d) Sudan and South Sudan separated on 9 July 2011
- (e) Years ended 31 March following that stated
- (f) Including shares of production from the Neutral Zone
- (g) Years ended 30 June of that stated



# Production of natural gas

million cubic metres

Country	2012	2013	2014	2015	2016
Albania	18	19	33	* 35	* 35
Austria	1 729	1 359	1 245	1 183	1 253
Azerbaijan	17 242	17 895	18 827	19 236	18 718
Belarus	218	228	222	225	216
Bulgaria	390	282	183	85	80
Croatia	2 013	1 862	1 804	1 828	1 690
Czech Republic	204	207	198	200	169
Denmark	5 480	4 566	4 381	4 374	4 301
France	1 019	340	17	28	* 28
Georgia	5	5	10	11	7
Germany	11 706	10 678	10 060	9 323	8 608
Greece	6	5	5	4	* 4
Hungary	2 205	2 028	1 946	1 887	* 2 000
Ireland, Republic of	381	343	354	* 350	* 350
Italy	8 540	7 710	7 280	6 880	5 300
Netherlands	75 970	81 479	68 621	51 237	47 463
Norway	114 918	108 746	108 820	117 150	116 820
Poland	5 780	5 789	5 648	5 624	5 509
Romania	11 095	11 135	11 345	11 436	9 890
Russia	653 000	668 000	639 000	633 000	639 000
Serbia	672	660	631	626	595
Slovakia	93	91	99	104	87
Slovenia	2	3	3	3	5
Spain	65	62	26	12	6
Turkey	547	562	* 550	* 550	* 550
Ukraine	20 491	21 313	20 138	19 757	* 19 800
United Kingdom	41 054	38 430	38 730	41 276	27 713
Algeria	81 500	82 400	83 300	84 600	91 300
Angola	740	910	720	650	* 650
Cameroon	4	152	308	369	357
Congo	1 161	1 642	1 501	1 501	* 1 500
Egypt	60 900	56 100	48 800	44 300	41 800
Equatorial Guinea	8 377	8 999	* 8 500	8 405	* 8 400
Gabon (a)	380	420	420	378	* 380
Ivory Coast	1 755	2 104	2 109	2 177	* 2 200
Libya	11 100	11 600	11 300	11 800	10 100
Morocco	76	92	104	82	* 80
Mozambique	4 890	5 280	5 607	5 695	* 5 700
Nigeria	43 300	36 200	45 000	50 100	44 900
South Africa	1 186	838	849	1 333	820
Tanzania	—	1 017	958	36 568	45 518
Tunisia	2 794	2 789	2 557	2 479	2 188
Barbados	23	22	21	20	17
Canada	144 440	145 395	151 352	154 278	157 179
Cuba	1 035	1 066	1 200	1 245	1 185
Mexico	64 593	64 346	64 275	59 870	52 248
Trinidad & Tobago	42 604	42 831	42 055	39 603	34 383
USA (a)	680 538	689 062	733 095	766 225	749 200
Argentina	44 124	41 708	41 484	42 896	44 988
Bolivia	18 300	20 800	21 954	21 981	21 134
Brazil	20 845	24 290	24 536	24 862	25 337
Chile	1 207	893	907	1 064	1 175
Colombia	10 897	12 930	11 800	11 100	10 400
Ecuador	510	514	* 550	* 475	* 500
Peru	12 527	12 921	13 687	13 239	14 783
Venezuela	32 800	28 400	28 600	32 400	34 300
Afghanistan	119	159	141	* 140	* 140
Bahrain	16 755	19 241	20 627	21 283	* 21 300
Bangladesh (b)	21 056	22 670	23 232	25 263	27 559
Brunei	12 565	12 206	11 852	12 452	12 054
Burma (c)	13 217	13 648	18 488	19 685	18 478
China	110 608	120 858	130 157	134 610	136 830
East Timor	5 192	5 906	5 320	6 055	5 855

## Production of natural gas

million cubic metres

Country	2012	2013	2014	2015	2016
India (c)	40 679	35 407	33 656	32 249	30 866
Indonesia	77 972	77 263	76 145	75 770	74 704
Iran	166 200	166 800	185 800	189 400	202 400
Iraq	700	1 200	900	1 000	1 100
Israel	2 558	6 492	7 676	8 438	9 390
Japan	3 276	2 995	2 822	2 734	2 754
Jordan	164	150	130	122	116
Kazakhstan	40 299	41 912	43 177	45 256	46 328
Kuwait (d)	15 500	16 300	15 000	15 000	17 100
Kyrgyzstan	29	33	34	31	* 31
Malaysia	62 050	64 780	65 400	63 380	67 140
Oman	29 381	32 093	29 915	31 093	31 742
Pakistan (b)	44 145	42 646	42 302	41 511	41 958
Philippines	3 905	3 511	3 693	3 471	3 977
Qatar	170 500	176 500	177 200	181 400	181 200
Saudi Arabia (d)	99 300	100 000	102 400	104 500	109 400
Syria	5 800	4 800	4 400	4 100	3 600
Taiwan	442	381	387	374	322
Tajikistan	7	2	3	4	3
Thailand	* 41 400	41 800	42 100	39 800	38 600
Turkmenistan	62 300	62 300	69 300	72 400	68 800
United Arab Emirates	54 300	56 000	57 800	55 800	61 900
Uzbekistan	56 900	56 900	57 300	57 700	62 800
Vietnam	9 355	9 751	10 210	10 660	10 610
Yemen, Republic of	7 300	9 900	9 300	2 700	700
Australia	60 197	62 479	67 335	76 791	97 328
New Zealand	4 277	4 526	5 015	4 596	4 878
Papua New Guinea	149	156	5 257	9 795	10 455
World total	3 506 000	3 551 000	3 612 000	3 696 000	3 715 000

### Note(s)

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

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

## Production of phosphate rock

tonnes (metric)

Country	2012	2013	2014	2015	2016
Finland	858 005	877 189	946 234	956 564	939 531
Russia	10 017 000	10 500 000	10 700 000	11 500 000	* 11 500 000
Turkey	—	510 080	604 000	713 230	* 700 000
Algeria	1 250 300	1 150 000	1 417 950	1 288 900	* 1 300 000
Burkina Faso	2 688	1 414	1 832	* 1 000	* 1 000
Egypt (a)	6 168 000	4 500 501	4 830 918	* 5 500 000	* 5 500 000
Malawi	12 403	11 783	11 194	12 400	2 500
Mali	* 7 500	* 7 500	* 10 000	* 10 000	* 10 000
Morocco	27 060 000	26 400 000	27 390 000	26 264 000	* 30 000 000
Senegal	1 380 900	882 400	806 200	1 062 000	1 609 000
South Africa	2 242 213	2 131 854	2 011 151	1 852 348	1 696 533
Tanzania	19 984	23 020	* 23 000	* 23 000	23 658
Togo	1 100 000	1 213 657	1 085 546	1 150 194	850 076
Tunisia	2 762 269	3 283 522	3 783 969	3 228 311	3 663 613
Zimbabwe	34 600	17 900	6 100	6 200	* 6 500
Canada	516 000	316 000	—	—	—
Cuba	1 700	3 000	1 300	—	—
Mexico	1 724 662	2 217 481	1 733 479	3 858 878	2 909 266
USA	30 100 000	31 200 000	25 300 000	27 400 000	* 27 800 000
Brazil (b)	6 740 000	6 715 000	6 513 000	5 600 000	6 500 000
Chile					
Phosphate rock	15 601	14 956	22 859	19 549	6 206
Guano	1 266	2 915	2 717	3 408	4 601
Colombia	54 000	40 802	30 396	90 505	42 889
Peru	10 345 925	14 842 307	10 884 269	11 161 636	10 561 111
Venezuela	151 539	98 458	35 820	26 324	* 25 000
China	95 296 000	108 510 000	120 438 000	142 039 000	144 398 000
Christmas Island (c)(d)(a)	653 000	672 000	575 000	671 000	770 000
India (e)	1 941 158	1 453 580	1 607 215	1 571 973	1 181 307
Iran (f)	33 333	119 961	75 092	85 066	* 85 000
Iraq	100 000	140 000	* 140 000	* 140 000	* 140 000
Israel	2 488 496	2 539 166	2 778 715	3 427 469	3 591 200
Jordan	6 383 000	5 398 600	7 143 713	8 335 993	7 991 157
Kazakhstan	1 868 200	1 831 800	* 1 830 000	* 1 830 000	* 1 830 000
Korea, Dem. P.R. of	* 300 000	* 300 000	* 300 000	* 300 000	* 300 000
Pakistan (a)	69 400	104 961	101 971	109 874	115 140
Philippines					
Phosphate rock	2 952	3 478	3 897	5 437	8 019
Guano	331	443	409	495	670
Saudi Arabia	1 534 000	1 820 000	1 911 000	2 002 000	5 400 000
Sri Lanka	47 559	49 106	62 595	52 518	40 329
Syria	1 780 300	897 600	1 230 000	750 000	* —
Thailand	1 990	350	500	* 500	* 500
Uzbekistan	664 300	700 000	* 700 000	* 700 000	* 700 000
Vietnam	2 363 800	2 656 100	2 470 900	2 923 400	2 849 400
Australia (a)	884 643	2 064 291	1 950 050	1 027 622	1 037 265
Nauru (c)	521 491	347 184	153 418	94 021	114 350
World total	220 000 000	237 000 000	242 000 000	268 000 000	276 000 000

### 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 beneficiated and directly shipped material
- (c) Exports
- (d) Including phosphate dust
- (e) Years ended 31 March following that stated
- (f) Years ended 20 March following that stated

## Mine production of platinum group metals

kilograms (metal content)

Country	2012	2013	2014	2015	2016
Finland					
Platinum	429	946	1 060	992	1 154
Palladium	379	766	808	784	883
Poland					
Platinum	39	51	86	86	* 86
Palladium	23	30	51	51	* 51
Russia					
Platinum (a)	24 900	25 000	22 000	20 800	22 500
Palladium (a)	89 900	84 000	81 300	75 500	86 300
Other platinum metals (a)	2 800	2 600	2 800	2 500	2 600
Serbia					
Platinum	3	3	* 3	* 3	* 3
Palladium	22	20	* 20	* 20	* 20
Botswana					
Platinum	435	218	124	31	—
Palladium	2 582	1 337	560	156	—
South Africa					
Platinum	128 590	137 024	93 991	139 125	133 241
Palladium	74 738	76 008	58 410	82 691	76 273
Other platinum metals	51 010	51 156	36 043	53 699	54 139
Zimbabwe					
Platinum	10 524	13 066	12 483	12 564	15 110
Palladium	10 524	10 153	10 138	10 055	12 222
Other platinum metals	2 090	2 677	2 667	2 612	3 093
Canada					
Platinum	* 8 200	* 9 700	* 12 000	* 11 900	* 11 400
Palladium	* 14 400	* 19 800	* 21 000	* 20 800	* 19 800
Other platinum metals	* 900	* 1 100	* 1 400	* 1 400	* 1 300
USA					
Platinum	3 670	3 720	3 660	3 670	* 3 900
Palladium	12 300	12 600	12 400	12 500	* 13 200
Colombia	1 460	1 504	1 135	861	917
China					
Platinum	* 1 400	* 1 400	* 1 400	* 1 400	* 1 400
Palladium	* 700	* 700	* 700	* 700	* 700
Australia					
Palladium (b)	706	786	766	533	762
World total	443 000	456 000	377 000	455 000	461 000

### 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) Platinum group metals; all forms

## Production of potash

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

Country	2012	2013	2014	2015	2016
Belarus	4 830 700	4 178 500	6 339 990	6 467 878	6 180 050
Germany					
Potassic salts	3 149 386	3 075 201	3 178 103	3 109 903	2 750 841
Russia					
Chloride	5 563 200	6 104 270	7 402 350	6 954 000	6 588 000
Spain					
Chloride	421 652	711 272	706 664	667 959	672 246
United Kingdom					
Chloride	* 540 000	* 540 000	576 000	594 000	432 000
Canada					
Chloride	8 962 717	10 140 000	11 345 000	11 506 000	10 208 000
USA					
Potassic salts	900 000	960 000	850 000	740 000	* 520 000
Brazil					
Chloride	346 509	492 151	492 355	289 000	300 000
Chile					
Chloride	996 172	1 158 403	1 108 478	1 118 864	1 237 447
China	* 3 770 000	* 5 300 000	* 6 110 000	* 6 200 000	* 6 200 000
Israel					
Chloride	2 115 468	2 155 414	2 212 923	950 077	1 457 127
Jordan	1 110 200	1 064 000	1 275 500	1 436 600	1 222 100
World total	32 700 000	35 900 000	42 000 000	40 000 000	37 800 000

## Production of rare earth oxides

tonnes (metric)

Country	2012	2013	2014	2015	2016
Russia	2 131	1 443	2 134	2 312	3 063
USA	1 800	3 300	3 240	3 540	—
Brazil	* 134	—	—	—	—
China (a)	* 100 000	* 95 000	* 105 000	* 105 000	* 105 000
Malaysia	114	229	292	365	208
Vietnam	* —	* 100	* 100	* 100	* 100
Australia (b)	2 612	970	3 965	8 799	12 630

### 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 30 June of that stated

## Production of rhenium

tonnes (metric)

Country	2012	2013	2014	2015	2016
Armenia	* 1	* 0	* 0	—	—
Poland	3	5	5	6	* 6
Russia	* 2	* 2	* 2	* 2	* 2
USA	8	7	9	8	* 8
Chile	* 27	* 27	* 25	* 26	* 26
China	* 2	* 2	* 2	* 2	* 2
Kazakhstan	* 3	* 3	* 0	* 1	* 1
Uzbekistan	* 0	* 0	* 0	* 0	* 0

## Production of salt

tonnes (metric)

Country	2012	2013	2014	2015	2016
Albania (e)	* 47 000	* 47 000	* 47 000	* 47 000	* 47 000
Armenia	37 798	30 786	39 793	27 392	32 250
Austria					
Rock salt	222	184	245	248	244
Salt in brine	951 591	982 551	1 116 658	985 357	1 044 926
Azerbaijan	5 345	6 268	5 173	4 743	4 699
Belarus	2 176 650	2 625 270	1 820 547	2 055 047	2 476 493
Bosnia & Herzegovina	743 807	727 894	791 047	869 750	966 177
Bulgaria	2 100 000	2 000 000	3 300 000	3 100 000	3 300 000
Croatia	45 992	42 502	33 039	51 877	39 836
Denmark	* 590 000	580 000	* 580 000	* 580 000	* 580 000
France (a)	6 545 600	7 312 200	6 500 000	4 266 053	4 164 364
Germany					
Rock salt	5 938 855	8 510 652	4 928 656	6 027 873	5 634 339
Brine salt	2 182 440	2 164 456	2 133 359	2 286 769	2 278 304
Salt in brine	* 10 900 000	7 878 895	4 075 004	8 132 675	8 324 054
Greece	191 970	189 500	146 402	* 145 000	* 145 000
Italy					
Rock salt & brine salt	2 862 440	2 672 340	2 819 824	3 030 687	2 550 849
Malta	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
Montenegro (e)	16 000	10 000	* 10 000	* 10 000	* 10 000
Netherlands	6 513 000	6 517 000	6 500 000	6 700 000	6 625 000
Poland					
Rock salt	782 500	1 310 500	775 185	639 735	698 607
Brine salt	2 732 200	2 735 500	2 705 091	2 797 703	2 964 690
Other salt	724 000	499 100	459 400	487 200	438 700
Portugal					
Rock salt	520 284	473 095	69 702	30 008	15 348
Sea salt	88 693	91 282	96 321	117 282	105 972
Romania	1 888 516	2 127 780	2 046 740	2 079 600	2 063 467
Russia	413 000	348 000	361 000	723 000	769 000
Serbia	16 506	13 704	12 994	13 202	9 149
Slovenia	5 684	3 360	—	2 191	2 417
Spain					
Rock salt	2 785 959	2 973 993	2 753 802	3 032 409	2 525 940
Sea salt	1 222 060	1 221 018	1 358 647	1 402 672	1 250 000
Other salt	100 643	114 829	157 188	154 464	110 000
Switzerland	492 700	560 076	418 389	476 941	447 216
Turkey	5 254 813	5 564 736	5 931 945	10 994 822	* 11 000 000
Ukraine	6 181 415	5 796 287	2 497 706	2 136 500	* 2 136 500
United Kingdom	6 460 000	6 930 000	4 690 000	* 4 600 000	* 4 500 000
Algeria					
Brine salt & sea salt	178 000	172 900	192 982	175 000	* 175 000
Angola	* 45 000	* 45 000	* 45 000	47 845	* 48 000
Botswana	389 481	521 306	515 311	404 295	399 837
Djibouti	* 4 000	* 500	* 500	* 500	* 500
Egypt (b)	2 802 163	2 193 936	1 543 279	* 1 500 000	* 1 500 000
Eritrea	* 240 000	* 290 000	* 290 000	* 290 000	* 290 000
Ethiopia (c)	320 000	318 402	* 320 000	* 320 000	* 320 000
Ghana	* 250 000	* 250 000	* 250 000	* 250 000	* 250 000
Guinea	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Kenya (d)	9 980	8 895	18 936	21 201	23 423
Libya	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Madagascar	* 85 000	* 85 000	* 85 000	* 85 000	* 85 000
Mauritania	700	700	700	* 700	* 700
Mauritius (e)	3 800	3 800	3 500	1 800	500
Morocco	730 000	488 300	439 160	555 760	* 573 000
Mozambique (e)	* 150 000	* 150 000	* 160 000	* 160 000	* 160 000
Namibia	810 000	644 961	745 785	267 147	581 558
Senegal	237 300	243 000	244 700	265 700	263 200
South Africa	399 135	479 024	493 828	520 070	488 984
Sudan	26 315	20 800	30 000	23 434	* 23 000
Tanzania	34 016	36 032	54 757	92 158	145 718
Tunisia	1 244 000	1 293 880	1 124 019	1 280 000	* 1 280 000

## Production of salt

tonnes (metric)

Country	2012	2013	2014	2015	2016
Bahamas (f)	659 671	956 789	1 493 308	962 486	308 007
Bonaire	* 400 000	* 400 000	* 400 000	* 400 000	* 400 000
Canada					
Rock salt	9 820 792	11 223 829	13 173 990	13 312 076	9 310 950
Other salt (g)	1 023 832	986 253	995 546	974 035	979 382
Cuba	215 900	222 400	243 300	284 900	248 000
Dominican Republic (a)	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
El Salvador (e)	103 100	* 100 000	* 100 000	* 100 000	* 100 000
Guatemala (e)	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Honduras	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
Jamaica	14 587	14 166	* 14 200	* 14 000	* 14 000
Mexico	10 100 935	10 126 601	10 520 508	9 718 027	* 9 700 000
Nicaragua (e)	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Panama (e)	15 596	27 197	25 660	23 294	23 470
USA					
Rock salt (h)	13 392 000	14 364 000	19 026 000	19 800 000	* 18 480 000
Salt in brine (h)	17 484 000	18 354 000	18 120 000	17 100 000	* 15 960 000
Evaporated salt (h)	6 324 000	7 182 000	8 154 000	8 010 000	* 7 560 000
Argentina	1 843 975	1 652 087	* 1 500 000	* 1 700 000	* 2 000 000
Bolivia	1 905	2 262	* 2 200	2 216	4 534
Brazil					
Rock salt	1 403 364	1 349 411	1 451 051	* 1 450 000	* 1 500 000
Sea salt	6 078 507	5 926 042	6 050 000	* 6 000 000	* 6 000 000
Chile	8 057 130	6 576 960	10 553 440	11 831 116	8 139 914
Colombia					
Rock salt	308 547	319 184	340 263	338 804	345 637
Sea salt	211 721	113 226	105 577	78 634	218 557
Ecuador	* 75 000	* 75 000	* 75 000	* 75 000	* 75 000
Peru	1 242 765	1 205 435	1 175 157	1 471 131	1 450 415
Venezuela (e)	* 350 000	* 350 000	* 350 000	* 350 000	* 350 000
Afghanistan	5 250	5 550	5 680	* 5 700	* 5 700
Bangladesh (b)	1 430 329	1 438 805	1 460 698	1 463 117	1 477 157
Burma (j)	207 261	169 109	187 616	129 478	140 947
Cambodia (e)(i)	80 000	147 000	270 000	300 000	* 300 000
China	69 117 800	73 676 000	70 497 100	66 655 400	63 095 000
India					
Sea salt (j)	19 205 600	17 517 000	21 022 100	21 516 000	23 454 700
Other salt (j)	5 341 300	5 502 300	5 865 000	6 126 800	5 736 900
Indonesia	* 700 000	* 720 000	* 720 000	* 720 000	* 720 000
Iran (k)	2 961 952	3 269 439	3 517 536	2 813 780	* 2 800 000
Iraq	143 441	181 928	* 182 000	* 182 000	* 182 000
Israel (e)	414 984	442 417	459 742	333 317	389 236
Japan (j)	925 000	929 000	928 000	938 000	928 000
Jordan	32 000	* 32 000	* 32 000	* 32 000	* 32 000
Kazakhstan	463 960	519 188	596 508	608 627	733 521
Korea (Rep. of)	308 847	421 259	303 510	342 844	323 470
Korea, Dem. P.R. of	* 500 000	* 500 000	* 500 000	* 500 000	* 500 000
Kuwait	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Laos	47 600	50 000	51 000	* 51 000	* 51 000
Lebanon (e)	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Mongolia	2 461	* 2 100	* 2 100	* 2 100	* 2 100
Oman	12 800	11 800	12 900	12 600	4 500
Pakistan					
Rock salt (b)	2 135 760	2 159 939	2 220 347	2 797 506	3 535 053
Other (b)(d)	292 135	297 047	254 985	292 953	282 529
Philippines (e)	774 815	992 640	* 993 000	* 993 000	* 993 000
Saudi Arabia					
Rock salt & brine salt	1 611 000	1 900 000	1 990 000	2 080 000	2 000 000
Sri Lanka	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Syria	* 40 000	* 20 000	* 10 000	* 5 000	* 2 500
Taiwan	70 750	80 966	81 893	78 301	77 276
Tajikistan	27 954	32 062	36 348	35 704	35 516
Thailand					
Rock salt	1 363 539	1 300 156	1 381 067	1 385 911	1 390 548
Other salt	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000



## Production of salt

tonnes (metric)

Country	2012	2013	2014	2015	2016
Turkmenistan	* 220 000	* 225 000	* 230 000	* 230 000	* 230 000
Uzbekistan	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Vietnam	776 400	718 100	905 600	1 061 000	933 200
Yemen, Republic of	* 75 000	* 75 000	* 75 000	* 75 000	* 75 000
Australia (b)	13 567 043	13 184 573	13 563 290	12 324 493	11 514 481
New Zealand	88 000	55 000	65 000	101 000	101 678
World total	282 100 000	289 000 000	288 600 000	293 000 000	279 600 000

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

## Production of refined selenium

tonnes (metric)

Country	2012	2013	2014	2015	2016
Armenia	17	20	* 20	* 20	* 20
Belgium	* 200	* 200	* 200	* 200	* 200
Finland	93	72	94	93	104
Germany (a)	* 650	* 700	* 700	* 790	* 790
Poland	90	80	90	87	82
Russia	115	114	131	143	197
Serbia	13	16	* 16	* 16	* 16
Sweden	* 20	* 20	* 20	* 20	* 20
Canada	144	159	154	154	176
Mexico	95	132	120	99	126
USA	* 130	* 150	* 160	* 90	* 122
Chile	70	70	41	* 50	* 50
Peru	42	50	49	40	* 40
China	* 560	* 610	* 670	720	750
Japan	820	739	782	772	753
Kazakhstan	* 130	* 130	* 130	* 130	* 130
Philippines	* 70	* 70	* 70	* 70	* 70
Uzbekistan	* 20	* 20	* 20	* 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	2012	2013	2014	2015	2016
France					
Andalusite	* 68 000	* 68 000	* 68 000	* 68 000	* 65 000
Madagascar	4 500	4 500	* 3 000	1 800	2 300
South Africa					
Andalusite	* 265 000	* 270 000	* 270 000	* 270 000	* 270 000
USA					
Kyanite (a)	99 000	110 000	* 89 000	108 000	* 100 000
Brazil					
Kyanite (b)	* 200	* 200	* 200	* 200	* 200
India					
Kyanite (c)	1 048	3 679	6 255	2 901	3 254
Sillimanite (c)	43 736	67 265	66 273	69 942	68 137
Nepal					
Kyanite (d)	29	19	12	7	1

### 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) Including related minerals
- (b) Including beneficiated and directly shipped material
- (c) Years ended 31 March following that stated
- (d) Years ending 15 July of that stated

## Mine production of silver

kilograms (metal content)

Country	2012	2013	2014	2015	2016
Armenia	14 000	14 083	13 295	14 344	12 792
Azerbaijan	626	2 051	970	890	5 136
Bulgaria	* 55 000	* 55 000	* 55 000	* 55 000	* 55 000
Finland	10 479	14 226	12 830	13 051	16 348
Greece	* 39 800	39 759	35 785	25 200	21 800
Greenland	27	* 3	—	—	—
Ireland, Republic of	9 454	7 822	6 436	3 770	1 080
Macedonia	* 31 000	* 32 000	* 33 000	* 33 000	* 33 000
Poland	1 149 000	1 161 114	1 384 000	1 407 000	1 482 000
Portugal	29 890	40 621	43 172	41 337	38 631
Romania	* 18 000	* 18 000	* 18 000	* 18 000	* 18 000
Russia (a)	1 425 000	1 427 700	1 433 900	1 580 100	1 449 400
Serbia (a)	8 388	5 800	8 600	7 500	11 300
Slovakia	441	508	437	532	449
Spain	32 943	* 27 900	* 27 300	27 300	17 600
Sweden	309 337	341 346	382 611	479 686	498 686
Turkey	193 890	189 600	183 880	171 069	174 179
United Kingdom	230	82	—	—	—
Algeria	42	27	16	—	—
Botswana	8 700	22 597	22 288	2 801	—
Burkina Faso	—	31 436	25 520	29 000	30 843
Congo, Democratic Republic	12 342	60 431	6 485	2 401	800
Eritrea	29 922	15 799	47 398	38 910	13 219
Ethiopia (b)	* 2 400	* 1 400	1 020	* 1 000	* 1 000
Ghana	* 3 900	* 3 900	* 3 900	* 4 000	4 000

## Mine production of silver

kilograms (metal content)

Country	2012	2013	2014	2015	2016
Ivory Coast	410	572	585	587	549
Mali	3 220	2 577	2 490	* 2 600	* 2 600
Morocco	170 340	194 077	188 538	216 383	237 418
Namibia	966	1 400	1 129	11 555	4 702
Niger	329	110	67	119	* 100
Senegal	670	850	1 150	540	* 500
South Africa	67 304	68 777	37 268	38 824	52 127
Sudan	* 700	* 700	* 1 000	* 1 000	* 1 000
Tanzania	11 227	11 014	14 493	15 820	15 818
Canada	685 255	640 362	495 403	383 807	404 666
Dominican Republic	27 296	78 228	127 712	91 928	121 600
Guatemala	204 681	281 331	858 349	862 814	837 815
Honduras	51 896	50 916	58 826	34 369	17 600
Mexico	5 358 195	5 821 001	5 765 662	5 955 151	5 408 521
Nicaragua	10 207	13 745	13 593	18 049	21 203
USA	1 055 000	1 037 000	1 184 000	1 090 000	* 1 100 000
Argentina	750 000	774 470	905 100	1 079 300	933 100
Bolivia	1 206 000	1 287 200	1 345 022	1 306 098	1 353 202
Brazil	20 145	22 427	25 381	* 25 000	* 25 000
Chile	1 194 521	1 173 845	1 571 788	1 504 271	1 501 436
Colombia	19 368	13 968	11 498	10 155	10 427
Ecuador	2 934	1 198	577	2 358	934
Peru	3 480 587	3 674 283	3 777 800	4 101 568	4 374 913
China	3 639 100	3 673 300	3 673 300	3 421 355	3 496 003
India (c)	374 046	349 774	327 647	426 443	460 811
Indonesia	247 827	123 109	119 189	151 934	* 117 400
Iran	* 40 000	* 35 000	34 945	48 400	* 50 000
Japan	3 536	3 644	3 541	4 616	5 076
Kazakhstan	963 182	963 580	989 247	1 308 926	1 176 422
Korea (Rep. of)	2 925	3 897	3 289	4 600	6 579
Korea, Dem. P.R. of	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Laos	20 221	32 262	39 823	51 764	51 301
Malaysia	1 628	361	533	945	1 075
Mongolia	19 118	29 332	39 160	48 989	79 480
Philippines	49 211	40 043	23 005	29 952	35 186
Saudi Arabia	5 500	4 158	4 888	5 530	4 500
Tajikistan	1 800	1 800	1 700	* 2 700	3 200
Thailand	32 047	32 381	29 216	26 438	35 953
Uzbekistan	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Australia	1 726 933	1 839 782	1 846 848	1 430 298	1 418 219
Fiji	342	462	361	354	354
New Zealand	5 630	11 223	15 811	12 498	7 960
Papua New Guinea	81 332	89 666	81 096	44 588	90 498
Solomon Islands	902	685	280	—	—
World total	25 031 000	26 008 000	27 477 000	27 839 000	27 461 000

### Note(s)

- (a) Smelter and/or refinery production
- (b) Years ended 7 July of that stated
- (c) Years ended 31 March following that stated

## Production of natural sodium carbonate

tonnes (metric)

Country	2012	2013	2014	2015	2016
Turkey	1 852 817	1 665 077	1 828 167	1 854 290	* 1 900 000
Botswana	248 629	227 913	268 529	243 369	280 457
Ethiopia (a)	* 5 000	* 5 000	* 6 000	* 6 000	* 6 000
Kenya	449 269	468 215	409 845	319 761	301 719
USA	11 100 000	11 500 000	11 700 000	11 600 000	* 11 700 000

Note(s)

(a) Years ended 7 July of that stated

## Production of strontium minerals

tonnes (metric)

Country	2012	2013	2014	2015	2016
Spain	96 888	90 972	128 077	116 765	157 690
Mexico	46 190	67 778	64 931	79 022	56 544
Argentina (a)	22 750	5 246	* 10 000	* 10 000	* 10 000
China	* 190 000	* 180 000	* 190 000	* 180 000	* 180 000
Iran (b)	188 790	46 240	41 050	36 760	* 37 000

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	2012	2013	2014	2015	2016
Austria					
Recovered (a)	47 572	45 442	44 560	* 44 000	* 44 000
Belarus					
Recovered (a)	58 322	58 343	70 379	72 038	59 920
Belgium					
Recovered (a)(b)	382 100	396 900	* 400 000	* 400 000	* 400 000
Bosnia & Herzegovina					
Recovered	4 473	4 568	4 513	4 138	4 563
Bulgaria					
Recovered (b)	375 800	392 200	* 392 000	* 392 000	* 392 000
Recovered (a)	55 000	60 000	* 60 000	* 60 000	* 60 000
Croatia					
Recovered (a)	17 411	15 902	19 384	17 540	21 690
Czech Republic					
Recovered (a)	35 000	35 000	* 35 000	* 35 000	* 35 000
Denmark					
Recovered (a)	3 925	3 599	4 435	93 024	6 144

## Production of sulphur and pyrites

tonnes (sulphur content)

Country	2012	2013	2014	2015	2016
Finland					
Pyrites	375 000	347 000	353 000	353 000	206 002
Recovered (b)	329 831	315 958	336 168	348 640	349 504
Recovered (a)	121 700	130 000	* 130 000	* 130 000	* 130 000
France					
Recovered (a)	440 000	370 000	* 370 000	* 370 000	* 370 000
Recovered (c)	78 400	78 400	* 78 400	* 78 400	* 78 400
Germany					
Recovered (a)	798 257	754 540	708 146	627 797	577 684
Recovered (c)	493 169	464 776	437 677	383 894	351 865
Greece					
Recovered (a)	227 197	228 000	227 140	161 050	* 160 000
Hungary					
Recovered (a)	65 000	58 000	* 54 000	* 54 000	* 54 000
Italy					
Recovered	(b) 58 800	(b) 40 200	...	...	...
Recovered (a)	540 000	510 000	(d) 740 000	(d) 740 000	(d)* 740 000
Lithuania					
Recovered (a)	73 040	81 449	76 594	84 001	94 522
Netherlands					
Recovered (b)	117 600	120 900	* 120 000	* 107 000	* 112 000
Recovered (a)	450 000	430 000	* 410 000	* 400 000	* 400 000
Norway					
Recovered (b)	78 789	77 329	76 772	76 384	74 277
Recovered (a)	20 000	22 000	* 22 000	* 22 000	* 22 000
Poland					
Frasch	702 190	526 290	605 420	627 600	620 500
Recovered (b)	267 000	260 000	* 260 000	* 280 000	* 280 000
Recovered (a)	25 000	24 300	24 200	23 820	24 500
Portugal					
Recovered	20 600	* 21 000	* 21 000	* 21 000	* 21 000
Romania					
Recovered	50 000	60 000	* 47 000	* 46 000	* 44 000
Russia					
Pyrites	* 71 000	* 71 000	* 71 000	* 71 000	* 71 000
Recovered (a)	6 482 300	6 091 700	* 6 092 000	* 6 092 000	* 6 092 000
Recovered (c)	919 300	954 200	* 954 000	* 954 000	* 954 000
Sulphur ore	* 100 000	* 100 000	* 100 000	110 155	94 418
Serbia					
Recovered (b)	29 700	29 400	* 29 400	* 29 400	* 29 400
Slovakia					
Recovered (b)	4 900	4 900	* 4 900	* 4 900	* 4 900
Recovered (a)	76 200	85 300	* 85 300	* 85 300	* 85 300
Spain					
Recovered (b)	578 400	539 200	* 539 000	* 539 000	* 539 000
Recovered (a)	545 000	515 000	* 515 000	* 515 000	* 515 000
Sweden					
Recovered (b)	198 850	194 938	205 616	192 499	187 264
Recovered (a)	93 442	64 587	86 538	95 172	86 312
Turkey					
Pyrites	52 080	45 348	42 849	22 271	* 25 000
Recovered (a)(c)	72 900	* 72 900	* 72 900	* 72 900	* 72 900
Sulphur ore	5 889	8 069	—	823	* 1 000
Ukraine					
Sulphur ore	140 000	120 000	* 120 000	* 120 000	* 120 000
United Kingdom					
Recovered (a)	158 000	145 000	134 000	135 000	133 000
Algeria					
Recovered (a)	10 400	10 000	* 10 000	* 10 000	* 10 000
Egypt					
Recovered (a)	60 000	80 000	* 80 000	* 80 000	* 80 000
Libya					
Recovered (a)	138 200	133 500	143 000	—	—
Morocco					
Recovered	60 000	60 000	* 60 000	* 60 000	* 60 000

## Production of sulphur and pyrites

tonnes (sulphur content)

Country	2012	2013	2014	2015	2016
South Africa					
Recovered (b)	133 000	* 130 000	* 130 000	* 144 000	* 146 000
Recovered (a)	124 000	* 120 000	* 120 000	* 133 000	* 134 800
Zambia					
Recovered (b)	261 400	* 262 000	* 265 000	* 300 000	* 300 000
Aruba					
Recovered	16 408	—	* —	* —	* —
Canada					
Recovered (b)	665 000	677 000	590 000	558 000	664 000
Recovered (a)	5 594 000	5 624 000	5 252 000	5 187 000	4 653 000
Cuba					
Recovered	1 330	1 360	1 350	1 355	1 780
Recovered (a)	18 000	20 000	* 20 000	* 20 000	* 20 000
Mexico					
Recovered (b)	555 600	555 600	* 556 000	* 556 000	* 550 000
Recovered (a)	1 010 875	1 025 841	992 939	858 127	678 812
Trinidad & Tobago					
Recovered (a)	15 000	10 000	* 10 000	* 10 000	* 10 000
USA					
Recovered (b)	586 000	616 000	587 000	646 000	* 670 000
Recovered (a)	8 410 000	8 590 000	9 050 000	8 890 000	* 9 110 000
Argentina					
Recovered (b)	* 23 000	* 23 000	* 23 000	* 23 000	* 23 000
Brazil					
Pyrites	21 746	17 581	18 827	* 20 000	* 20 000
Recovered (b)	274 693	324 405	286 754	* 290 000	* 292 000
Recovered (a)	222 561	218 014	239 970	* 240 000	* 239 000
Chile					
Recovered (b)	1 724 042	1 770 574	1 849 250	1 488 326	1 595 595
Colombia					
Recovered (a)	7 138	5 969	6 222	8 170	7 653
Sulphur ore	63 790	52 470	48 513	76 239	76 331
Ecuador					
Recovered (a)(e)	7 000	5 000	* 5 000	* 5 000	* 5 000
Peru					
Recovered (d)	503 600	555 600	* 556 000	* 556 000	* 556 000
Venezuela					
Recovered (a)	465 000	415 000	* 420 000	* 420 000	* 420 000
Bahrain					
Recovered (a)	* 120 181	* 120 000	* 120 000	* 120 000	* 120 000
China					
Pyrites	7 464 300	7 703 600	* 7 700 000	* 7 700 000	* 7 700 000
Recovered	7 228 700	7 516 300	* 7 500 000	* 7 500 000	* 7 500 000
Sulphur ore	4 660 000	4 975 000	* 5 000 000	* 5 000 000	* 5 000 000
India					
Recovered (b)(f)	1 113 000	* 1 200 000	* 1 200 000	* 1 200 000	* 1 200 000
Recovered (a)	* 1 600 000	* 1 600 000	* 1 500 000	* 1 500 000	* 1 500 000
Indonesia					
Recovered (b)	225 500	163 400	* 160 000	* 160 000	* 160 000
Recovered (a)	120 000	120 000	* 120 000	* 120 000	* 120 000
Iran					
Recovered (d)	1 890 000	1 890 000	2 100 000	2 200 000	* 2 200 000
Iraq					
Recovered (a)	250 000	190 000	* 190 000	* 190 000	190 000
Israel					
Recovered (a)	61 009	65 000	61 009	71 627	71 104
Japan					
Recovered (b)	1 694 514	1 633 171	1 691 409	1 629 493	1 700 085
Recovered (a)	1 747 246	1 778 963	1 750 938	1 733 338	1 817 790
Jordan					
Recovered (a)	460 000	486 000	* 490 000	* 490 000	* 490 000
Kazakhstan					
Recovered (b)	588 200	604 600	* 604 000	* 604 000	* 604 000
Recovered (a)	2 150 500	2 452 700	2 464 600	2 514 900	2 536 400

## Production of sulphur and pyrites

tonnes (sulphur content)

Country	2012	2013	2014	2015	2016
Korea (Rep. of)					
Recovered (b)	1 078 400	1 078 400	* 1 078 000	* 1 078 000	* 1 078 000
Recovered (a)	1 525 000	1 600 000	1 200 000	1 450 000	2 000 000
Kuwait					
Recovered (a)	844 300	850 000	* 850 000	* 850 000	* 850 000
Oman					
Recovered (a)	59 000	51 000	* 50 000	* 50 000	* 50 000
Pakistan					
Sulphur ore (g)	25 560	20 610	35 672	19 730	14 869
Philippines					
Recovered (b)	88 200	169 900	* 169 900	* 169 900	* 169 000
Recovered (a)	45 000	45 000	* 45 000	* 45 000	* 45 000
Qatar					
Recovered (a)	1 843 982	1 978 862	* 1 754 000	* 1 665 000	* 1 667 000
Saudi Arabia					
Recovered (a)	4 092 000	3 900 000	* 4 400 000	* 4 400 000	* 4 400 000
Singapore					
Recovered (a)	330 000	300 000	* 300 000	* 300 000	* 300 000
Syria					
Recovered (a)	20 000	* 6 000	* 3 000	* 1 500	* 1 500
Taiwan					
Recovered	231 296	192 292	195 280	211 219	163 768
Thailand					
Recovered (b)	45 800	45 800	* 45 800	* 45 800	* 45 800
Recovered (a)	210 000	220 000	* 210 000	* 210 000	* 210 000
Turkmenistan					
Recovered (a)	240 000	400 000	* 410 000	* 410 000	* 410 000
United Arab Emirates					
Recovered (a)	2 200 000	2 510 000	* 2 530 000	* 2 530 000	* 2 530 000
Uzbekistan					
Recovered (b)	130 700	130 700	* 131 000	* 131 000	* 131 000
Recovered (a)	360 000	385 000	* 385 000	* 385 000	* 385 000
Australia					
Recovered (b)	882 400	* 810 000	* 810 000	* 810 000	* 810 000
Recovered (a)	60 000	* 90 000	* 90 000	* 90 000	* 90 000
New Zealand					
Recovered (a)	32 700	35 000	* 35 000	* 35 000	* 35 000
World total					
Pyrites	8 000 000	8 200 000	8 200 000	8 200 000	8 000 000
Frasch	700 000	500 000	600 000	600 000	600 000
Recovered	68 800 000	69 600 000	69 800 000	69 200 000	69 400 000
Sulphur ore	5 000 000	5 300 000	5 300 000	5 300 000	5 300 000

### 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

- (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	2012	2013	2014	2015	2016
Austria	134 665	134 814	131 108	122 306	123 040
Finland	396 332	361 840	380 821	332 174	345 739
France	350 000	350 000	350 000	* 350 000	* 370 000
Italy	140 000	162 234	* 165 000	* 165 000	* 165 000
Macedonia	286	—	—	—	—
Norway	7 983	8 459	—	—	—
Portugal	15 131	11 348	14 942	11 204	11 699
Romania	13	—	—	—	—
Russia	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Slovakia	2 000	10 000	3 000	1 000	700
Spain	8 857	* —	* —	* —	* —
Turkey					
Talc	14 537	1 132	5 048	9 681	* 10 000
Pyrophyllite	85 251	101 872	109 366	172 681	* 175 000
United Kingdom	3 667	2 947	4 907	5 430	2 997
Egypt (a)	81 201	63 358	31 066	24 360	* 20 000
Morocco	200	—	—	—	* —
South Africa					
Talc	4 765	4 924	4 827	4 569	4 462
Pyrophyllite	18 734	17 336	18 900	16 801	19 114
Canada	154 000	175 000	81 000	181 000	217 000
Guatemala	2 449	3 253	3 368	3 779	2 733
Mexico	463 214	846 813	752 077	20 452	* 20 000
USA	515 000	542 000	608 000	687 000	* 660 000
Argentina (b)	23 576	27 124	* 25 000	* 25 000	* 25 000
Brazil (b)	459 539	592 844	644 478	* 650 000	* 650 000
Colombia (b)	—	90	951	2 685	833
Peru					
Talc	31 559	32 899	28 847	26 781	11 507
Pyrophyllite	30 399	31 678	17 859	26 209	17 872
Uruguay	370	710	360	590	* 600
Bhutan	16 063	9 584	12 601	5 807	2 261
China	* 2 100 000	* 2 200 000	* 2 100 000	* 2 200 000	* 2 200 000
India					
Pyrophyllite (c)	247 968	224 677	147 431	* 140 000	* 140 000
Steatite (c)	971 778	887 925	774 281	* 770 000	* 770 000
Iran (d)	116 087	93 116	112 500	137 135	* 130 000
Japan					
Talc	* 25 000	* 25 000	* 25 000	* 25 000	* 25 000
Pyrophyllite	* 340 000	* 340 000	* 340 000	* 340 000	* 345 000
Korea (Rep. of)					
Talc	21 625	2 808	5 484	6 371	2 247
Pyrophyllite	483 133	524 881	622 865	596 860	590 000
Korea, Dem. P.R. of	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Nepal (e)	6 935	5 140	5 703	3 183	1 860
Pakistan (a)	55 515	93 214	89 022	116 223	125 330
Saudi Arabia					
Pyrophyllite	6 000	6 000	7 000	8 000	42 000
Taiwan	778	362	133	162	250
Thailand					
Talc	5 856	7 880	8 208	6 768	7 126
Pyrophyllite	35 000	26 820	49 100	45 500	96 800
Australia (a)	135 000	* 104 000	* 115 000	* 80 000	* 111 000
World total	7 700 000	8 200 000	8 000 000	7 500 000	7 600 000

See the following page for notes



## Production of talc

### 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 talc, agalmatolite and pyrophyllite
- (c) Years ended 31 March following that stated
- (d) Years ended 20 March following that stated
- (e) Years ended 15 July of that stated

## Production of tantalum and niobium minerals

tonnes (metric)

Country	2012	2013	2014	2015	2016
Russia					
Nb content	450	511	581	628	628
Ta content	31	32	40	32	49
Burundi					
Columbite-tantalite	259	74	82	44	32
Congo, Democratic Republic					
Columbite-tantalite	586	500	1 140	2 102	2 414
Ethiopia					
Tantalite (a)	91	10	107	* 63	* 65
Mozambique					
Tantalite	83	43	23	20	* 20
Nigeria					
Tantalite	63	60	* 60	* 60	28
Columbite	22	21	* 22	* 22	21
Rwanda					
Columbite-tantalite	1 145	2 466	2 303	1 652	* 1 500
Uganda					
Columbite-tantalite	—	—	—	—	13
Canada					
Pyrochlore	* 10 900	* 12 300	* 13 000	* 11 600	* 11 600
Tantalite	—	121	—	—	—
Nb content	4 819	4 910	5 480	5 753	6 099
Bolivia					
Tantalite	—	—	23	1	—
Brazil					
Pyrochlore	* 268 000	* 250 000	* 280 000	* 250 000	* 250 000
Columbite-tantalite	* 210	* 329	* 210	* 200	* 200
Nb content	112 631	104 939	117 424	104 858	* 100 000
China					
Columbite-tantalite	* 180	* 190	* 240	* 380	* 380
Malaysia					
Struverite	262	190	255	86	77
Australia					
Tantalite	* 100	—	—	—	—
World total concentrates (b)	400 000	377 000	421 000	378 000	373 000
Nb content	118 500	111 300	124 600	112 500	108 000
Ta content	800	1 000	1 100	1 100	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 is believed to have accounted for approximately 20% of raw material supplied.

- (a) Years ended 7 July of that stated
- (b) Excluding Russia

## Production of refined tellurium

tonnes (metric)

Country	2012	2013	2014	2015	2016
Russia	30	31	33	34	40
Sweden	7	24	31	33	39
Canada	11	12	9	9	18
USA	* 50	* 50	* 50	* 50	* 50
China	* 110	* 150	* 180	210	210
Japan	43	31	32	34	28

### 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	2012	2013	2014	2015	2016
Portugal	42	84	75	42	54
Russia	249	156	321	575	618
Spain	69	0	—	—	7
United Kingdom	—	—	—	—	160
Burundi	117	3	12	32	22
Congo, Democratic Republic	10 439	3 427	4 012	4 567	6 503
Egypt (a)	—	69	85	3	—
Niger	1	8	5	8	* 8
Nigeria	2 408	2 516	2 485	2 298	3 443
Rwanda (b)	3 477	3 671	4 447	2 884	2 619
Tanzania	68	118	59	134	104
Uganda	—	19	33	135	62
Bolivia	19 702	19 287	19 791	20 135	17 460
Brazil	13 667	16 830	25 534	18 824	* 19 000
Peru (c)	26 105	23 668	23 105	19 511	18 789
Burma	* 5 000	* 19 000	* 26 000	* 43 000	* 57 000
China	115 700	149 000	158 000	135 000	97 000
India (d)	36	26	19	10	9
Indonesia	103 324	92 491	75 170	71 309	66 358
Korea (Rep. of)	...	20	68	7	63
Laos	468	521	782	692	1 005
Malaysia	3 725	3 697	3 777	4 125	4 123
Mongolia (e)	* 54	* 60	* 60	—	—
Thailand	199	132	156	72	92
Vietnam	3 191	5 129	4 833	4 530	4 579
Australia	6 158	6 472	6 898	7 158	6 635
World total	314 000	346 000	356 000	335 000	306 000

### 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	2012	2013	2014	2015	2016
Belgium	11 350	10 346	9 718	8 788	8 474
Poland	1 375	1 900	2 253	2 171	2 903
Russia	900	800	—	—	—
Rwanda	—	—	—	0	—
Bolivia (a)	14 280	14 863	15 439	15 464	16 810
Brazil	11 955	14 721	22 334	18 824	* 19 000
Peru	24 811	24 181	24 460	20 396	19 390
China	147 863	159 601	187 094	167 200	182 681
India (b)	14	23	9	17	—
Indonesia	* 79 800	* 63 000	* 64 800	* 67 350	* 55 000
Japan	1 133	1 786	1 746	1 688	1 620
Malaysia	37 792	32 668	34 971	30 209	26 802
Singapore	536	2 888	1 602	937	314
Thailand	22 992	23 087	16 661	10 502	11 088
Vietnam	3 095	4 961	4 688	4 382	4 419
World total	358 000	355 000	386 000	348 000	349 000

### 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	2012	2013	2014	2015	2016
Norway					
Ilmenite	830 614	826 126	863 660	630 323	* 630 000
Russia					
Ilmenite	125 095	150 458	178 426	193 236	60 000
Ukraine					
Ilmenite	* 600 000	* 600 000	* 600 000	* 600 000	* 600 000
Rutile	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Kenya					
Ilmenite	—	—	281 543	444 999	465 728
Rutile	—	—	52 465	78 947	87 716
Madagascar					
Ilmenite	562 000	562 000	333 736	166 290	267 962
Rutile	* 11 000	* 12 000	* 10 700	* 5 000	* 5 000
Mozambique					
Ilmenite	574 500	720 100	854 600	763 500	903 300
Rutile	5 100	4 000	6 100	6 000	7 800
Senegal					
Ilmenite	—	—	100 590	427 690	416 249
Leucoxene (a)	—	—	663	5 311	9 664
Sierra Leone					
Ilmenite	21 400	32 350	35 839	48 420	28 102
Rutile	94 490	120 350	115 078	126 021	148 541
South Africa					
Ilmenite (b)	* 1 203 000	* 1 070 000	* 1 105 000	* 1 280 000	* 1 300 000
Rutile	* 141 000	* 734 000	* 133 000	* 131 280	* 130 000

## Production of titanium minerals

tonnes (metric)

Country	2012	2013	2014	2015	2016
Canada					
Ilmenite (b)(c)	* 2 700 000	* 2 800 000	* 2 500 000	* 1 900 000	* 1 800 000
USA	200 000	200 000	100 000	200 000	* 100 000
Brazil					
Ilmenite	69 071	78 264	81 278	* 80 000	* 80 000
Rutile	1 881	2 021	1 834	* 2 000	* 2 000
China					
Ilmenite	1 799 000	1 905 000	1 902 000	* 1 900 000	* 1 800 000
India					
Ilmenite (d)	738 524	721 959	640 878	* 641 000	* 641 000
Rutile (d)	16 527	13 459	15 617	* 16 000	* 16 000
Kazakhstan	* 17 000	* 17 000	* 17 000	* 17 000	* 17 000
Korea (Rep. of)					
Ilmenite	201 976	229 723	240 892	204 082	166 900
Malaysia					
Ilmenite	22 275	16 043	8 159	5 814	4 316
Rutile	20 008	5 983	3 069	198	3 810
Sri Lanka					
Ilmenite	44 707	42 685	32 972	39 439	17 457
Rutile	1 590	1 406	2 111	1 808	2 237
Vietnam					
Ilmenite	978 300	1 025 800	558 000	237 700	101 600
Australia					
Ilmenite (e)	1 331 400	1 313 800	1 138 000	1 146 935	763 607
Rutile (e)	439 600	250 400	340 700	294 600	243 530
Leucoxene (e)	228 000	225 500	241 000	246 000	* 250 000
World total					
Ilmenite (wt of concs)	12 000 000	12 300 000	11 600 000	10 900 000	10 200 000
Rutile (wt of concs)	800 000	1 200 000	800 000	800 000	700 000
All forms (TiO <sub>2</sub> content)	6 600 000	7 100 000	6 400 000	6 100 000	5 800 000

### 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) Years ended 31 March following that stated  
(e) Years ended 30 June of that stated

## Mine production of tungsten

tonnes (metal content)

Country	2012	2013	2014	2015	2016
Austria	706	851	830	870	950
Portugal (a)	763	692	671	474	549
Russia	3 451	2 982	2 659	2 608	* 2 600
Spain	393	487	822	835	688
United Kingdom	—	—	—	195	923
Burundi	565	115	115	78	131
Congo, Democratic Republic	43	70	10	65	93
Rwanda (b)	1 061	1 344	1 313	1 081	* 1 000
Uganda	26	44	48	28	32
Zimbabwe	—	—	—	* 200	1 248
Canada	2 505	2 762	2 689	2 114	—
USA	* —	* —	* —	* —	(c)* 50
Bolivia	953	957	956	1 116	848
Brazil (c)	381	494	510	* 500	* 500
Peru	365	35	77	139	—
Burma (d)	* 130	* 140	* 140	* 90	* 110
China	61 994	64 863	65 360	72 163	72 163
Korea, Dem. P.R. of	* 100	* 65	* 70	* 70	* 50
Kyrgyzstan	* 100	* 100	* 100	* 100	* 100
Mongolia	42	—	—	—	—
Thailand (a)	85	161	110	38	36
Uzbekistan	* 300	* 300	* 300	* 300	* 300
Vietnam	—	—	4 134	5 123	6 357
Australia	31	33	13	25	16
World total	74 000	76 500	80 900	88 200	88 700

### Note(s)

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

(a) Wolframite and scheelite

(b) Exports

(c) Mainly scheelite

(d) Including tungsten content of tin-wolframite concentrates

## Mine production of uranium

tonnes (metal content)

Country	2012	2013	2014	2015	2016
Czech Republic	222	232	165	134	128
Germany	50	27	33	—	45
Romania	* 90	* 80	* 77	* 77	* 50
Russia	2 862	3 135	2 990	3 055	3 005
Ukraine	* 960	* 922	* 926	* 1 200	1 005
Malawi	1 102	1 133	369	—	—
Namibia	4 500	4 328	3 311	2 950	3 657
Niger	4 821	4 277	4 156	4 115	3 478
South Africa	467	531	566	448	382
Canada	8 998	9 331	9 101	13 324	14 037
USA	1 596	1 794	1 884	1 287	1 123
Brazil	326	192	55	40	44
China	* 1 500	* 1 500	* 1 500	1 616	1 616
India	* 385	* 385	* 385	* 385	* 385
Kazakhstan	21 317	22 567	23 127	23 800	24 575
Pakistan	* 45	* 45	* 45	* 45	* 45
Uzbekistan	* 3 000	* 2 400	* 2 400	* 2 385	* 2 404
Australia	7 010	6 393	5 100	5 655	6 234
World total	59 300	59 300	56 200	60 500	62 200
World total (U <sub>3</sub> O <sub>8</sub> equivalent)	70 000	70 000	66 300	71 400	73 400

### Note(s)

(1) Excluding uranium production from decommissioning operations

## Mine production of vanadium

tonnes (metal content)

Country	2012	2013	2014	2015	2016
Russia	14 856	14 403	15 125	16 196	16 886
South Africa	19 957	* 14 000	* 10 000	* 10 000	* 10 000
USA	106	591	—	—	—
Brazil	—	—	578	3 254	4 461
China	* 40 000	* 44 000	* 45 000	* 42 000	* 42 000
Kazakhstan	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
World total	76 000	74 000	72 000	72 000	74 000

### 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.

## Production of vermiculite

tonnes (metric)

Country	2012	2013	2014	2015	2016
Bulgaria	* 18 600	* 18 600	* 19 000	* 19 000	* 19 000
Russia	* 10 000	* 10 000	* 10 000	8 282	12 363
Turkey	...	1 604	716	425	* 500
Egypt	* 3 000	2 743	* 3 000	* 3 000	* 3 000
Kenya	457	400	840	410	—
South Africa	132 886	127 658	143 007	138 290	166 483
Uganda	11 251	4 165	2 661	801	3 295
Zimbabwe	21 625	28 808	29 500	29 000	* 29 000
Mexico	500	425	226	299	* 300
USA (a)	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Argentina	* 320	* 120	* 5 000	* 5 000	* 5 000
Brazil	51 986	60 379	56 444	* 60 000	* 60 000
China	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
India (b)	7 947	11 851	19 336	23 279	6 543
Australia (c)	9 256	9 091	—	—	—

### Note(s)

(a) Sold or used by producers

(b) Years ended 31 March following that stated

(c) Years ended 30 June of that stated

## Production of wollastonite

tonnes (metric)

Country	2012	2013	2014	2015	2016
Finland	* 11 500	* 11 500	* 10 000	* 10 000	* 10 000
Spain	10 918	16 738	15 298	17 700	13 553
Canada	—	—	3 000	3 000	6 000
Mexico	55 204	57 302	54 579	57 451	63 683
USA	* 70 000	* 70 000	* 70 000	* 70 000	* 60 000
China	* 750 000	* 750 000	* 1 100 000	* 1 000 000	* 950 000
India (a)	145 667	192 712	186 524	175 348	166 186
Australia (b)	—	—	—	2 428	1 797

### Note(s)

(a) Years ended 31 March following that stated

(b) Years ended 30 June of that stated

## Mine production of zinc

tonnes (metal content)

Country	2012	2013	2014	2015	2016
Armenia	9 729	9 570	8 825	6 791	4 735
Bosnia & Herzegovina	7 600	9 100	8 100	8 800	9 800
Bulgaria	(a) 12 116	(a) 13 902	11 872	15 616	18 795
Finland	52 200	41 124	46 100	25 332	45 852
Greece	20 800	22 549	23 085	13 174	18 866
Ireland, Republic of	337 500	326 700	282 600	236 300	147 800
Kosovo	3 818	4 983	5 514	3 986	4 814
Macedonia	28 037	30 907	31 570	29 150	24 871
Montenegro	4 677	5 487	7 200	7 068	8 100
Poland	76 700	75 000	56 000	52 709	50 124
Portugal	30 006	53 382	67 378	61 921	69 527
Romania	* 8 400	* 2 000	* 3 300	* 3 000	* 1 600
Russia	189 000	193 000	192 000	206 000	282 000
Serbia	6 000	5 800	7 100	4 400	6 200
Slovakia	134	190	176	* 200	* 200
Spain	28 634	30 428	26 756	49 216	76 342
Sweden	188 325	176 582	221 841	246 983	258 264
Turkey	195 793	195 025	210 152	173 589	* 56 200
Burkina Faso	—	32 215	64 976	68 804	81 422
Congo, Democratic Republic	5 300	6 057	6 369	6 301	6 293
Eritrea	—	—	—	—	40 900
Morocco	46 441	41 625	45 412	53 747	58 000
Namibia	195 782	188 402	173 665	123 529	124 749
Nigeria	13 800	7 000	7 000	14 200	13 400
South Africa	37 034	30 145	26 141	29 040	26 695
Tunisia	7 400	7 700	7 400	—	—
Canada	641 134	426 545	352 125	289 584	321 757
Dominican Republic	—	—	—	4 655	3 700
Guatemala	442	1 221	13 394	14 810	14 975
Honduras	26 000	25 000	30 000	24 988	14 579
Mexico	660 349	642 542	659 878	786 774	661 188
USA	738 400	784 400	832 000	824 700	* 780 000
Argentina	42 000	47 650	43 967	33 787	26 680
Bolivia	389 911	407 332	474 988	442 154	486 955
Brazil	164 258	152 147	169 766	156 000	158 700
Chile	26 762	29 759	45 094	48 071	42 870
Peru	1 281 282	1 351 273	1 315 000	1 421 218	1 334 327
Burma	* 8 000	* 4 800	* 6 100	* 4 800	* 6 500
China	4 859 100	5 187 747	5 118 394	4 750 000	4 630 000
India (b)	759 527	769 927	766 730	758 718	764 089
Iran	138 000	130 000	* 150 000	168 200	157 300
Kazakhstan	425 000	417 000	386 300	384 000	366 000
Korea (Rep. of)	1 434	1 749	1 919	2 070	2 257
Korea, Dem. P.R. of	* 35 000	* 36 000	* 32 000	* 26 000	* 30 000
Laos	883	1 900	—	—	500
Mongolia	59 550	52 050	46 600	44 800	50 100
Pakistan (c)	10 024	—	—	—	7 702
Philippines	19 559	16 730	—	—	—
Saudi Arabia	21 213	26 293	41 804	37 551	39 008
Tajikistan	* 29 900	* 24 300	* 54 300	* 57 800	* 56 500
Thailand	24 996	25 887	34 033	27 154	26 344
Uzbekistan	* 6 000	* 8 000	* 8 000	* 8 000	* 10 000
Vietnam	* 25 000	* 20 000	* 17 000	* 15 000	* 12 000
Australia	1 536 109	1 510 738	1 505 968	1 610 004	883 747
World total	13 400 000	13 600 000	13 600 000	13 400 000	12 300 000

### Note(s)

(a) Metal content of ore

(b) Years ended 31 March following that stated

(c) Years ended 30 June of that stated



## Production of slab zinc

tonnes (metric)

Country	2012	2013	2014	2015	2016
Belgium (a)	250 000	252 000	262 000	260 000	236 000
Bulgaria	73 100	69 600	74 200	75 500	76 200
Finland	314 742	311 686	302 024	305 717	290 599
France	161 000	152 000	171 000	169 000	149 000
Germany	169 000	162 000	168 000	173 000	168 000
Italy	97 200	111 000	138 100	140 200	139 100
Netherlands	257 000	275 000	290 000	291 000	283 000
Norway	152 647	143 444	165 600	162 878	170 541
Poland	138 300	146 300	154 000	161 500	161 200
Russia	250 000	216 000	223 000	229 600	230 000
Spain	483 000	481 000	498 000	509 000	507 000
Ukraine	7 000	3 900	8 100	700	100
Algeria	8 090	* 8 000	6 976	7 100	* 2 000
Namibia	145 639	128 291	118 665	71 818	90 739
Canada	648 619	651 638	649 217	683 118	691 389
Mexico	323 569	322 781	320 923	326 642	321 166
USA	261 400	233 100	180 000	172 300	* 140 000
Argentina	37 500	37 900	29 100	30 300	—
Brazil	245 526	245 417	246 120	231 000	284 500
Peru	319 280	346 400	336 500	335 422	341 518
China	4 881 200	5 279 600	5 806 970	6 155 000	6 273 000
India (a)	704 228	767 994	732 792	758 944	672 010
Iran	148 000	140 000	145 000	138 000	115 000
Japan	571 312	587 291	583 021	566 619	533 689
Kazakhstan	319 847	320 150	324 946	323 848	325 510
Korea (Rep. of)	881 100	886 000	901 000	940 195	1 009 116
Korea, Dem. P.R. of	* 32 000	* 32 000	* 27 000	* 15 000	* 15 000
Thailand	101 263	76 576	65 694	74 121	72 813
Uzbekistan	61 100	* 52 000	* 72 000	* 50 000	* 66 000
Vietnam	* 18 000	* 12 000	* 12 000	* 10 000	* 10 000
Australia	498 259	498 291	481 573	489 030	464 176
World total	12 600 000	12 900 000	13 500 000	13 900 000	13 800 000

### Note(s)

(a) Years ended 31 March following that stated.

## Production of zirconium minerals

tonnes (metric)

Country	2012	2013	2014	2015	2016
Russia (a)	8 000	8 504	7 900	7 334	* 7 300
Ukraine	* 35 000	* 35 000	* 35 000	* 35 000	* 35 000
Kenya	—	—	40 123	25 951	34 977
Madagascar	31 242	31 345	27 275	8 900	11 700
Mozambique	46 900	31 400	50 800	51 800	68 200
Senegal	—	—	9 040	45 248	52 627
Sierra Leone	610	2 950	2 416	1 389	* 1 400
South Africa	* 393 000	* 292 000	* 393 000	* 390 000	* 390 000
USA	* 90 000	* 80 000	* 70 000	* 50 000	* 50 000
Brazil (b)	20 425	24 687	23 659	* 25 000	* 25 000
China	* 33 500	* 33 500	* 33 500	* 33 500	* 33 500
India (c)	21 125	20 626	18 891	* 10 000	* 5 000
Indonesia (d)	* 109 000	* 49 000	* 21 000	* 31 000	* 35 000
Malaysia	442	379	677	826	653
Sri Lanka	293	228	1 335	614	4 117
Vietnam	* 21 000	* 7 000	* 7 000	* 1 000	* 6 000
Australia (e)	706 300	497 550	581 600	607 836	607 893
World total	1 517 000	1 114 000	1 323 000	1 325 000	1 368 000

### 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**

Additional tables relating to Europe only

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

tonnes (metric)

Country	2012	2013	2014	2015	2016
<b>Austria</b>					
Sand and gravel (a)	31 285 739	30 123 970	30 276 160	29 469 566	29 347 490
Crushed rock (a)	26 348 996	25 973 740	26 946 973	24 744 662	24 862 807
<b>Belgium</b>					
Sand and gravel	* 21 000 000	* 21 000 000	* 19 000 000	* 19 000 000	* 19 000 000
Crushed rock	* 46 000 000	* 46 000 000	* 45 000 000	* 45 000 000	* 45 000 000
<b>Bulgaria</b>					
Sand and gravel	9 293 819	8 433 198	9 384 908	9 636 465	8 828 814
Crushed rock	18 281 353	18 963 207	22 481 902	27 392 105	21 725 713
<b>Croatia</b>					
Sand and gravel	4 345 920	3 779 919	3 496 693	3 544 899	3 444 036
<b>Cyprus</b>					
Crushed rock	7 308 056	4 561 152	4 039 087	3 941 378	5 482 913
<b>Czech Republic</b>					
Sand and gravel	18 785 000	17 363 000	17 668 000	19 546 000	18 338 000
Crushed rock	32 535 000	33 004 000	35 972 000	40 260 000	37 242 000
<b>Denmark</b>					
Sand and gravel	39 332 000	38 798 333	41 016 667	45 215 000	40 542 000
Crushed rock	293 000	243 000	223 000	233 000	232 000
<b>Estonia</b>					
Sand and gravel	3 954 600	5 201 380	3 164 640	5 654 920	6 001 380
Crushed rock	6 170 200	6 463 100	4 967 400	5 263 600	5 975 800
<b>Finland</b>					
Sand and gravel	* 34 000 000	* 34 000 000	* 32 000 000	* 32 000 000	* 32 000 000
Crushed rock	* 54 000 000	* 49 000 000	* 47 000 000	* 44 000 000	* 40 000 000
<b>France</b>					
Sand and gravel	138 280 000	135 543 000	126 598 000	117 875 000	* 118 000 000
Crushed rock	196 600 000	205 638 000	201 902 000	184 423 000	* 184 500 000
<b>Germany</b>					
Sand and gravel	235 300 000	228 000 000	238 000 000	239 000 000	247 000 000
Crushed rock	211 000 000	207 000 000	211 000 000	210 000 000	218 000 000
<b>Greece</b>					
Crushed rock	* 29 000 000	* 30 000 000	* 38 000 000	21 632 000	* 22 000 000
<b>Hungary</b>					
Sand and gravel	* 22 250 000	27 252 746	42 444 954	32 820 501	* 33 000 000
Crushed rock	* 9 000 000	7 483 894	8 526 891	10 016 477	* 10 000 000
<b>Iceland</b>					
Sand and gravel	232 112	291 384	* 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	* 22 000 000	* 22 000 000	* 22 000 000	* 22 000 000	* 22 000 000
<b>Italy</b>					
Sand and gravel	118 143 574	79 086 763	41 038 798	46 552 088	59 911 685
Crushed rock	75 406 269	49 075 806	39 669 853	54 850 643	52 783 855
<b>Latvia</b>					
Sand and gravel	8 358 839	7 297 980	12 491 577	8 227 717	9 124 044
Crushed rock	2 072 775	2 664 580	2 229 552	* 2 400 000	* 2 500 000
<b>Lithuania</b>					
Sand and gravel	5 081 166	6 930 916	7 164 096	7 751 342	8 227 013
Crushed rock	3 241 831	3 801 100	4 084 594	4 528 671	4 338 680
<b>Malta</b>					
Crushed rock	1 658 807	1 407 948	1 332 800	(b) 1 387 689	(b) 1 545 166
<b>Montenegro</b>					
Sand and gravel	201 896	213 002	289 469	258 120	170 164
Crushed rock	112 630	143 179	137 299	124 141	184 976
<b>Netherlands</b>					
Sand and gravel	49 900 000	48 974 000	48 000 000	62 000 000	* 62 000 000
<b>Norway</b>					
Sand and gravel	14 262 000	13 984 000	14 111 000	13 000 000	14 959 000
Crushed rock	67 670 000	66 259 000	64 828 000	61 000 000	70 043 000
<b>Poland</b>					
Sand and gravel (c)	* 145 000 000	* 141 000 000	* 104 000 000	* 108 000 000	* 139 000 000
Crushed rock	64 838 700	57 945 100	61 117 900	60 665 300	59 169 100
<b>Portugal</b>					
Sand and gravel	6 093 188	5 964 368	5 975 880	6 638 053	* 6 304 000
Crushed rock	32 966 351	23 369 495	26 539 817	25 255 041	* 25 000 000
<b>Romania</b>					
Sand and gravel	21 068 344	50 829 386	51 812 555	69 894 594	* 70 000 000
Crushed rock	5 593 429	36 888 195	35 115 670	40 091 390	* 40 000 000

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

tonnes (metric)

Country	2012	2013	2014	2015	2016
Slovakia					
Sand and gravel	3 794 873	3 953 525	3 863 467	1 199 550	1 306 800
Crushed rock	10 157 400	8 526 598	10 188 851	14 274 900	12 833 100
Slovenia					
Sand and gravel	1 707 455	2 143 013	2 799 006	2 943 870	1 833 732
Crushed rock	7 557 431	7 067 895	8 123 587	8 108 113	7 470 433
Spain					
Sand and gravel	41 834 967	33 300 000	33 600 000	34 000 000	35 000 000
Crushed rock	96 056 496	67 800 000	64 600 000	70 400 000	70 000 000
Sweden					
Sand and gravel	15 202 100	12 712 100	12 233 750	13 038 828	11 927 694
Crushed rock	71 839 600	66 621 935	68 034 725	75 271 803	75 720 385
Switzerland					
Sand and gravel	49 780 000	49 480 000	53 940 000	50 606 637	* 52 766 160
Crushed rock	2 328 758	2 445 464	2 401 627	2 463 037	2 324 800
United Kingdom					
Sand and gravel	56 600 000	58 000 000	61 100 000	* 63 000 000	* 64 200 000
Crushed rock (d)	94 800 000	94 300 000	110 300 000	116 000 000	* 121 500 000
European total	2 297 000 000	2 215 000 000	2 190 000 000	2 224 000 000	2 282 000 000

### 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 compilation
  - (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. All European countries produce sand and gravel and crushed rock.
  - (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 within a country.
  - (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 2014 census and the rate of change observed from a sample of quarries in subsequent years  
 (c) Includes an estimate for small producers  
 (d) Includes small quantities for other purposes in Northern Ireland

## Production of cement clinker

tonnes (metric)

Country	2012	2013	2014	2015	2016
Austria	* 125 000	* 120 000	* 120 000	* 125 000	* 125 000
Belgium	726 690	911 116	* 900 000	* 900 000	* 900 000
Bulgaria	72 300	77 200	36 700	44 500	61 100
Cyprus	974 383	1 619 080	1 804 562	1 729 877	1 801 647
Czech Republic	2 837 600	2 472 196	2 792 101	2 919 190	3 188 086
Denmark	24 256	—	9 081	—	—
Estonia	714 600	691 400	721 000	356 000	328 900
France	14 178 000	13 778 000	13 146 000	12 513 000	12 528 000
Germany	24 581 000	23 127 000	23 871 000	23 355 000	23 423 000
Greece	5 544 951	6 754 154	7 025 675	* 6 000 000	5 891 157
Hungary	1 332 354	1 065 349	* 1 100 000	376 309	* 400 000
Italy	18 700 700	15 691 270	14 105 796	16 830 997	13 801 063
Latvia	1 485 720	* 1 500 000	* 1 500 000	* 1 500 000	* 1 500 000
Luxembourg	* 740 000	* 710 000	* 700 000	* 700 000	* 700 000
Norway	1 435 497	1 399 012	1 364 866	1 284 156	1 306 292
Poland	11 807 300	10 855 278	11 865 500	11 278 400	12 075 300
Portugal	4 881 543	5 427 443	5 967 865	5 626 409	4 412 793
Romania	5 873 601	5 061 670	5 466 540	6 203 413	5 932 979
Serbia	1 264 333	1 121 538	1 122 964	1 218 213	1 311 629
Slovakia	1 490 768	* 1 500 000	* 1 600 000	* 1 700 000	* 1 700 000
Spain	16 719 769	14 600 000	16 968 987	16 985 662	17 039 405
Sweden	2 768 566	2 598 905	2 602 263	2 825 883	2 847 000
Turkey	* 53 000 000	56 905 641	58 598 068	61 971 380	67 856 234
United Kingdom	6 555 000	6 712 000	7 197 000	(a) ...	(a) ...
European total	178 000 000	175 000 000	181 000 000	176 000 000	179 000 000

### Note(s)

(a) Figure suppressed as a result of the Cement Market Data Order 2016 and excluded from the totals

## Production of finished cement

tonnes (metric)

Country	2012	2013	2014	2015	2016
Austria (a)	4 162 406	3 967 440	4 048 146	4 176 063	4 501 008
Belgium	6 280 000	6 119 000	6 364 000	6 275 000	* 6 300 000
Bulgaria	1 754 204	1 796 021	1 770 508	2 040 853	1 951 312
Croatia	4 255 014	4 543 358	4 670 807	4 498 264	4 325 467
Cyprus	1 025 666	854 778	734 692	788 168	1 018 537
Czech Republic	3 434 000	3 211 000	3 691 000	3 781 000	3 937 000
Denmark	1 817 334	1 852 445	1 876 095	2 027 843	2 259 902
Estonia	481 500	456 700	447 000	395 000	398 100
Finland (a)	1 292 855	1 271 378	1 255 468	1 188 387	1 335 248
France	18 018 000	17 469 000	16 426 000	15 597 000	15 934 000
Germany	32 432 000	31 308 000	32 099 000	31 160 000	32 674 000
Greece	5 422 499	5 553 411	5 563 414	5 291 113	* 5 000 000
Hungary	1 870 000	2 022 000	2 000 000	* 1 277 000	* 1 000 000
Ireland, Republic of	1 573 000	2 083 000	2 533 000	2 911 000	* 2 100 000
Italy	27 831 741	23 114 037	20 913 094	22 308 481	* 20 000 000
Latvia	1 077 000	1 092 000	1 197 000	1 018 000	* 1 000 000
Lithuania	1 014 977	1 069 593	902 733	979 565	1 009 936
Luxembourg	1 177 000	1 128 000	1 057 000	1 033 000	* 1 000 000
Macedonia	644 852	729 672	660 035	671 542	855 295
Netherlands	2 056 000	2 030 000	1 984 000	1 839 000	* 1 970 000
Norway	1 661 157	1 694 150	1 693 379	1 647 566	1 745 614
Poland	15 918 614	14 831 323	15 594 900	15 265 200	15 782 400
Portugal (a)	5 392 995	5 342 661	5 480 202	5 050 802	4 100 010
Romania (a)	7 727 046	7 120 934	7 554 605	7 909 342	7 501 452
Serbia	1 830 708	1 591 703	1 631 633	1 654 390	1 774 404
Slovakia	2 915 166	3 121 000	3 319 320	3 465 597	* 3 450 000
Slovenia	745 000	614 000	706 000	544 000	* 500 000
Spain	15 938 965	* 13 700 000	14 554 039	14 322 672	14 053 229
Sweden	2 611 357	2 582 255	2 883 710	2 766 983	2 795 000
Switzerland (b)	4 395 084	4 563 931	4 583 355	4 219 466	4 397 180
Turkey	67 019 400	72 899 430	72 412 441	71 418 945	75 403 325
United Kingdom	(c) 7 952 000	(c) 8 203 000	(c) 8 958 000	(d) ...	(d) ...
European total	252 000 000	248 000 000	250 000 000	238 000 000	240 000 000

### Note(s)

(a) Sales

(b) Includes production in Liechtenstein

(c) Great Britain only.

(d) Figure suppressed as a result of the Cement Market Data Order 2016 and excluded from the totals



**Price £30**

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