

# Export restrictions

## Content

This document presents additional figures that were elaborated for the monitoring of exports restrictions on raw materials in the 2018 Raw Materials Scoreboard. The final version of the Scoreboard indicator elaborates on figures 1 (with a focus on only one of the export restrictions' coverage options displayed here) and 4, while figures 2 and 3 were not included.

This document also provides more details about the methodological changes in the indicator as compared to the 2016 version of the Scoreboard.

## Novelties from the 2016 version of the Scoreboard

- The scope of export restriction types covered by 2016 Scoreboard's Figure 14 was extended from five to thirteen, and the reference year for export restrictions in place was changed from 2012 to 2014. The new figure (Figure 1 below) - shows the total number of restrictions imposed on exports of raw materials and in force in 2014, broken down by year of introduction, taking into account:
  - *three* export restriction types, i.e., export tax, export quota and export prohibition, as considered in the EU List of Critical Raw Materials 2017;
  - *five* export restriction types, i.e., export tax, export surtax, export quota, export prohibition and licensing requirement, as shown in 2016 Scoreboard;
  - *all thirteen* export restriction types covered by OECD Inventory on Export Restrictions on Industrial Raw Materials.
- Two new figures were added:
  - Figure 2: Total export restrictions imposed on raw material commodities in place in 2014, by restriction type;
  - Figure 3: Total export restrictions imposed on raw material commodities in place worldwide in 2014, by imposing country and restriction type.
- Figure 15 from 2016 Scoreboard was updated (Figure 4 below).

## Key points

- Over the last few years, supplier countries have increasingly used restrictive measures on exports of raw material commodities: more than 80 % of export restrictions on raw material commodities still in force in 2014 were introduced in the previous 7 years and a quarter was introduced between 2011 and 2014.

- As far as the three export restriction types considered in the EU List of Critical Raw Materials 2017 still active in 2014 are concerned, their total number more than doubled between 2011 and 2014.
- The most frequently used types of export restrictions worldwide and still in place in 2014 were by far export taxes and licensing requirements.
- China, Russian Federation, India, Democratic Republic of Congo and Morocco, in this order, were the countries with the highest number of active restrictions on exports raw material commodities in 2014.
- The share of export-restricted global production was above 50 % for more than half of the 32 materials analysed here, them.

## Facts and figures

- Figure 1 presents the number of export restriction measures imposed worldwide on exports of raw material commodities between 1961 and 2014 and still in place in 2014, broken down by year of introduction.
- The scope of export restriction types covered by 2016 Scoreboard<sup>1</sup> was extended from five to thirteen, and the reference year for export restrictions in place was changed from 2012 to 2014. Figure 1 shows now the total number of restrictions imposed on exports of raw materials and still in force in 2014, broken down by year of introduction, taking into account:
  - *Three* export restriction types, i.e., export tax, export quota and export prohibition, as considered in the EU List of Critical Raw Materials (CRM) 2017<sup>2</sup> (*grey line*).
  - *Five* export restriction types, i.e., export tax, export surtax, export quota, export prohibition and licensing requirement, as shown in the 2016 Scoreboard<sup>3</sup> (*orange line*).
  - *All thirteen* export restriction types covered by the OECD Inventory on Export Restrictions on Industrial Raw Materials (*blue line*); these are: export tax; export surtax; licensing requirement; export prohibition; export quota, VAT tax rebate reduction/withdrawal, domestic market obligation, minimum export price/price reference for exports, qualified exporters list, fiscal tax on exports, restrictions on customs clearance point, captive mining, and other measures). This coverage option is the only one retained in the final version of 2018 Scoreboard.
- For the *thirteen-measure coverage*, out of the total number of export restrictions on raw materials still in force in 2014 (around 2 630), more than 80 % of the measures were

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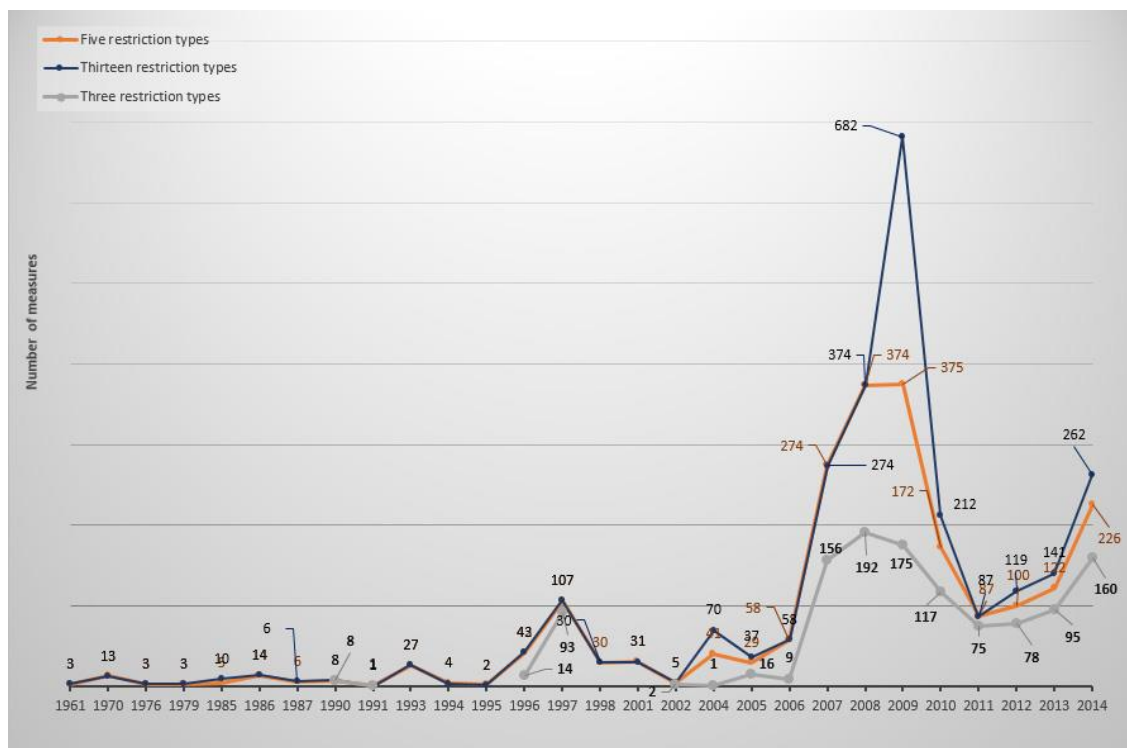
<sup>1</sup> See Figure 14 of the 2016 Raw Materials Scoreboard.

<sup>2</sup> EC, 2017, 'Study on the review of the list of Critical Raw Materials'.

<sup>3</sup> The main export restrictions among the five reported are also consistent with the methodology developed by EC, 2017, 'Study on the review of the list of Critical Raw Materials'.

introduced starting from 2007 and a quarter of them after 2011. As shown in Figure 1, there was also a sharp upward trend in the use of export restrictions after 2011: three times more measures were introduced in 2014 than in 2011.

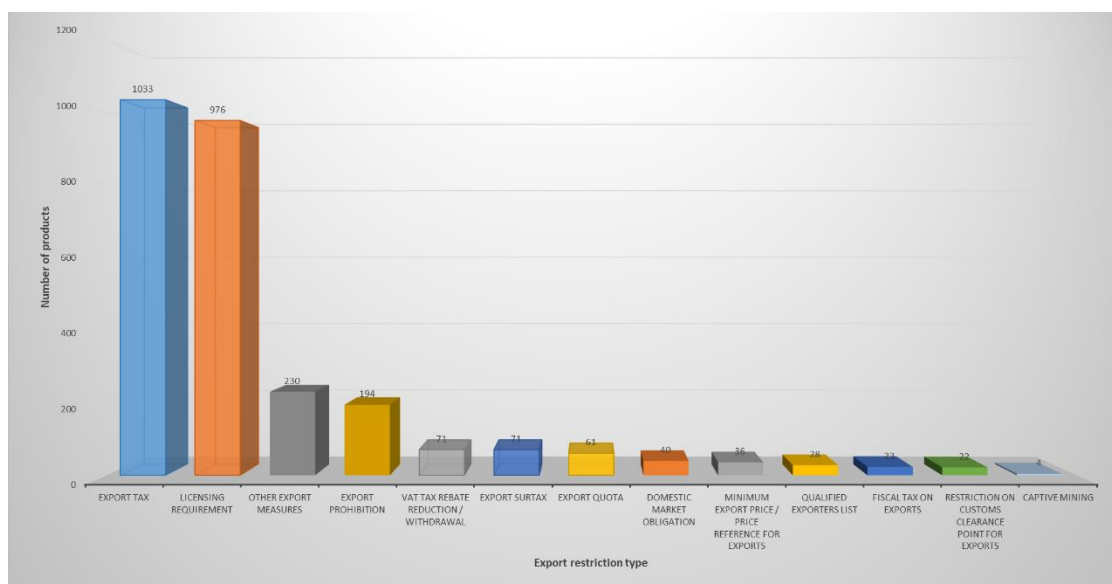
- For the *five-measure coverage*, the series shows that more than 85% of these measures still in force in 2014 were introduced starting from 2002 and almost a quarter of the export restrictions was introduced starting from 2011.
- For the *three-measure coverage* (the one considered for the 2017 CRM assessment), the series shows that the number of these export-restricting measures more than doubled between 2011 and 2014.
- With the exception of the period 2007-2011, the patterns of all three graphs show similar characteristics over time, reflecting that the three measures considered in the EU 2017 Critical Raw Materials List are the main instruments used by countries exporting raw materials. During the period 2007-2011, a big number of "Other export restrictions" and "Price references for exports" measures were introduced for several categories of products, mainly by India and Indonesia.



**Figure 1: Annual breakdown of total number of export restriction imposed on exports of raw materials commodities and still in force in 2014, by year of introduction (world, 1961-2014)<sup>4</sup>.**

<sup>4</sup> Source: JRC elaboration based on the OECD Inventory on Export Restrictions on Industrial Raw Materials, [http://qdd.oecd.org/subject.aspx?Subject=ExportRestrictions\\_IndustrialRawMaterials](http://qdd.oecd.org/subject.aspx?Subject=ExportRestrictions_IndustrialRawMaterials).

- Figure 2 shows the total export restrictions (i.e. all 13 export restrictions types) imposed on raw material commodities<sup>5</sup> worldwide that were in force in 2014, broken down by measure type. The vertical axis shows the number of raw material commodities (according to 6-digit level of the Harmonized Commodity Description and Coding System - HS)<sup>6</sup> affected by these measures.
- The most frequently used types of export restrictions imposed worldwide in 2014 were by far export taxes and licensing requirements for exports (imposed on 1033 and 976 raw material commodities respectively).



**Figure 2: Total export restrictions imposed on raw material commodities in place in 2014, by restriction type (world, 2014)<sup>7</sup>.**

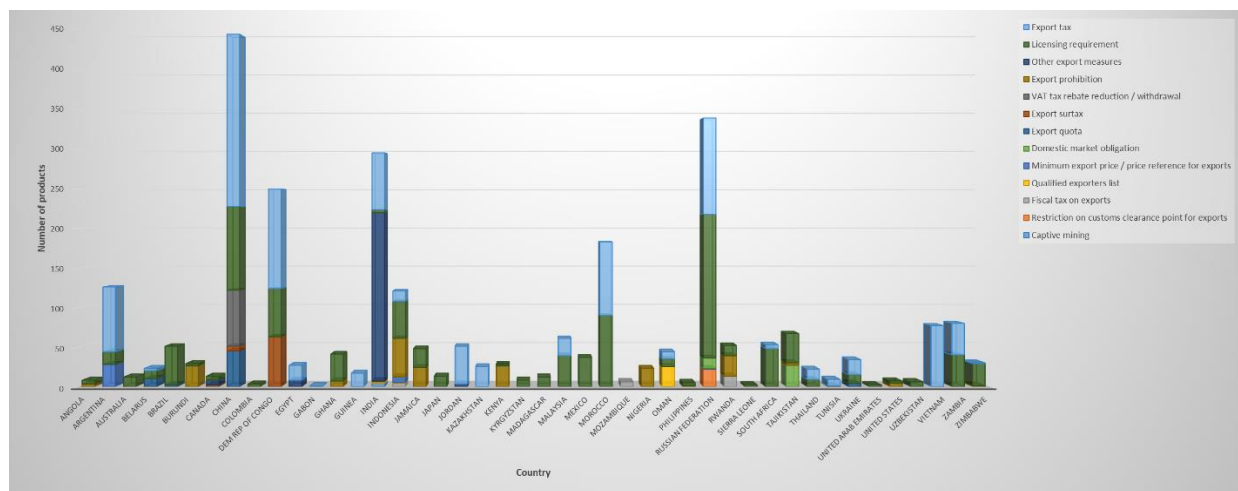
- Figure 3 presents the total number of export restriction imposed on raw materials for a selection of non-EU countries, broken down by measure type. The figure shows that China, Russian Federation, India, Democratic Republic of Congo and Morocco (in this order) were the (five) countries with the highest number of categories of raw material commodities (also referring to HS 6-digit)<sup>8</sup> restricted for export in 2014.

<sup>5</sup> The commodities covered by the OECD Inventory on Export Restrictions are raw and semi-processed products, belonging to the following HS chapters: 25, 26, 27, 28, 31, 44, 71-74, 76-81 (according to the OECD Methodological note to the Inventory of Export Restrictions on Industrial Raw Materials).

<sup>6</sup> See methodological notes.

<sup>7</sup> Source: JRC calculations based on the OECD Inventory on Export Restrictions on Industrial Raw Materials, [http://qdd.oecd.org/subject.aspx?Subject=ExportRestrictions\\_IndustrialRawMaterials](http://qdd.oecd.org/subject.aspx?Subject=ExportRestrictions_IndustrialRawMaterials). See the methodological notes for the composition of the number of products (y axis).

<sup>8</sup> See the methodological notes for composition of total number of HS 6-digit raw material commodities (Number of products, y axis).

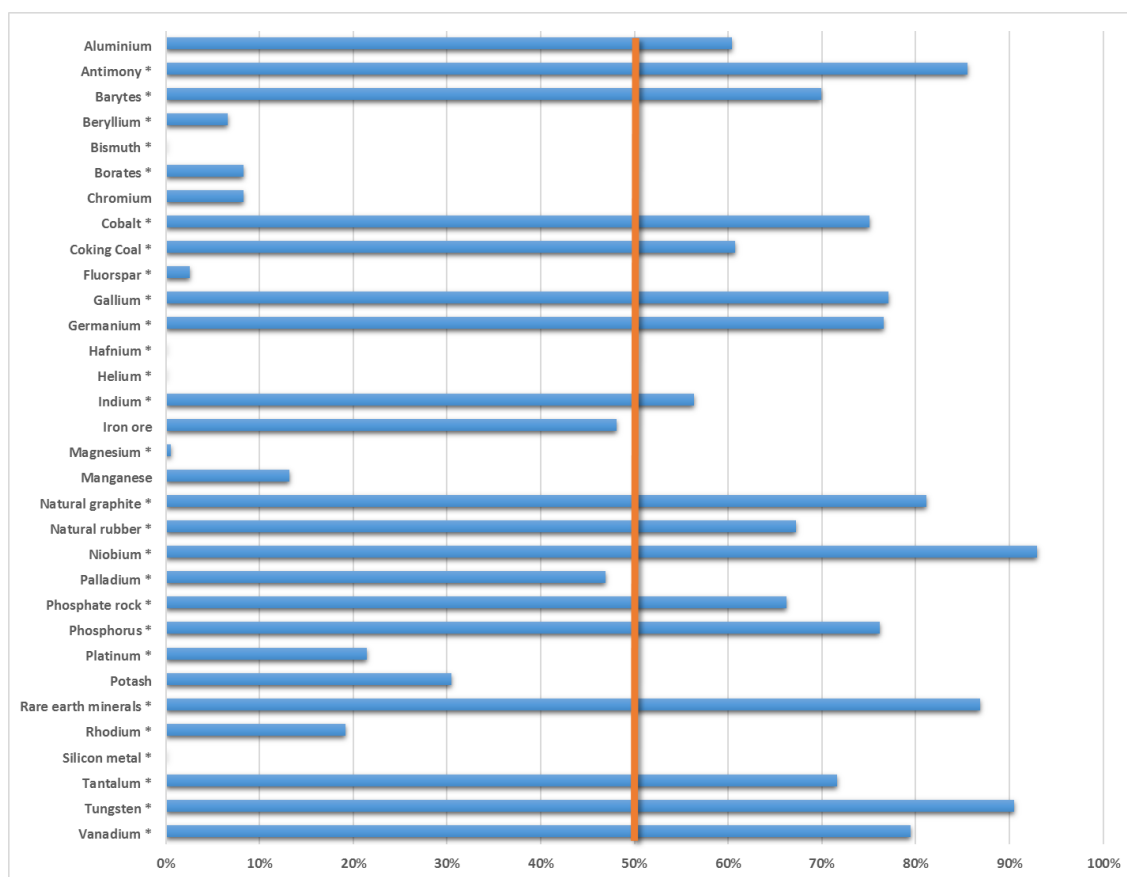


**Figure 3: Total export restrictions imposed on raw material commodities in place in 2014 by country and restriction type (selection of non-EU countries, 2014)<sup>9</sup>.**

- Figure 4 presents the proportion of the global supply of selected raw material commodities subject to export restrictions in 2014 (considering the *thirteen-measure coverage*). This selection includes both critical raw materials, as identified in the 2017 list of critical raw materials for the EU 2017<sup>10</sup>, and some non-critical raw materials with high economic importance for the EU. In this figure, production of a certain raw material is considered as being subject to export restrictions if at least one of the thirteen restrictive measures was still in place in 2014, regardless of its year of introduction. For most materials only the commodities corresponding to the first fabrication stage — i.e. *metal ores and minerals* and *crops* (for natural rubber) — were accounted for.
- As shown in Figure 2, for 17 out of the 32 materials analysed, the share of export-restricted global production is higher than 50 %, and for two of them (i.e. niobium and tungsten) it is higher than 90 percent.

<sup>9</sup> Source: JRC calculations based on the OECD Inventory on Export Restrictions on Industrial Raw Materials, [http://qdd.oecd.org/subject.aspx?Subject=ExportRestrictions\\_IndustrialRawMaterials](http://qdd.oecd.org/subject.aspx?Subject=ExportRestrictions_IndustrialRawMaterials).

<sup>10</sup> Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (European Commission), Study on the review of the list of critical raw materials, <https://publications.europa.eu/en/publication-detail/-/publication/08fdab5f-9766-11e7-b92d-01aa75ed71a1/language-en>.



**Figure 4: Share of primary production subject to export restrictions in 2014 for a selection of raw materials (world, 2014)<sup>11</sup>.**

<sup>11</sup> Source: JRC elaboration, based on data on export restrictions provided by OECD, 'Inventory on Restrictions on Exports of Raw Materials' and UNCTAD TRAINS Databank (for Natural rubber). The sources used for production data are: i) C. Reichl, M. Schatz, G. Zsak, 2017, 'World Mining Data', Volume 32, Minerals Production; ii) British Geological Survey, 'World Mineral Production 2011-2015'; iii) European Commission, 2017, 'Study on the review of the list of Critical Raw Materials'; and iv) FAOSTAT (for data production of natural rubber).

## Methodological notes

- **Name of indicator:** Export restrictions on raw materials.

- **Organizations (data providers):**

1. Export restrictions for all materials except for natural rubber: OECD, Inventory on Export Restrictions on Industrial Raw Materials;
2. Export restrictions for natural rubber: UNCTAD Trade Analysis Information System (TRAINS) DataBank;
3. Production data (used for Figure 4):

C. Reichl, M. Schatz and G. Zsak, 2017, 'World Mining Data', Volume 32, Minerals Production (for antimony, borate, cobalt, coking coal, fluorspar, gallium, germanium, natural graphite, niobium, palladium, phosphates, platinum, potash, rare earth minerals, rhodium, tantalum, tungsten and vanadium);

British Geological Survey, 2017, 'World Mineral Production 2011-2015' (for aluminium, barytes, beryl, chromium, indium, iron ore, magnesium, manganese and silicon metal);

European Commission, 2017, 'Study on the review of the list of Critical Raw Materials ' (for Phosphorus);

FAOSTAT (for natural rubber).

- **Websites (URL):**

1. Export restrictions for all materials except for natural rubber:

[http://qdd.oecd.org/subject.aspx?Subject=ExportRestrictions\\_IndustrialRawMaterials](http://qdd.oecd.org/subject.aspx?Subject=ExportRestrictions_IndustrialRawMaterials)

2. Export restrictions for natural rubber:

[http://databank.worldbank.org/data/reports.aspx?source=UNCTAD-Trade-Analysis-Information-System-\(TRAINS\)](http://databank.worldbank.org/data/reports.aspx?source=UNCTAD-Trade-Analysis-Information-System-(TRAINS))

3. Production data (used for Figure 4):

-World Mining Data: <http://www.wmc.org.pl/?q=node/49>

-British Geological Survey: <http://www.bgs.ac.uk/mineralsUK/statistics/worldStatistics.html>

- European Commission, 2017: [http://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical\\_ro](http://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical_ro)

-FAOSTAT: <http://www.fao.org/faostat/en/#data/QC>

- **Definition and description of data:**

The 13 export restriction categories covered by the OECD's Inventory used in figures 1-3 are: export tax, export surtax, licensing requirement, export prohibition, export quota, VAT tax rebate reduction/withdrawal, domestic market obligation, minimum export price/price reference for exports, qualified exporters list, fiscal tax on exports, restrictions on customs clearance point, captive mining, and other measures. As indicated in the 'Methodological note to the Inventory of Export Restrictions on Industrial Raw Materials' accompanying the OECD's Inventory on Restrictions on Exports of Raw Materials, 'export restrictions were entered into the database at the 6-digit level using the HS2007 nomenclature. If a measure was applied at the HS8 or HS10 digit

level and the information is available in the data source, this detail is recorded in the respective field in the Inventory'. Also, as in the case of the export quota imposed by Brazil on exports of niobium oxides in 2014, if a measure is only applied to a specific subgroup of the HS 6-digit product group, only the products specified in the column product code or name as it appears in the legislation are considered. When no HS8- or HS10-digit level or product code/name is specified, all HS 6-digit product groups are regarded as being restricted.

In Figure 2 and 3, *Number of products* on y-axis includes all HS 6-digit classification categories of raw materials commodities covered by the OECD's inventory. They are either primary or processed materials and grouped into eight broad categories: metal ores and minerals; wood; ferrous metals; non-ferrous base metals; non-ferrous minor metals; precious metals and stones; chemicals and compounds; waste and scrap (classified as primary).

The reference year for data on both production and export restrictions is 2014.

- **Update frequency:**

- OECD, Inventory on Export Restrictions on Industrial Raw Materials: Data available for the period 1961-2014. No update since 2014
- TRAINS DataBank: Regularly.
- World Mining Data: Annually.
- British Geological Survey: Annually.
- European Commission, 2017: Every three years.
- FAOSTAT: Regularly.

- **Data format:** online, downloadable in.xls or .pdf format.

- **Geographic coverage:** worldwide.

- **JRC processing methodology for the indicator:**



- *Scope of raw material commodities*

In Figure 1, 2 and 3, the number of products on y-axis includes all HS 6-digit classification categories of raw materials commodities covered by the OECD's inventory. They are either primary or processed materials and grouped into eight broad categories: metal ores and minerals; wood; ferrous metals; non-ferrous base metals; non-ferrous minor metals; precious metals and stones; chemicals and compounds; waste and scrap (classified as primary).

In Figure 4, the scope of analysis has been limited to the first supply chain stage, such as metal ores and minerals. For example, we have only dealt with the first fabrication stage of rare earths, namely ores of rare earth metals, corresponding in trade statistics to HS 253090, 'Mineral substance, n.e.s. in Ch. 25'. The table below presents the fabrication stage and corresponding to the HS2007 6-digit commodities considered in the calculation of the restricted production share for each material presented in Figure 4 (except natural rubber), as listed in the OECD's Inventory on Restrictions on Exports of Raw Materials.

Material	Fabrication stage	HS 6-digit codes	Commodity title	Country
Aluminium	Non-ferrous base metals	760110	Aluminium, not alloyed, unwrought	China, Indonesia, Kazakhstan, Oman, Russia, Tajikistan
		760120	Aluminium alloys, unwrought	
Antimony	Metal ores and minerals	261710	Antimony ores and concentrates	China, Russian Federation, Tajikistan
Barytes	Metal ores and minerals	251110	Natural barium sulphate (barytes)	China, India, Morocco, Vietnam
Beryllium	Non-ferrous minor metals	811212	Beryllium, unwrought; powders	China
		811219	Beryllium & articles thereof, n.e.s. in 81.12	
Bismuth	No export restriction data			
Borates	Metal ores and minerals	252810	Natural sodium borates & concentrates thereof (whether/not calcined)	Argentina
		252890	Natural borates & concentrates thereof (excl. sodium borates)	
Chromium	Metal ores and minerals	261000	Chromium ores & concentrates	China, India, Zimbabwe
Cobalt	Metal ores and minerals	260500	Cobalt ores and concentrates	China, RD of Congo, Indonesia, Morocco, Madagascar, Philippine, Zambia
Coking coal	Metal ores and minerals	270112	Bituminous coal, whether/not pulverised but not agglomerated	China, India
Fluorspar	Metal ores and minerals	252921	Fluorspar, containing by weight 97 % or less of calcium fluoride	Kenya, Morocco
		252922	Fluorspar, containing by weight >97 % of calcium fluoride	
		252930	Leucite; nepheline & nepheline syenite	
Gallium	Non-ferrous minor metals	811292	Germanium, vanadium, gallium, hafnium, indium, niobium (columbium), rhenium, & articles of these metals, incl. waste & scrap, powder, unwrought; 81129290, Other	China
Germanium	Non-ferrous minor metals	811292	Germanium, vanadium, gallium, hafnium, indium, niobium (columbium), rhenium, & articles of these metals, incl. waste & scrap, powder, unwrought; 81129210, Germanium (China)	China

Hafnium	No export restrictions	811292	Germanium, vanadium, gallium, hafnium, indium, niobium (columbium), rhenium, & articles of these metals, incl. waste & scrap, powder, unwrought; 81129290, Other	
Helium	No export restriction data			
Indium	Non-ferrous minor metals	811292	Germanium, vanadium, gallium, hafnium, indium, niobium (columbium), rhenium, & articles of these metals, incl. waste & scrap, powder, unwrought; 81129230, indium (China)	China
Iron ore	Metal ores and minerals	260111	Iron ores & concentrates (excl. roasted iron pyrites), non-agglomerated	China, India
		260112	Iron ores & concentrates (excl. roasted iron pyrites), agglomerated	
		260120	Roasted iron pyrites	
Magnesium	Non-ferrous minor metals	810411	Unwrought magnesium, containing at least 99.8 % by weight of magnesium	Brazil
		810419	Unwrought magnesium (excl. of 810411)	
Manganese	Metal ores and minerals	260200	Manganese ores & concentrates, incl. ferruginous manganese ores & concentrates with a manganese content of 20 %/more, calc. on the dry weight	Gabon, India, Malaysia
Natural graphite	Metal ores and minerals	250410	Natural graphite, in powder/flakes	China, India
		250490	Natural graphite other than in powders/flakes	
Niobium	Metal ores and minerals	261590	Niobium/tantalum/vanadium ores and concentrates; 26159090, Other (China)	Brazil, Burundi, China, RD of Congo
Phosphates	Metal ores and minerals	251010	Natural calcium phosphates, natural aluminium calcium phosphates and phosphatic chalk, unground	China, Egypt, India, Jordan, Morocco, Vietnam
		251020	Natural calcium phosphates, natural aluminium calcium phosphates and phosphatic chalk, ground	
Phosphorus	Chemicals and compounds	280470	Phosphorus	China, Vietnam
Platinum Group Metals — Palladium	Metal ores and minerals	261690	Precious metal ores & concentrates (excl. silver ores & concentrates)	Russia, Zimbabwe
Platinum Group Metals — Platinum	Metal ores and minerals	261690	Precious metal ores & concentrates (excl. silver ores & concentrates)	Russia, Zimbabwe
Platinum Group Metals — Rhodium	Metal ores and minerals	261690	Precious metal ores & concentrates (excl. silver ores & concentrates)	Russia, Zimbabwe
Potash	Metal ores and minerals	310420	Potassium chloride	Belarus, China, Jordan
		310430	Potassium sulphate	
		310490	Mineral/chemical fertilisers, potassic (excl. of 310420 and 310430)	
Rear earth minerals	Metal ores and minerals	253090	Mineral substance, n.e.s. in Ch.25; 25309020, Ores of rare earth metals (China)	China
Silicon metal	Chemicals and compounds	280461	Silicon, containing by weight not <99.99 % of silicon	India
		280462	Silicon, containing by weight <99.99 % of silicon	
Tantalum	Metal ores and minerals	261590	Niobium/tantalum/vanadium ores and concentrates 26159090, Other (China)	Burundi, China, RD of Congo, Rwanda