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U.S. Geological Survey Data Series 140

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Historical Statistics for Mineral and Material Commodities in the United States

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Version 2.0
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The U.S. Geological Survey (USGS) provides information to the public and to policy-makers concerning the current use and flow of minerals and materials in the United States economy. The USGS collects, analyzes, and disseminates minerals information on most nonfuel mineral commodities.

This USGS digital database is an online compilation of historical U.S. statistics on mineral and material commodities. The database contains information on approximately 90 mineral commodities, including production, imports, exports, and stocks; reported and apparent consumption; and unit value (the real and nominal price in U.S. dollars of a metric ton of apparent consumption). For many of the commodities, data are reported as far back as 1900. Each commodity file includes a document that describes of the units of measure, defines terms, and lists USGS contacts for additional information.

End-use tables complement these statistics by supplying, for most of these commodities, information about the distribution of apparent consumption.

This publication draws on more than 125 years of minerals information experience. At the request of the 47th Congress of the United States (1882; 22 Stat. 329), the U.S. Government began the collection and public distribution of these types of data. The Federal agencies responsible for the collection of the data have changed through time. For the years 1882-1924, the USGS collected and published these data; the U.S. Bureau of Mines (USBM) performed these tasks from 1925-95; and in 1996, the responsibilities once again passed to the USGS (following the closure of the USBM) (Mlynarski, 1998).

The USGS collects data on a monthly, quarterly, semiannual, and annual basis from more than 18,000 minerals-related producer and consumer

establishments that cooperate with the USGS. These companies voluntarily complete about 40,000 canvass forms that survey production, consumption, recycling, stocks, shipments, and other essential information. Data are also gathered from site visits, memberships on domestic and international minerals-related committees, and coordination with other government organizations and trade associations.

The USGS makes this information available through published products, including monthly, quarterly, and annual Mineral Industry Surveys, the annual Minerals Yearbook (MYB), the annual Mineral Commodity Summaries (MCS), and special mineral commodity studies, including the history of metal prices and materials flow studies.

Methodology

The data included in this publication were compiled primarily from publications of the USGS and USBM. The principal references for these data are the annual MYB publication and its predecessor, Mineral Resources of the United States (MR). Other USGS and USBM publications used as references included: Statistical Compendium (SC), Metal Prices in the United States Through 1991 (MP91), Metal Prices in the United States Through 1998 (MP98), MCS and its predecessor Commodity Data Summaries (CDS), Minerals Facts and Problems (MFP), and various USBM Information Circulars. In some cases, USGS mineral commodity specialists added previously unpublished or recently revised data to the historical statistics series.

The data in these worksheets are standardized to metric tons (t) and dollars per metric ton (\$/t) to allow for data comparison among mineral commodities through time. During the 20th century, different units of measure were used: units varied between commodities and even within a commodity through time. Cement, for example, was originally reported in barrels, the industry standard for much of last century, from 1972 to 1990 in short tons, and was switched to metric tons in 1991. From the mid-1980s to the early 1990s, most commodities switched to metric units. However, some commodities are still reported in units that represent the physical state of the commodity (million cubic meters for helium, a gas) or an industry market unit (carats for diamonds).

Data are reproduced as they were published (after the necessary conversions) for production, shipments, imports, exports, reported and apparent consumption, stocks, and end uses. Blank cells in the tables indicate that data were not available or were withheld because the data were proprietary; blank cells are not zero. The worksheet notes accompanying each table indicate whether data were withheld or not available.

Apparent consumption is a calculated figure. The general formula for apparent consumption is as follows:

$$\text{Apparent Consumption} = \text{Production} + \text{Imports} - \text{Exports} \pm (\text{Stock Change}).$$

However, in some instances, reported consumption (from industry sources) was directly recorded in MYB or MCS. If both apparent consumption and reported consumption are available, both are reproduced in these reports. When apparent consumption could not be calculated because of withheld data or unavailable data, it was estimated using Microsoft® Excel².

End use for this application has been defined as the use of the mineral or material commodity in a particular industrial sector (for example, construction, containers and packaging, electronics, and transportation) or product (for example, automobiles, batteries, flame retardants, and soaps and detergents).

For most commodities, end-use data are industry reported and are published in the MYB. For several commodities, the end-use data are not available or are of limited reliability. In such cases, data are usually calculated by applying estimated end-use shares (percentages) by category, as reported in the Mineral Commodity Summaries, to apparent consumption. Otherwise, USGS mineral commodity specialists estimated end-use statistics using a variety of sources of information. Finally, for a limited number of commodities, no end-use data are available.

Unit value is a measure of the price of a physical unit of apparent consumption (in this case, a metric ton) in dollars. For a commodity whose apparent consumption is measured in a single physical form, such as copper metal, a simple price series may be used to estimate the unit value. For many commodities, apparent consumption measures more than one form of the commodity. The commodity chromium, for example, includes

chromium metal, chromium ferroalloys, and chromite ore in its measurement of apparent consumption. Weighted averages were used in these cases, where the price of each form of chromium was weighted by the amount that each form contributes to apparent consumption. For many commodities, a price series was not available, but total value of exports, imports, and production was reported. Unit values were derived, in these cases, using the physical quantity data for exports, imports, and production. The notes that accompany each mineral commodity worksheet discuss the source of apparent consumption and unit value data and the assumptions made in estimating these data when they were not available from the references. Unit values in these tables are also reported in 1998 (constant) dollars, where the Consumer Price Index for All Urban Consumers was used as the deflator. Constant dollars remove the effect of inflation on the unit value.

The data sources and methods for each mineral commodity are documented in a Microsoft® Word file that is embedded in each Microsoft® Excel workbook. By clicking on the Microsoft® Word icon located in the spreadsheet, the notes for the commodity will be shown. The notes, where appropriate, also provide a brief explanation of shifts or trends in the use of the commodity, anomalies in the data, or additional, relevant information. Finally, the notes also provide contact details for relevant USGS specialists.

In the end-use tables, each workbook contains three worksheets, accessed through the tabs that are located on the bottom left corner of the spreadsheet. These worksheets are labeled "end-use statistics," "end-use graph," and "end-use notes." When the workbook is first opened, the "end-use statistics" tab is viewed, showing the detailed yearly end-use statistics for the commodity. By clicking on the "end-use graph" tab, a graphic displaying the statistics is shown. Clicking on the "end-use notes" tab displays the same worksheet notes embedded as a Microsoft® Word file.

Click on the following list of mineral commodities to view the data.

| Commodity | Supply-Demand Statistics | | | | End-Use Statistics | | | |
|--------------------------|--------------------------|---------------------|------------------------------|-----------------------|---------------------|---------------------|-------------------|-----------------------|
| | Format | | Last modification (MM/DD/YY) | Data coverage through | Format | | Last modification | Data coverage through |
| Abrasives (manufactured) | PDF | XLS | 11/06/07 | 2006 | NA | | | |
| Abrasives (natural) | PDF | XLS | 04/17/08 | 2006 | NA | | | |
| Aluminum | PDF | XLS | 10/05/07 | 2006 | PDF | XLS | 03/24/06 | 2003 |
| Agriculture and Fishery | PDF | XLS | 07/16/04 | 2002 | NA | | | |
| Antimony | PDF | XLS | 10/17/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Arsenic | PDF | XLS | 11/08/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Asbestos | PDF | XLS | 10/15/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Barite | PDF | XLS | 10/15/07 | 2006 | NA | | | |
| Bauxite and alumina | PDF | XLS | 10/25/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |

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|------------------------------|---------------------------|---------------------|----------|------|---------------------|---------------------|----------|------|
| Beryllium | PDF | XLS | 09/10/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Bismuth | PDF | XLS | 10/25/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Boron | PDF | XLS | 10/17/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Bromine | PDF | XLS | 10/01/07 | 2006 | NA | | | |
| Cadmium | PDF | XLS | 10/05/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Cement | PDF | XLS | 12/02/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Cesium | PDF | XLS | 10/05/07 | 2006 | NA | | | |
| Chromium | PDF | XLS | 02/08/08 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Clays | PDF | XLS | 11/20/07 | 2006 | | | | |
| Ball clay | included with Clays above | | | | PDF | XLS | 09/15/05 | 2003 |
| Bentonite | included with Clays above | | | | PDF | XLS | 09/15/05 | 2003 |
| Fire clay | included with Clays above | | | | PDF | XLS | 09/15/05 | 2003 |
| Fuller's earth | included with Clays above | | | | PDF | XLS | 09/15/05 | 2003 |
| Kaolin | included with Clays above | | | | PDF | XLS | 09/15/05 | 2003 |
| Miscellaneous clay and shale | included with Clays above | | | | PDF | XLS | 09/15/05 | 2003 |
| Coal combustion products | PDF | XLS | 11/07/06 | 2004 | NA | | | |
| Cobalt | PDF | XLS | 12/06/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Columbium (niobium) | PDF | XLS | 11/03/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Copper | PDF | XLS | 01/14/08 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Diamond (industrial) | PDF | XLS | 10/23/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Diatomite | PDF | XLS | 11/15/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Feldspar | PDF | XLS | 11/02/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |

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|----------------------|---------------------|---------------------|----------|------|---------------------|---------------------|----------|------|
| Fluorspar | PDF | XLS | 10/15/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Gallium | PDF | XLS | 09/28/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Garnet (industrial) | PDF | XLS | 09/28/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Gemstones | PDF | XLS | 11/30/07 | 2006 | NA | | | |
| Germanium | PDF | XLS | 10/25/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Gold | PDF | XLS | 11/13/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Graphite (natural) | PDF | XLS | 10/17/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Gypsum | PDF | XLS | 12/12/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Hafnium | PDF | XLS | 09/21/07 | 2006 | NA | | | |
| Helium | PDF | XLS | 12/07/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Indium | PDF | XLS | 10/18/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Iodine | PDF | XLS | 11/20/07 | 2006 | NA | | | |
| Iron and steel | PDF | XLS | 01/03/08 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Iron and steel scrap | PDF | XLS | 10/14/07 | 2006 | NA | | | |
| Iron and steel slag | PDF | XLS | 10/04/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Iron ore | PDF | XLS | 11/15/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Iron oxide pigments | PDF | XLS | 11/01/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Kyanite | PDF | XLS | 10/26/07 | 2006 | NA | | | |
| Lead | PDF | XLS | 11/08/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Lime | PDF | XLS | 11/02/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Lithium | PDF | XLS | 10/01/07 | 2006 | NA | | | |
| Magnesium compounds | PDF | XLS | 10/04/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |

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|--------------------------------|---------------------|---------------------|----------|------|---------------------|---------------------|----------|------|
| Magnesium metal | PDF | XLS | 10/15/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Manganese | PDF | XLS | 12/11/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Mercury | PDF | XLS | 10/25/07 | 2006 | PDF | XLS | 09/26/05 | 2003 |
| Mica (scrap and flake) | PDF | XLS | 12/10/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Mica (sheet) | PDF | XLS | 12/13/07 | 2006 | NA | | | |
| Molybdenum | PDF | XLS | 10/10/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Nickel | PDF | XLS | 12/21/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Nitrogen | PDF | XLS | 10/26/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Organics (nonrenewable) | PDF | XLS | 07/19/04 | 2002 | NA | | | |
| Peat | PDF | XLS | 11/27/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Perlite | PDF | XLS | 10/23/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Phosphate rock | PDF | XLS | 10/19/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Platinum-group metals | PDF | XLS | 10/16/07 | 2006 | NA | | | |
| Potash | PDF | XLS | 12/03/07 | 2006 | NA | | | |
| Pumice and pumicite | PDF | XLS | 10/16/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Quartz crystal (industrial) | PDF | XLS | 10/15/07 | 2006 | NA | | | |
| Rare earths | PDF | XLS | 11/20/07 | 2006 | NA | | | |
| Rhenium | PDF | XLS | 11/28/07 | 2006 | NA | | | |
| Salt | PDF | XLS | 10/31/07 | 2006 | PDF | XLS | | |
| Sand and gravel (construction) | PDF | XLS | 11/29/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |

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|-------------------------------|---------------------|---------------------|----------|------|---------------------|---------------------|----------|------|
| Sand and gravel (industrial) | PDF | XLS | 10/31/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Selenium | PDF | XLS | 10/22/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Silicon | PDF | XLS | 12/19/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Silver | PDF | XLS | 12/21/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Soda ash (sodium carbonate) | PDF | XLS | 10/11/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Sodium sulfate | PDF | XLS | 10/23/07 | 2006 | NA | | | |
| Stone (crushed) | PDF | XLS | 11/16/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Stone (dimension) | PDF | XLS | 11/08/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Strontium | PDF | XLS | 10/15/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Sulfur | PDF | XLS | 12/07/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Talc and pyrophyllite | PDF | XLS | 11/09/07 | 2006 | PDF | XLS | 09/15/05 | 2003 |
| Tantalum | PDF | XLS | 10/11/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Tellurium | PDF | XLS | 04/08/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Thallium | PDF | XLS | 10/17/07 | 2006 | NA | | | |
| Thorium | PDF | XLS | 11/02/07 | 2006 | NA | | | |
| Tin | PDF | XLS | 10/18/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Titanium dioxide pigment | PDF | XLS | 11/26/07 | 2006 | PDF | XLS | 01/24/06 | 2004 |
| Titanium metal | PDF | XLS | 11/26/07 | 2006 | PDF | XLS | 01/26/06 | 2004 |
| Titanium mineral concentrates | PDF | XLS | 11/27/07 | 2006 | NA | | | |
| Tungsten | PDF | XLS | 11/02/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |

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|--------------------------------|---------------------|---------------------|------------|------|---------------------|---------------------|----------|------|
| Vanadium | PDF | XLS | 12/13/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Vermiculite | PDF | XLS | 12/04/07 | 2006 | NA | | | |
| Wollastonite | PDF | XLS | 11/13/07 | 2006 | NA | | | |
| Wood | PDF | XLS | 12/15/03 | 2002 | NA | | | |
| Zinc | PDF | XLS | 11/02/07 | 2006 | PDF | XLS | 09/01/05 | 2003 |
| Zirconium mineral concentrates | PDF | XLS | 11/21/2007 | 2006 | NA | | | |

Footnotes

NA Not Available

¹ Also contributing to this series were Cyrus Berry, Melissa Crane, Thomas Goonan, and John Sznoppek.

² Any use of trade, product, or firm names in this publication is for descriptive purposes only and does not imply endorsement by the U.S. Government.

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