

THE MINERAL INDUSTRY OF GERMANY

By Harold R. Newman

The German economy was the world's third largest, after the United States and Japan, and accounted for about one-third of Europe's gross domestic product (GDP). Sluggish global demand, except for Asia, has been particularly damaging to Germany, which depends heavily on exports for its economic growth. The GDP at purchasing power parity was \$2,256 billion, and per capita income at purchasing power parity was \$27,350. The inflation rate was 1.1%, and the unemployment rate was 9.9%. Population was 82.6 million (International Monetary Fund, 2004§¹).

A growth rate of 0.75% was expected for 2003 after a slight 0.2% gain in 2002. The German economy faced other serious issues that included high unemployment, high outstanding Government debt, increasing share of Government revenues going for debt service payment, high tax rates, continuing transfer payments to eastern Germany, and growing social security costs (U.S. Commercial Service, 2004b§).

Government Policies and Programs

The Government's declared primary objective continued to be seeking ways to stimulate economic growth and employment and to get a grip on rising Government debt. To this end, the Government was pursuing a combination of budget consolidation, growth incentives, and structural reform. Although the Government intervenes in the economy through the provision of subsidies to selected sectors and the ownership of some segments of the economy, a social market economy with competition and free enterprise was promoted as a significant segment of Government policy (U.S. Commercial Service, 2004a§).

Mindful of the impact of high tax rates on the German investment climate, the Government was continuing with tax reforms, which included tax cuts. These reforms would cut corporate income taxes, reduce personal income tax rates sought to broaden the tax base by closing some tax loopholes, and eliminate capital gains tax on sales of equity holdings by one corporation to another. The next round of income tax cuts was planned for 2004 (U.S. Commercial Service, 2004a§).

Environmental Issues

The environment in Germany is the responsibility of the Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (BMU) (Federal Ministry for the Environment, Water Conservation, and Nuclear Safety). Falling within its purview is the Umwelt Bundes Amt für Mensch und Umwelt (Federal Environment Agency), the Bundesamt für Naturschutz (Federal Office for Nature Conservation), and the

¹References that include a section mark (§) are found in the Internet References Cited section.

Verantwortung für Mensch und Umwelt (Federal Office for Radiation Protection).

Environmental concerns that relate to mining are addressed under the Federal mining law and its provisions for environmental impact assessments that must be completed before mining can start. The objective of the assessment is to identify and evaluate all environmental consequences of a planned project by taking into account various design options. The environmental evaluation process in Germany presents a risk for the company involved because project approval is not guaranteed even after completion of the assessment, which usually involves considerable time and resources.

With support from the BMU, Berlin began a natural-gas-fueled taxi program in 2000. As of April 2003, 170 vehicles were running on natural gas. The city was expecting to have more than 1,000 natural-gas-fueled vehicles in the coming years. Of the 361 natural gas service stations in Germany, Berlin had 12 (U.S. Energy Information Agency, 2003§).

The greenhouse gas emissions in Germany have been decreasing; the country has achieved a 19.4% reduction in these emissions since 1990. Germany has cut about 240 million metric tons (Mt) in greenhouse gas emissions, which was almost twice as much as the overall European Union (EU) reduction, and was in close reach of the Kyoto Agreement target, which was a reduction of 21% of greenhouse gas emissions by 2010 compared with 1990 levels (Federal Ministry for the Environment, Water Conservation and Nuclear Safety, 2003§).

Production

Production in the mining and metals industries depended on a variety of factors that included the availability of materials and supply and demand. The easing of the worldwide recession was a positive factor for those industries that depended on exporting their products. The importance of certain sectors of the German mining industry has decreased steadily during the past decade. Germany was among the world's largest and most technologically advanced producers of ammonia, cement, chemicals, coal, electronics, iron, machinery, steel, and vehicles. Germany has remained a world leader in the mining equipment manufacturing sector. Selected indices of production are listed in table 3.

Trade

Germany was one of the world's major trading nations. About one-third of its GDP depended on exports. On average, one job in four depended on trade. Export and import trade between Germany and the United States was worth more about \$97 billion in 2003. Germany was the United States's leading European trading partner (table 4). Outside the EU, the United States and Japan were Germany's major trading partners (U.S. Census Bureau, 2004). German exports, reexports, and imports of selected mineral commodities are listed in tables 5 and 6.

As a major mineral-processing nation, Germany relied mainly on imports to feed the metals-processing industry, which transformed raw materials into products that supplied the manufacturing industry and provided the bulk of the country's exported materials. The nonferrous metallurgical industry provided its raw materials by imports and recycling. Supply of precious metals originated from domestic nonferrous refineries and supplies of scrap and imports of wrought metal and scrap.

Structure of the Mineral Industry

The structure of the industry in Germany and the principal companies that operated in the production and processing of metals and minerals are listed in table 2. Most of the producing and processing facilities still in operation were small compared with those in the former Federal Republic of Germany except for lignite and potash, which were very large operations. The restructuring and privatization of the facilities in the former German Democratic Republic continued in 2003. The Treuhandanstalt (Interest Management Association) retained control of a few companies until they were sold or closed.

Commodity Review

Metals

Aluminum.—In 2003, Germany's primary aluminum industry was the largest in the EU, although it was considered to be medium sized when compared with other world producers. VAW Aluminium AG (a subsidiary of E.ON AG) accounted for more than 75% of the country's primary aluminum production. VAW's wholly owned aluminum smelters in Germany and its participating interests in smelters abroad ensured the supply of input metal for the company's downstream fabricating operations.

Germany's secondary aluminum smelters with production capacities of 20,000 metric tons per year (t/yr) or less were expected to come under significant pressure from cheaper and more-efficient foreign competition. Most small companies had not invested in new technology. To survive in the marketplace, modern and efficient equipment and operation are required. Neighboring countries upgraded their operations and, as a result, had much lower production costs, particularly for the popular grades of aluminum ingots, and their freight costs are relatively low (Metal Bulletin, 2003a).

Copper.—Norddeutsche Affinerie AG (NA) operated the custom smelter and refinery at Hamburg and was the world's fifth ranked custom copper smelter with a production capacity of about 500,000 t/yr of copper cathode, 320,000 t/yr of copper rod, and 176,000 t/yr of copper billets and cake. NA was Europe's largest copper smelter.

During 2003, Hüttenwerk Kayser AG (HK) cut back production at its Lunen plant owing to tightening scrap supplies and deteriorating market conditions. HK also reduced its workforce from 630 to 443 employees in a restructuring program. Hüttenwerk Kayser blamed the situation on protracted weakness of the copper price, heavy export duties from Russia, and a ban on exports from Ukraine. Among other restructuring

steps was the streamlining of the Kayser Recycling System. The recycling technology developed by the company was claimed to be the most advanced in Europe with high levels of environmental and energy efficiencies and the ability to process alternate feed, such as electronic scrap products (Metal Bulletin, 2003b).

Steel.—Europe's steel industry may look somewhat patchy or uneven to some observers, but it is the most consolidated in the world. European steel producers included the Usinor Group [24-million-metric-ton-per-year (Mt/yr) capacity], the Corus Group (22.9-Mt/yr capacity), the Arbed Group (22.4-Mt/yr capacity), the Thyssen Krupp Group (18.9-Mt/yr capacity), and the Riva Group (14-Mt/yr capacity) and accounted for more than 100 Mt/yr of raw steel capacity, which was about one-half of the EU total.

ThyssenKrupp Stahl AG completed its 2-year €33 million (\$42 million) modernization of the Dortmund cold-rolling mill. Work involved modernization of the pickling line and cold-rolling mills, and construction of a new fully continuous exit section with two coilers and a new coil transfer section. The upgrades brought it up to the same standard as ThyssenKrupp's Duisburg plant, which was the world's most advanced cold-rolling mill. The Dortmund and the Duisburg plants provided high-surface-quality sheet for the automotive industry (ThyssenKrupp Stahl AG, 2003§).

After freeing itself from bankruptcy and state control, Saarstahl AG tailored its products to match the needs of end users. Saarstahl shifted product mix to bars, forged products, and higher end wire rods and eliminated meshmaking wire rod from its portfolio. The company's strategy was aimed at the sophisticated products (steel cord, spring steel, free-cutting steel) that were closer to the needs of customers that made tires, springs, and screws. About 65% of Saarstahl's long products were used in automotive applications. Owing to the trend towards diesel engines, carmakers were increasingly reverting to steel for parts that had been previously been made of aluminum (Metal Bulletin, 2003c).

Zinc.—Xstrata plc announced that it had completed its acquisition of the Nordenham zinc smelter from Métaleurop SA. Consideration was reported to be \$100 million; this included \$13 million for zinc-related inventories (Mining Journal, 2003).

Industrial Minerals

Bentonite.—In terms of production, Süd-Chemie AG was the leading bentonite producer in Europe. The company controlled or had minority interests in companies in France, Indonesia, Mexico, the Republic of Korea, Turkey, and the United States. Süd-Chemie's main business was in Gammelsdorf, Bavaria, where it produced acid-activated bentonite, calcium, and sodium products (Süd-Chemie AG, 2003§).

Cement.—The cement, gypsum, and lime sectors continued investments in their operations. The investments increased competitiveness by improving efficiency and increased environmental compatibility. The share of environmental measures in new investments was about 20% (Disa Group, 2003§).

HeidelbergCement AG announced that it would cease cement clinker production in the Mainz-Weisenau plant at the beginning of 2004. In the future, the plant will be run as a grinding plant. The kiln closure was necessary because of increased manufacturing costs, a capacity utilization that was too low, and the ongoing weak construction activity. HeidelbergCement operated 10 cement plants in Germany apart from the Mainz-Weisenau plant and was a market leader in the cement sector (HeidelbergCement AG, 2003§).

Clays.—Between 140 and 160 small- to medium-sized clay mines were in operation in 2003 in Germany. About one-half of the high-quality refractory and ceramic clays produced were from the Rhineland-Palatinate area. Production of clays in Bavaria was concentrated in the Oberfalz area.

Germany was one of the leading producers of kaolin in Western Europe. Most of the German kaolin was mined in Bavaria, and Amberger Kaolinwerke GmbH was the leading producer with mines in Hirschau, Bavaria, and Caminau, Saxony (Amberger Kaolinwerke GmbH, 2003§).

Graphite.—Graphit Kropfmühl AG was the only company that mined and processed natural graphite in Germany. The company operated a mine and plant at Kropfmühl, Passau. The amount of production had been decreasing in recent years owing to declining reserves. About one-half of the company's production went into the European refractory industry. The company concluded initialization of the HOGRA 5000 Project, which was a plant to purify 5,000 metric tons (t) of high-quality graphite grades (Graphit Kropfmühl AG, 2003§).

Gypsum.—Germany was a major European producer of crude gypsum. Most of the production was from the Lower Saxony area.

Potash.—K+S Kali GmbH operated six mines from which the raw materials potash and magnesium were extracted. With a production capacity of 11 Mt, Germany was the third leading potash producer in the world after Canada and Russia and met about 13% of worldwide potash needs (K+S Kali GmbH, 2003b§).

K+S reported good progress in developing a rich potash deposit located in the Hessian-Thuringian potash district. Sites at the Werra Mine would be connected by an underground conveyance system to mine the rich sylvinitic deposits at Unterbreizbach. Operational testing was scheduled to begin in October 2004 with full-scale production starting in early 2005. The "sylvinitic project," as the undertaking was referred to, was expected to yield a reduction in costs thus strengthening K+S's international competitiveness (K+S Kali GmbH, 2003a§).

Salt.—In June 2003, K+S (62%) and Solvay SA (38%) formed the joint venture European Salt Co. (ESCO). The company had production capacities of 5.8 Mt/yr of rock salt, 2.3 Mt/yr of vacuum salt, and 1.7 Mt/yr of brine. ESCO accounted for all the rock salt and salt brine produced in Germany (European Salt Co., 2003§).

Mineral Fuels and Other Energy Sources

Germany has relatively insignificant domestic energy sources and must rely on imports to meet its energy needs. In 2003,

the most important energy source in Germany's consumption of primary energy was petroleum with a 40% share of total consumption followed by natural gas (23%) and coal (22%). About 11% of electrical generation was supplied by 19 nuclear powerplants. About 30% of Germany's energy requirements were satisfied from domestic sources; the remaining 70% was imported. By 2020, the share of energy imports was expected to rise to 80%; oil was still expected to remain the primary energy source. The Government signed an agreement with the utility companies to phase out nuclear power generation by 2021 (U.S. Energy Information Administration, 2004§).

Coal.—Germany ranked fourth in coal consumption behind the United States, China, and India. Coal production was located primarily in the Ruhr and the Saar regions. The gradual phaseout of subsidies that have supported Western Europe's coal industry for so long was continued through 2005. The reduction in subsidies has resulted in considerable downsizing of the sector. For perspective, in 1999, Germany operated 26 hard coal mines and employed 66,070 miners; in 2003, however, only 10 mines were in operation, and 45,580 miners, employed (Alexander's Gas & Oil connections, 2003a§). Lignite coal production was mainly in the Rheinisch area to the west of Cologne and the Lusatian area near Dresden. Lignite mining was under less economic pressure than hard coal mining.

Germany was the world's leading producer of lignite. Lignite-fired powerplants became the second leading supplier of electricity and accounted for 45% of total primary energy production (U.S. Energy Information Administration, 2004§).

Renewable Energy.—The wind power sector has continued its strong expansion. Capacity grew by more than one-third in 2002 after more than 2,000 new turbines were installed in a country that is already a world leader in the field. Capacity rose by 37% to 12 gigawatts, and the number of turbines installed rose by 20% to 13,800. As a result, wind power accounted for 4.7% of total energy consumption in 2002 compared with 3% in 2001 and topping the contribution from hydroelectric generation for the first time (Alexander's Gas and Oil Connections, 2003b§).

The Government approved a project to build the second wind-propelled electricity power station in the German North Sea. The project will be located 35 kilometers (km) west of Sylt outside the 12-sea-mile zone and will have a generating capacity of 300 megawatts (MW). The Government was expecting to build wind plants that could generate 500 MW by 2006 (Alexander's Gas & Oil Connections, 2003c§).

Infrastructure

Germany had about 640,000 km of highways and roads that ranged from the high-speed autobahn system to undeveloped gravel-and-packed-dirt country roads. Of this, paved highways totaled more than 500,000 km, and unpaved roads, an estimated 135,000 km. The railroad system included 45,468 km of track, about 90% of which was Government owned. Of this total, 44,769 km was 1.435-m standard-gauge track and 699 km was 1.000-m gauge track. Germany had 600 airports. Pipelines included a 97,564-km line for natural gas, a 3,964-km line for

refined products, and a 3,644-km line for crude petroleum. Inland waterways and canals totaled 7,541 km and had 31 major ports; the Kiel Canal served as an important connection between the Baltic Sea and the North Sea, and the Rhine-Main-Danube Canal served as a connection between the North Sea and the Black Sea. The major maritime ports were, in descending order of tonnage, Hamburg, Rostock, Bremerhaven, Bremen, and Wilhelmshaven and accounted for about 70% of total merchandise traffic (U.S. Central Intelligence Agency, 2003§).

Outlook

With a flat growth rate and an unemployment rate of almost 10%, Germany's economy continues to show no appreciable growth from 2002. This is expected to continue in the short term. This could be offset if the economic growth in Germany's international trading partners increases. Industrial production is expected to remain around current levels. Export-led growth diminished as the global economy lost momentum (U.S. Commercial Service, Germany, 2004a§).

Restructuring industries, which include mineral-resource industries, to be more efficient may result in increased unemployment, which, in turn, could cut into the available resources of the Federal Government in the form of payments for unemployment compensation, retraining, and other social costs.

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Major Sources of Information

- Statistisches Bundesamt [Federal Statistics Office]
Gustav-Stresemann-Ring 11
65180 Wiesbaden, Germany
- Bundesanstalt für Geowissenschaften und Rohstoffe [Federal Institute for Geosciences and Natural Resources]
Stilleweg 2, Postfach 51 01 53
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- Bundesministerium für Forschung und Technologie [Federal Ministry for Research and Technology]
Heinemannstrasse 2
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- Bundesministerium für Wirtschaft, Abteilung III, Energiepolitik, Mineralische Rohstoffe [Federal Ministry for Economics, Section III, Energy Policy and Mineral Raw Materials]
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- Deutsches Institut für Wirtschaftsforschung [German Institute for Economic Research]
Königen-Luise Strasse 5
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TABLE 1
GERMANY: PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity	1999	2000	2001	2002	2003 ^c	
METALS						
Aluminum:						
Alumina, Al ₂ O ₃ equivalent:	583	652	600	720	830	
Metal:						
Primary	633,804	643,545	651,600	652,900 ³	660,782 ³	
Secondary	482,658	572,257	620,300	666,148 ³	680,385 ³	
Total	1,116,462	1,215,802	1,271,900	1,319,048 ³	1,341,167 ³	
Arsenic, white, As ₂ O ₃ content ^c	200	200	200	200	200	
Cadmium, metal, refinery including secondary	1,145	458 ^r	539 ^r	422 ³	640	
Cobalt, metal, including alloys ^c	500	500	500	500	500	
Copper, metal:						
Smelter:						
Primary	250,200 ^r	211,200 ^r	317,700 ^r	295,300 ³	288,800	
Secondary	355,600 ^r	360,400 ^r	245,200 ^r	269,900 ³	306,600	
Total	605,800	571,600	562,900	565,200 ³	595,400 ³	
Refined:						
Primary	242,000 ^r	245,000 ^r	352,400 ^r	330,900 ³	242,500	
Secondary	453,600 ^r	464,400 ^r	341,400 ^r	264,900 ³	355,000	
Total	695,600	709,400	693,800	595,800 ³	597,500 ³	
Iron and steel:						
Metal:						
Pig iron	thousand tons	27,932	30,846	29,184	29,427 ³	29,461 ³
Ferroalloys ^{c,4}		90	80	72	80	80
Of which ferrochromium		17	22	19	20	18
Steel, crude		42,056	46,376	44,803 ^r	45,015 ³	44,809 ³
Semimanufactures		35,879	38,974	37,011	38,136 ³	37,000
Lead:						
Smelter		160,600	170,000 ^e	155,900 ^r	141,200 ³	132,200
Refined:						
Primary		169,557	210,515	153,743	141,084 ³	133,417 ³
Secondary		204,000	204,000 ^e	219,640	238,700 ³	221,229 ³
Total		373,557	414,515	373,383	379,784 ³	354,646 ³
Platinum-group metals, metal, refined ^c		60,000	50,000	50,000	50,000	50,000
Selenium, metal		100,000	100,000 ^e	100,000 ^e	100,000	100,000
Silver, metal, refined ^c		500,000	400,000	300,000	200,000	200,000
Tin, metal, primary and secondary ^c		1,000	500	100	100	100
Uranium concentrate, U ₃ O ₈ content ^c		250	280 ³	260	285 ³	134 ³
Zinc, metal, including secondary		332,852	327,500	358,300	378,560 ³	388,112 ³
INDUSTRIAL MINERALS						
Abrasives:^e						
Natural, pumice		250,000	200,000	124,000 ^{r,3}	43,000 ³	45,000
Artificial, corundum		50,000	60,000	60,000	60,000	50,000
Barite, marketable (contained BaSO ₄)		118,500	111,800	108,100 ^r	101,000	109,500 ³
Boron materials, processed borax ^e		1,000	1,000	1,000	1,000	1,000
Bromine ^e		500	500	500	500	500
Cement:						
Clinker, intended for market ^c		1,000	1,000	1,000	1,000	1,000
Hydraulic		36,219	35,207	30,989	23,311 ³	21,513 ³
Chalk, crude, including ground		400 ^e	1,061 ^r	1,045 ^r	1,022 ³	1,000

See footnotes at end of table.

TABLE 1--Continued
GERMANY: PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity	1999	2000	2001	2002	2003 ^c
INDUSTRIAL MINERALS--Continued					
Clays:					
Bentonite	477	465	448 ^r	495 ³	480
thousand tons					
Ceramic clay	3,543	4,100	5,500 ^r	4,700	4,300
do.					
Fire clay ^c	1,000	1,000	1,000	1,000	1,000
do.					
Fuller's earth ^c	500	500	500	500	500
do.					
Kaolin, marketable	3,543	3,655	3,779 ^r	3,682 ³	3,503 ³
do.					
Other, including brick clay ^c	20,000	21,000	20,000	20,000	20,000
do.					
Diatomite	53	54	50	50	50
do.					
Feldspar ^c	500,000	544,000	500,000	500,000	500,000
Fluorspar:					
Acid-grade ^c	26,800	29,600	29,400 ^r	33,400	32,300
do.					
Metallurgical-grade ^c	1,500	1,500	1,000 ^r	1,000	1,000
do.					
Total	28,300	31,100	30,400 ^r	34,400	33,300
Graphite, marketable	300	300 ^e	300 ^e	300	300
Gypsum and anhydrite, marketable ^c	4,600	2,300 ^r	2,000 ^r	1,761 ³	1,748 ³
thousand tons					
Lime, quicklime, dead-burned dolomite	6,440	6,850	6,630 ^r	6,620	6,630 ³
Magnesium salts, byproduct of potash mining ^c	1,200	1,200	1,200	1,200	1,200
Nitrogen, N content of ammonia	2,406	2,473	2,522	2,623 ³	2,803 ³
Phosphate materials:^c					
Phosphatic fertilizers, P ₂ O ₅ content	700	700	700	700	800
Thomas slag:					
Gross weight	150	200	200 ^e	200	150
thousand tons					
P ₂ O ₅ content	19,000	20,000	20,000 ^e	20,000	18,000
Pigments, mineral, natural ^c	400	400	400	419 ³	429 ³
thousand tons					
Potash, K ₂ O content	3,543	3,407	3,549 ^r	3,472 ³	3,563 ³
do.					
Pumice, marketable ^c	500	500	500	500	500
do.					
Salt, marketable:					
Evaporated	897	932	846 ^r	858 ³	727 ³
do.					
Rock and other	6,921	4,904	5,052 ^r	14,774 ³	15,573 ³
Sodium compounds, n.e.s.:^c					
Soda ash, manufactured	1,400	1,500	1,500	1,500	1,500
thousand tons					
Sulfate, manufactured	100	100	100	100	100
do.					
Stone, sand and gravel:					
Stone:					
Dimension, crude and partially worked ^c	200 ^r	200 ^r	200 ^r	237 ³	167 ³
thousand tons					
Dolomite and limestone, industrial	81	75 ^r	69 ^r	76 ³	106 ³
thousand tons					
Quartz and quartzite ^c	25,000	25,000	25,000	25,000	25,000
do.					
Slate ^c	70,000	70,000	70,000	70,000	70,000
do.					
Sand and gravel:					
Building sand and gravel	382,700	343,200	324,200 ^r	303,500 ³	296,900 ³
thousand tons					
Gravel, including terrazzo splits ^c	200,000	200,000	200,000	200,000	200,000
do.					
Sand:					
Foundry	3,500	3,500 ^e	3,500 ^e	2,500	2,500
do.					
Industrial, glass ^c	10,000	8,500	8,500	7,500	7,500
do.					
Sulfur, byproduct:					
Metallurgy ^c	504	618	684	754	697
do.					
Natural gas and petroleum	1,824	1,735 ^r	1,749 ^r	1,745 ³	1,661
do.					
Other ^c	60	100	100	100	100
do.					
Total	2,388	2,453 ^r	2,533 ^r	2,599 ³	2,458
Talc and steatite ^c	9,000	8,000	7,000 ^r	7,000	6,000
do.					

See footnotes at end of table.

TABLE 1--Continued
GERMANY: PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity	1999	2000	2001	2002	2003 ^c	
MINERAL FUELS AND RELATED MATERIALS						
Asphalt and bitumen, natural ^c	9,000	10,000	10,000	10,000	10,000	
Coal:						
Anthracite and bituminous, marketable	43,849	33,590 ^r	27,361 ^r	26,363 ³	25,873 ³	
Lignite	162,242	168,051 ^r	175,364 ^r	181,778 ³	179,085 ³	
Coke:						
Of anthracite and bituminous coal	thousand tons	8,568	9,115	7,289	7,226 ³	7,827 ³
Of lignite ^c	do.	175	175	173 ^r	154 ³	171 ³
Fuel briquets:						
Of anthracite and bituminous coal	do.	174	146 ^r	140 ^{r,e}	124 ³	114 ³
Of lignite, including dust and dried	do.	2,072	1,819 ^r	1,740 ^r	1,365 ³	1,475 ³
Gas: ^c						
Manufactured:						
Blast furnace	million cubic meters	4,000	4,000	4,000	3,000	3,000
Coke oven	do.	2,000	2,000	2,000	1,000	1,000
Total	do.	6,000	6,000	6,000	4,000	4,000
Natural:						
Gross	do.	23,000	22,000	22,000	22,000	24,000
Marketed	do.	21,200 ³	21,720 ^{r,3}	21,698 ^{r,3}	21,529 ³	22,091 ³
Peat:						
Agricultural use	thousand cubic meters	9,473	9,648	9,722 ^r	9,788 ³	8,497 ³
Fuel use ^c	do.	175,000	160,000	-- ^r	-- ³	--
Petroleum:						
Crude	thousand 42-gallon barrels	19,728	22,658	23,603	27,758 ³	28,568 ³
Refinery products:						
Liquefied petroleum gas	do.	31,888	32,688	35,032 ^r	34,289 ³	35,450 ³
Gasoline, including aviation	do.	228,038	229,101	293,378 ^r	308,252 ³	312,764 ³
Naphtha	do.	82,648	82,085	82,548 ^r	83,229 ³	83,773 ³
Mineral jelly and wax	do.	1,472	1,575 ^r	1,554 ^r	1,645 ³	1,699 ³
Kerosene and jet fuel	do.	233,046 ^r	234,461 ^r	227,153 ^r	246,822 ³	269,312 ³
Distillate fuel oil	do.	343,167	345,637	349,853 ^r	351,114 ³	350,411 ³
Refinery gas	do.	2,706	3,269	3,276 ^r	3,505 ³	4,196 ³
Lubricants	do.	11,298	10,556	10,675 ^r	10,737 ³	10,042 ³
Nonlubricating oils	do.	8,197	8,100	7,197 ^r	7,348 ³	7,208 ³
Residual fuel oil	do.	17,399 ^r	15,756 ^r	16,257 ^r	12,847 ³	8,527 ³
Bitumen and other residues	do.	22,228	22,592	19,450 ^r	21,252 ³	21,337 ³
Bituminous mixtures	do.	1,199	1,210 ^r	1,100	1,209 ³	1,198 ³
Petroleum coke	do.	10,428	5,819	9,328 ^r	9,031 ³	9,984 ³
Unspecified	do.	16,254	11,977	9,919 ^r	10,920 ³	8,932 ³
Total	do.	1,009,968 ^r	1,004,826 ^r	1,066,720 ^r	1,102,200 ³	1,124,833 ³

^cEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. -- Zero.

¹Table includes data available through October 2004.

²Data are from a combined Germany.

³Reported figure.

⁴Includes spiegeleisen, unspecified crude iron, and blast furnace ferromanganese with 2% or more carbon.

TABLE 2
GERMANY: STRUCTURE OF THE MINERAL INDUSTRY IN 2003

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina		VAW Aluminium AG (E.ON AG)	Plant at Schwandorf (special aluminas)	430
Do.		Aluminium Oxid Stade GmbH (VAW, 50%, DADCO Alumina and Chemicals Ltd., 50%)	Plant at Stade	750
Do.		Martinswerke GmbH (Alusuisse, 100%)	Plant at Bergheim (fused alumina)	350
Aluminum		VAW Aluminium AG (E.ON AG)	Smelters at Innwerke at Töging, Elbwerke at Stade, Rheinwerke at Neuss, Lippenwerke at Lünen (secondary)	300
Do.		Aluminium Essen GmbH	Smelter at Essen-Borbeck	95
Do.		Hamburger Aluminium-Werke GmbH (VAW Aluminium AG, 33%)	Smelter at Hamburg	120
Arsenic, metal	tons	Metaleurop Handel GmbH	Plant at Langelsheim	5
Cement		38 companies, the major ones are:	64 mills (grinding) including:	59,000
Do.		HeidelbergerCement AG	Plants at Blaubeuren-Schelklingen, Leimen, Hassmersheim, Burglengenfeld, Kieffersfelden, and others	(9,200)
Do.		Dyckerhoff AG	Plants at Amoneburg, Golheim, Neuwied, Neubeckum, and others	(7,250)
Do.		E. Schwenk, Zementwerke KG	Plants at Allmendingen, Karlstadt, and Mergelstetten	(6,000)
Do.		Anneliese Zementwerke AG	Plants at Ennigerloh-Nord, Ennigerloh-Sud, Geske, and Paderborn	(3,500)
Do.		Zementwerke Deunan GmbH	Plant at Deuna	-3,000
Chalk		Kreidewerke Rugen GmbH	Quarries on Rugen Island	500
Coal, anthracite and bituminous		Four companies:	About 27 mines, including:	72,500
Do.		Ruhrkohle AG	14 mines in Ruhr region	(40,000)
Do.		Saarbergwerke AG	5 mines in Saar basin	(14,000)
Do.		Preussag Anthrazit GmbH	Mine at Ibbenbüren	(2,500)
Copper		Norddeutsche Affinerie AG (Dresdner Bank AG, 20%; Degussa AG, 10%)	Smelter at Hamburg	500
Do.		do.	Refinery at Hamburg	350
Do.		Hüttenwerke Kayser AG	Refinery at Lünen	120
Graphite	tons	Graphit Kropfmühl AG	Mine and plant at Kropfmühl, Passau Plant at Wedel, Holstein	20,000 8,000
Gypsum		Gipswerke Dr. Karl Würth GmbH	Mine and plant at Stadtoldendorf, Lower Saxony	150
Do.		Gyproc GmbH Banstoff Production & Co. KG	Mines and plant in Lower Saxony	110
Kaolin		Amberger Kaolinwerke GmbH	Mines at Hirschau and Caminau	300
Do.		Kemmlitzer Kaolinwerke GmbH	Mine at Gröppendorf	100
Limestone		Harz Kalk GmbH	Quarries at Bad Kösen, Rubelaand, and Kaltes Tal	6,000
Lead		Metaleurop Weser Blei GmbH	Smelter and refinery at Nordenham	120
Do.		MIM Huttenwerke Duisberg GmbH (MIM Holdings Ltd., 100%)	QSL smelter at Stolberg	75
Do.		do.	Refinery at Duisberg	120
Do.		Norddeutsche Affinerie AG	Refinery at Hamburg	50
Lignite		Rheinische Braunkohlenwerke AG (RWE Rheinbraun)	Surface mines in Rhenish mining area: Garzweiler, Bergheim, Inden, and Hambach	105,000
Do.		Lausitzer Braunkohle AG (LAUBAG)	Surface mines in Lausatian mining area: Jänschwalde/Cottbus-Nord, Welzow-Süd, and Nochten/Reichswalde	50,000
Natural gas	million cubic meters	Brigitta Erdgas und Erdöl GmbH and Elwerath Erdgas-Erdöl GmbH	Plants at Clenze and Grossenkmeten	9,500
Do.	do.	Mobil Erdgas-Erdöl GmbH	Plants at Scholen	4,000
Do.	do.	Other companies	Plants at Duste, Rutenbrock, and others	2,000

TABLE 2--Continued
GERMANY: STRUCTURE OF THE MINERAL INDUSTRY IN 2003

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum:				
Crude	thousand 42-gallon barrels	The largest companies are:	6 areas with about 85 oilfields, including:	80,000
Do.	do.	Elwerath Erdgas-Erdöl GmbH	West of Ems River	(30,000)
Do.	do.	Wintershall AG	Weser-Ems Rivers	(21,000)
Do.	do.	Deutsche Texaco AG	Elbe-Weser Rivers	(20,000)
Refined	do.	About 25 companies, of which the largest are:	20 refineries, including:	2,062,000
Do.	do.	Deutsche Shell AG	Refineries at Godorf, Hamburg, and Grasbrook	(256,000)
Do.	do.	Esso AG	Refineries at Karlsruhe and Ingolstadt	(245,000)
Do.	do.	Ruhr Oel AG	Refinery at Gelsenkirchen	(215,500)
Do.	do.	Erdoel Raffinerie Neustadt GmbH	Refinery at Neustadt-Donau	(145,000)
Potash, K ₂ O content		K+S Kali GmbH	Mines at Bergmannsseggen-Hugo, Niedersachsen-Riedel, Salzdettfurth, Sigmundshall, Hattorf, Neuhof-Ellers, Sondershausen, and Wintershall	6,000
Salt (rock)		do.	Mines at Bad Friedrichshall-Kochendorf, Braunschweig-Lüneburg, Heilbronn, Riedel, Stetten, and Wesel (Borth)	15,000
Steel		Major companies, including:	About 25 plants, including:	
Do.		ThyssenKrupp Stahl AG	Plants mostly in the Westphalia Region	21,000
Do.		Salzgitter AG	Plants at Peine and Salzgitter	9,000
Do.		Klöckner-Werke AG	Plants at Bremen and Osnabruck	4,200
Do.		Saarstahl AG (Montan-Stiftung Saar, 74.9%)	Plant at Völklingen	2,500
Zinc		Ruhr-Zink GmbH (Metallgesellschaft AG, 100%)	Refinery at Datteln	200
Do.		MIM Huttenwerke Duisberg GmbH (MIM Holdings Ltd., 100%)	Imperial smelter and fire refinery at Duisburg	100
Do.		Xstrata plc	Refinery at Nordenham	130

TABLE 3
GERMANY: SELECTED INDICES OF PRODUCTION

(1995 = 100)

Sector	1998	1999	2000	2001	2002	2003
General	108.7	110.4	117.2	117.8	116.2	114.0
Mining	85.0	84.1	78.7	73.3	72.4	72.6
Manufacturing	109.7	111.5	119.2	120.0	118.2	115.7
Electricity and gas	104.8	105.2	106.4	106.0	106.4	108.7

Source: United Nations, 2004, Monthly Bulletin of Statistics, no. 999, v. LVIII, no. 9, September, p. 16.

TABLE 4
UNITED STATES TRADE WITH GERMANY

(Million dollars)

Month	2002		2003	
	Exports	Imports	Exports	Imports
January	2,022	4,195	2,160	4,877
February	2,183	4,636	2,426	4,860
March	2,530	5,255	2,803	6,271
April	2,133	5,185	2,477	5,943
May	2,084	4,900	2,490	5,883
June	2,197	4,620	2,262	5,736
July	1,990	5,796	2,210	5,785
August	2,147	5,108	2,315	5,135
September	2,328	4,914	2,191	5,016
October	2,402	5,993	2,659	6,060
November	2,419	5,750	2,470	6,046
December	2,194	6,156	2,370	6,501
Total	26,629	62,508	28,833	68,113

Source: U.S. Census Bureau, Foreign Trade Division, April 2004.

TABLE 5
GERMANY: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity	Total	Destinations		
		United States	Other (principal)	
METALS				
Alkali and alkaline-earth metals:				
Alkali metals	value, thousands	\$12,458	\$716	Switzerland \$6,395; France \$822; unspecified Asia \$3,306.
Alkaline-earth metals		548,270	--	Spain 221,101; United Kingdom 101,601; Netherlands 79,699.
Aluminum:				
Ore and concentrate		26,666,205	--	France 9,629,000; Netherlands 1,819,187; Italy 1,789,687.
Oxides and hydroxides	metric tons	780,300	48,669	Italy 133,688; Netherlands 121,282; United Kingdom 108,686.
Ash and residue containing aluminum		23,307,446	--	Austria 7,508,699; Norway 7,356,500; Spain 5,146,800.
Metal including alloys:				
Scrap	metric tons	556,405	72	Italy 123,872; Austria 101,597; Netherlands 82,001.
Unwrought	do.	389,343	396	Austria 114,476; France 58,781; Italy 41,182.
Semimanufactures:				
Powders and flakes		14,552,711	550,288	Austria 1,957,074; Italy 1,675,875; Sierra Leone 1,164,625.
Rods, bars, profiles	metric tons	185,389	3,486	Austria 25,295; France 21,866; Netherlands 13,277.
Wire		10,028,730	13,687	Austria 2,421,163; United Kingdom 1,103,101; Italy 824,421.
Plates, sheets, strips	metric tons	947,103	61,487	United Kingdom 126,356; Italy 121,371; France 82,871.
Foil	do.	294,000	26,935	Switzerland 38,758; France 35,151; Netherlands 26,935.
Tubes and pipes		24,480,558	2,285,773	Czech Republic 3,897,124; France 2,462,250; Spain 2,081,187.
Tube or pipe fittings		20,089	--	Macedonia 13,750; Cyprus 5,500; Albania 742.
Antimony:				
Ore and concentrate	value	\$8,000	--	All to Switzerland.
Oxides		682,809	15,812	Switzerland 195,101; Austria 125,398; Poland 53,101.
Metal, including alloys, all forms		29,917	500	Austria 12,000; Belgium 5,065; Sweden 3,375.
Arsenic, metal, including alloys, all forms		8,515	2,812	Japan 2,000; China 1,687; United Kingdom 1,000.
Beryllium, metal, including alloys, all forms	value	\$248,000	\$169,000	Hungary \$34,000; Switzerland \$31,000; United Kingdom \$14,000.
Bismuth, metal, including alloys, all forms		154,594	22,101	Czech Republic 46,601; France 21,101; Netherlands 12,687.
Cadmium, metal, including alloys, all forms	value	\$29,000	--	Switzerland \$11,000; United Kingdom \$7,000; South Africa \$3,000.
Chromium:				
Ore and concentrate		3,666,520	19,500	Austria 714,875; France 697,812; Czech Republic 452,125.
Metal, including alloys, all forms		2,095,906	46,913	Netherlands 1,001,687; France 149,000; Belgium 109,897.
Cobalt:				
Oxides and hydroxides		151,464	3,000	France 66,199; Spain 17,601; Czech Republic 13,187.
Metal, including alloys, all forms		1,120,212	125,472	United Kingdom 189,198; France 155,999; Sweden 143,198.
Columbium and tantalum, metal, including alloys, all forms, tantalum		324,172	3,687	Czech Republic 12,375; Portugal 2,500; unspecified 303,025.
Copper:				
Ore and concentrate		48,673,545	--	Sweden 44,745,398; Canada 3,549,375; Slovakia 183,601.
Matte and speiss, including cement copper		899,187	--	Canada 896,500; Sudan 2,687.
Oxides and hydroxides		3,955,804	4,312	United Kingdom 1,032,000; China 463,875; Netherlands 436,687.
Sulfate		2,159,877	20,398	France 532,312; United Kingdom 412,187; Denmark 279,187.
Ash and residue containing copper		11,772,758	--	Belgium 6,703,898; Slovakia 2,299,687; Austria 1,565,187.
Metal, including alloys:				
Scrap	metric tons	363,762	5,981	China 100,749; Netherlands 73,736; Belgium 38,163.
Unwrought	do.	140,580	8,741	France 40,501; Italy 21,690; Austria 10,954.
Semimanufactures:				
Powders and flakes		8,441,750	588,124	Italy 1,570,726; France 1,120,699; Austria 522,886.
Rods, bars, profiles	metric tons	117,199	4,526	France 17,336; Italy 15,795; United Kingdom 11,255.
Wire	do.	288,289	3,576	Italy 46,168; Austria 36,049; Netherlands 35,343.
Plates, sheets, strips	do.	287,465	28,491	Italy 37,870; United Kingdom 36,701; France 32,403.
Foil		20,525,041	363,674	Austria 2,376,824; Singapore 1,591,874; Italy 1,525,139.
Tubes and pipes	metric tons	145,549	9,539	Italy 23,000; France 18,916; United Kingdom 16,003.
Tube or pipe fittings		22,674,404	992,437	Poland 4,470,625; Italy 2,664,125; Austria 1,814,999.

See footnotes at end of table.

TABLE 5--Continued
GERMANY: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity	Total	Destinations	
		United States	Other (principal)
METALS--Continued			
Germanium, metal, including alloys, all forms	1,180	500	Israel 500; United Kingdom 97; France 37.
Gold:			
Waste and sweepings	709,064	1,100	Belgium 622,942; Italy 31,200; Switzerland 29,665.
Metal, including alloys, unwrought and partly wrought	40,056	367	United Kingdom 7,102; France 3,303; unspecified 10,400.
Iron and steel:			
Iron and concentrate:			
Including roasted pyrite	15,866,645	--	Switzerland 8,340,300; Poland 2,691,312; Slovakia 2,130,125.
Excluding roasted pyrite	9,376,045	--	Switzerland 3,032,500; Poland 2,691,312; Slovakia 2,130,125.
Pyrite, roasted	6,490,600	--	Switzerland 5,307,800; Slovenia 240,000; unspecified 885,500.
Metal:			
Scrap metric tons	6,718,904	118	Luxembourg 1,485,092; Italy 1,179,040; France 1,101,205.
Pig iron, cast iron, related materials do.	176,642	768	France 80,612; Netherlands 11,296; unspecified 25,344.
Ferroalloys:			
Ferchromium	30,640,266	597	Belgium 5,622,125; Austria 4,379,500; France 4,152,000.
Ferromanganese	8,937,167	--	Austria 3,431,062; France 1,326,687; Switzerland 1,167,562.
Ferromolybdenum	2,054,001	--	Italy 389,375; France 362,375; Austria 319,687.
Ferronicel	94,210	--	France 43,500; India 41,898; Switzerland 6,812.
Ferrosilicochromium	1,000	--	All to India.
Ferrosilicomanganese metric tons	10,306	853	Luxembourg 2,837; France 1,959; Czech Republic 1,248.
Ferrosilicon	60,017,647	576,812	France 19,981,773; Belgium 11,469,101; Austria 6,033,101.
Ferrotungsten and ferrosilicotungsten	267,545	20,000	Austria 126,699; Italy 33,500; Ukraine 20,000.
Ferrotitanium and ferrosilicotitanium	2,477,815	39,800	Sweden 713,000; France 556,312; Italy 309,875.
Ferrovandium	652,628	--	Spain 132,800; Italy 121,601; Sweden 62,601.
Ferriobium	712,870	21,601	Slovakia 206,699; Italy 142,199; United Kingdom 64,199.
Silicon metal	16,142,577	348,687	Italy 5,039,000; Austria 4,546,398; Belgium 1,711,375.
Steel, primary forms metric tons	2,563,185	288,167	France 759,933; Belgium 320,212; Singapore 193,104.
Semimanufactures:			
Flat-rolled products:			
Of iron or nonalloy steel:			
Not clad, plated, coated do.	5,764,212	117,514	Italy 881,598; France 706,913; Netherlands 612,788.
Clad, plated, coated do.	4,195,594	205,383	France 582,281; Spain 379,653; United Kingdom 346,627.
Of alloy steel do.	2,767,780	173,914	Italy 309,133; France 255,299; United Kingdom 236,292.
Bars, rods, angles, shapes, sections do.	5,967,216	192,168	Netherlands 803,993; France 635,021; Italy 603,816.
Rails and accessories do.	154,027	543	Netherlands 31,990; United Kingdom 25,141; Switzerland 12,109.
Wire do.	483,957	9,890	France 115,030; Netherlands 54,025; United Kingdom 44,533.
Tubes, pipes, fittings do.	2,862,572	155,929	France 276,807; Netherlands 254,909; Italy 174,456.
Lead:			
Ore and concentrate	31,512,500	--	China 31,225,500; Czech Republic 287,000.
Oxides	16,999,154	--	France 3,334,874; Czech Republic 3,013,335; Poland 1,835,807.
Metal including alloys:			
Scrap	15,481,169	--	Netherlands 7,663,300; Belgium 3,749,625; France 2,506,812.
Unwrought metric tons	129,550	1	Czech Republic 37,210; France 33,142; United Kingdom 24,588.
Semimanufactures	29,366,008	836,972	France 8,498,264; Belgium 4,082,142; Netherlands 3,892,564.
Lithium, oxides and hydroxides	649,633	796	France 171,601; United Kingdom 123,898; Spain 113,898.
Magnesium, metal, including alloys:			
Scrap metric tons	13,506	--	Czech Republic 6,650; United Kingdom 3,271; Austria 1,811.
Unwrought	591,295	--	Austria 225,300; France 87,101; Spain 67,398.
Semimanufactures	4,274,632	23,500	France 818,312; Belgium 759,101; Austria 653,476.

See footnotes at end of table.

TABLE 5--Continued
GERMANY: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity	Total	Destinations		
		United States	Other (principal)	
METALS--Continued				
Manganese:				
Ore and concentrate	1,776,420	--	Belgium 1,551,000; Iran 65,000; France 46,699.	
Oxides	2,104,581	57,601	Netherlands 528,585; Algeria 351,625; Italy 339,187.	
Metal, including alloys, all forms	10,703,245	242,300	Austria 2,236,312; Luxembourg 837,500; France 677,375.	
Mercury	50,762	15,875	Colombia 7,687; Switzerland 6,812; Argentina 3,125.	
Molybdenum:				
Ore and concentrate:				
Roasted	296	--	All to Spain.	
Unroasted	774,578	--	China 718,187; Brazil 23,199; Sweden 19,800.	
Metal, including alloys, semimanufactures	1,468,197	12,952	Czech Republic 28,772; Poland 15,175; unspecified 1,306,672.	
Nickel:				
Ore and concentrate	10,884,299	--	Canada 10,324,000; Finland 360,625; Netherlands 139,601.	
Matte and speiss	1,159	--	Indonesia 699; Poland 261; Switzerland 199.	
Oxides and hydroxides	246,132	6,312	Japan 175,398; China 19,699; Ukraine 9,875.	
Metal including alloys:				
Scrap	8,091,347	1,126,000	Netherlands 3,159,375; Sweden 1,950,812; Italy 388,812.	
Unwrought	11,248,178	95,499	Austria 5,969,913; Sweden 979,523; unspecified Asia 1,131,124.	
Semimanufactures	22,339,901	4,886,703	France 4,283,993; United Kingdom 2,308,058; Austria 2,262,634.	
Platinum-group metals:				
Waste and sweepings	806,428	524,900	Belgium 122,600; United Kingdom 94,900; Austria 25,400.	
Metal, including alloys, unwrought and partly wrought:				
Palladium	23,992	6,300	Switzerland 6,263; Brazil 2,700; United Kingdom 1,745.	
Platinum	29,064	7,100	Switzerland 6,514; United Kingdom 2,231; Japan 2,100.	
Rhodium	value, thousands	\$5,272	Japan \$10,274; Brazil \$5,455; Hong Kong, China \$4,228.	
Iridium, osmium, ruthenium	do.	\$1,222	Japan \$2,447; Hong Kong, China \$1,817; Italy \$1,093.	
Unspecified	57,801	14,032	Switzerland 13,057; Japan 4,535; United Kingdom 4,170.	
Rare-earth metals, including alloys, all forms	value	\$46,000	Turkey \$19,000; Austria \$15,000; United Kingdom \$15,000.	
Selenium, elemental	898,577	1,125	France 616,812; Philippines 48,699; Canada 33,500.	
Silver:				
Ore and concentrate	value	\$1,000	-- All to Australia.	
Metal, including alloys, unwrought and partly wrought	3,035,315	76,800	Belgium 424,200; Spain 199,256; unspecified 995,500.	
Tin, metal, including alloys:				
Scrap	848,788	--	France 555,625; Belgium 157,000; Netherlands 100,601.	
Unwrought	1,390,952	2,398	Austria 293,898; Belgium 160,901; Italy 128,698.	
Titanium:				
Oxides	63,503,072	11,581,000	China 9,040,101; Belgium 4,332,500; unspecified Asia 8,450,699.	
Metal, including alloys:				
Unwrought, waste or scrap, powders	metric tons	1,888	241	Canada 307; Netherlands 254; United Arab Emirates 224.
Semimanufactures	do.	4,819	902	United Kingdom 2,438; Spain 279; unspecified Asia 184.
Tungsten:				
Ore and concentrate	10,327	--	Austria 9,812; Poland 515.	
Metal, including alloys:				
Powders (wolframite)	537,687	--	Unspecified 537,687.	
Unwrought, bars/rods simply sintered, scrap	25,374	11,375	Brazil 5,500; Switzerland 2,875; Czech Republic 1,125.	
Semimanufactures	1,656,716	167,971	Austria 562,812; United Kingdom 358,386; Finland 113,804.	
All forms	2,219,777	179,346	Austria 563,108; United Kingdom 358,483; unspecified 537,687.	

See footnotes at end of table.

TABLE 5--Continued
GERMANY: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity	Total	Destinations	
		United States	Other (principal)
METALS--Continued			
Vanadium:			
Oxides and hydroxides	102,199	--	Unspecified 102,199.
Metal, including alloys, all forms	483,676	165,898	United Kingdom 179,101; Japan 57,898; France 49,898.
Zinc:			
Ore and concentrate	4,740,749	--	Sweden 3,619,187; Belgium 725,187; United Kingdom 376,375.
Oxides	70,633,812	--	Unspecified 70,633,812.
Blue powder	2,013,858	--	Switzerland 434,875; Austria 347,687; Denmark 284,000.
Ash and residue containing zinc	13,547,325	--	Belgium 6,315,875; Spain 1,932,000; Netherlands 1,780,125.
Metal, including alloys:			
Scrap	47,414,032	--	Belgium 17,015,300; China 11,075,699; India 6,472,699.
Unwrought metric tons	143,696	8	France 43,757; Austria 35,333; United Kingdom 15,375.
Semimanufactures	61,126,094	8,006,668	Denmark 534,300; China 475,375; unspecified 56,065,699.
Zirconium:			
Ore and concentrate	2,110,942	26,000	France 478,187; Austria 411,500; Switzerland 200,898.
Metal, including alloys:			
Unwrought, waste or scrap, powders	41,471	22,898	Japan 4,625; Chile 1,812; France 1,687.
Semimanufactures	259,518	115,800	France 72,401; Belgium 30,585; Russia 18,398.
All forms	300,989	138,698	France 74,088; Belgium 30,602; Russia 18,415.
Other, ashes and residues	51,180,877	124,699	Belgium 13,652,760; Austria 9,858,987; Norway 7,356,500.
INDUSTRIAL MINERALS			
Abrasives, n.e.s.:			
Natural: Corundum, emery, pumice, etc. do.			
	130,271	8	Netherlands 68,032; Luxembourg 43,974; Switzerland 6,570.
Artificial:			
Corundum	40,650,271	6,796,898	France 5,255,000; United Kingdom 5,196,398; Austria 3,896,187.
Silicon carbide	24,416,398	--	Unspecified 24,416,398.
Dust and powder of precious and semiprecious stones, excluding/including diamond value, millions	\$11	(1)	Austria \$6; United Kingdom \$1; Serbia and Montenegro. ²
Grinding and polishing wheels and stones	35,833,332	2,446,101	France 3,900,319; Switzerland 2,426,760; Italy 2,289,584.
Barite and witherite	32,545,625	--	Switzerland 7,125; unspecified 32,538,500.
Boron materials:			
Crude natural borates	132,796	--	Oman 60,000; Serbia and Montenegro 50,199; Switzerland 8,000.
Oxides and acids	1,379,347	15,500	Czech Republic 215,398; Poland 155,000; Hungary 130,300.
Cement metric tons	4,670,002	196	Netherlands 1,798,777; Austria 566,490; Belgium 511,585.
Chalk	92,878,075	19,199	Belgium 31,055,601; Sweden 19,001,000; Netherlands 16,474,199.
Clays, crude:			
Bentonite	57,237,482	10,625	Switzerland 15,084,699; France 8,774,800; Spain 7,076,500.
Chamotte earth and dinas earth	77,080,276	--	Italy 33,817,101; France 9,594,800; Netherlands 6,120,101.
Fire clay	36,394,129	18,000	Netherlands 19,795,800; Italy 5,323,300; Austria 4,885,699.
Fuller's earth	298,919	174,601	Japan 72,000; Austria 29,601; Denmark 11,625.
Kaolin metric tons	359,926	219	Italy 129,090; Austria 99,209; Netherlands 23,061.
Diamond, natural:			
Gem, not set or strung value, thousands	\$71,656	\$12,746	Israel \$12,561; Switzerland \$9,812; Thailand \$9,339.
Industrial stones value	\$2,049,000	--	Switzerland \$1,470,000; Thailand \$320,000; Poland \$48,000.
Dust and powder value, thousands	\$11,474	\$302	Austria \$5,984; United Kingdom \$1,131; Serbia and Montenegro \$325.
Diatomite and other infusorial earth	20,036,369	4,125	Switzerland 14,606,601; Austria 2,225,875; Russia 426,125.
Feldspar metric tons	102,472	55	France 53,451; Italy 19,058; Austria 6,395.

See footnotes at end of table.

TABLE 5--Continued
GERMANY: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity	Total	Destinations	
		United States	Other (principal)
INDUSTRIAL MINERALS--Continued			
Fertilizer materials:			
Crude, n.e.s.	22,307,905	355,000	Switzerland 6,780,199; Netherlands 3,646,125; Austria 3,059,625.
Manufactured:			
Ammonia	metric tons 392,646	68,699	France 169,464,886; Norway 82,334,687; Czech Republic 38,763.
Nitrogenous	thousand metric tons 1,594	64	United Kingdom 269; Netherlands 127; unspecified 420.
Phosphatic	metric tons 71,367	--	Netherlands 34,169; France 18,835; United Kingdom 5,181.
Potassic	do. 5,433,963	93,932	Brazil 1,150,779; France 1,123,806; Belgium 715,980.
Unspecified and mixed	do. 7,438,785	158,125	France 1,288,631; Brazil 1,150,996; unspecified 1,222,288.
Fluorspar	17,104,587	17,000	Poland 2,778,875; Hungary 2,687,625; Sweden 2,179,562.
Graphite, natural	11,746,253	139,601	France 3,338,562; Czech Republic 1,200,800; Austria 997,987.
Gypsum and plaster	metric tons 1,213,135	1,611	Belgium 231,120; Netherlands 220,228; Poland 114,751.
Iodine	587,305	--	Spain 498,625; India 31,601; Ukraine 23,699.
Kyanite and related materials:			
Andalusite, kyanite, sillimanite	2,469,882	--	Hungary 677,000; Poland 334,125; Belgium 276,687.
Mullite	9,943,570	1,099,812	United Kingdom 2,379,125; Hungary 1,406,000; Italy 1,363,687.
Unspecified	12,413,452	1,099,812	United Kingdom 2,379,125; Hungary 2,083,000; Italy 1,482,085.
Lime	metric tons 900,264	71	Netherlands 633,351; France 97,800; Belgium 70,269.
Magnesium compounds:			
Magnesite, crude	do. 878	--	Czech Republic 388; Poland 293; United Kingdom 70.
Oxides and hydroxides	45,840,033	165,898	France 16,001,199; Austria 7,072,398; Italy 5,302,898.
Other	metric tons 658,287	11,014	France 184,534; Malaysia 108,624; Belgium 84,610.
Mica:			
Crude, including splittings and waste	2,464,252	24,500	Italy 643,875; Brazil 536,500; Austria 361,375.
Worked, including agglomerated splittings	654,173	7,187	France 154,824; Italy 113,125; Czech Republic 112,601.
Nitrates, crude	19,137,101	--	Unspecified 19,137,101.
Phosphates, crude	77,328	--	Poland 39,672; Uzbekistan 21,199; Russia 11,625.
Phosphorus, elemental	583,634	36,898	Poland 96,000; Japan 54,898; Indonesia 49,601.
Pigments, mineral, iron oxides and hydroxides, processed	metric tons 163,335	--	France 10; Italy 1; unspecified 163,324.
Precious and semiprecious stones other than diamond:			
Natural	value, thousands \$129,393	\$52,729	Switzerland \$17,806; Hong Kong, China \$10,893; Japan \$8,478.
Synthetic	do. \$19,964	\$12,415	Hong Kong, China \$668; Austria \$529; Italy \$476.
Pyrite, unroasted	389,486	3,000	Poland 119,300; France 99,898; Saudi Arabia 40,000.
Quartz crystal, piezoelectric	value \$3,090,000	\$80,000	Switzerland \$968,000; Singapore \$563,000; Slovakia \$491,000.
Salt and brine	metric tons 3,695,084	2,572	Belgium 1,063,140; Netherlands 597,670; Denmark 384,793.
Sodium compounds, n.e.s., natural and/or manufactured:			
Soda ash	do. 457,061	74	Netherlands 31,040; Denmark 28,616; unspecified 298,602.
Sulfate	do. 39,078	8	Czech Republic 11,584; Hungary 7,804; Austria 4,998.
Stone, sand and gravel:			
Dimension stone:			
Crude and partly worked	do. 252,980	388	Switzerland 116,513; Austria 81,281; Netherlands 20,662.
Worked	do. 186,650	6,095	France 41,897; Switzerland 32,366; Austria 27,894.
Dolomite, chiefly refractory-grade	do. 524,469	138	Luxembourg 379,656; Netherlands 71,162; Belgium 31,751.
Gravel and crushed rock	thousand metric tons 12,355	1	Netherlands 8,897; Switzerland 1,146; Belgium 1,034.
Limestone other than dimension	metric tons 101,169	--	Luxembourg 74,644; France 10,039; Netherlands 7,791.

See footnotes at end of table.

TABLE 5--Continued
GERMANY: EXPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity	Total	Destinations	
		United States	Other (principal)
INDUSTRIAL MINERALS--Continued			
Stone, sand and gravel--Continued			
Quartz and quartzite	71,573,577	147,999	Netherlands 49,487,574; Austria 5,447,648; Belgium 2,879,812.
Sand other than metal-bearing	metric tons 9,484,210	836	Netherlands 6,621,700; Belgium 1,898,127; Switzerland 413,306.
Sand and gravel	thousand metric tons 21,839	2	Netherlands 15,519; Belgium 2,932; Switzerland 1,559.
Sulfur:			
Elemental:			
Crude, including native and byproduct	metric tons 897,870	4	Belgium 145,484; Morocco 132,218; France 89,217.
Colloidal, precipitated, sublimed	4,020,820	3,125	Belgium 2,885,500; Denmark 519,687; France 230,800.
Dioxide	27,988,942	--	Austria 15,319,500; Spain 4,750,101; Netherlands 2,218,812.
Sulfuric acid	metric tons 1,007,523	87,067	Belgium 419,748; Norway 94,973; United Kingdom 71,343.
Talc, steatite, soapstone, pyrophyllite	5,284,598	47,574	Netherlands 1,055,875; Belgium 629,625; France 571,312.
Vermiculite, perlite, chlorite	1,619,069	--	Belgium 517,875; Poland 317,812; Luxembourg 130,800.
Other, slag and dross, not metal-bearing	metric tons 2,679,240	2,704	France 1,168,384; Netherlands 779,771; Belgium 219,979.
MINERAL FUELS AND RELATED MATERIALS			
Asphalt and bitumen, natural	do. 6,557	--	Denmark 5,348; Switzerland 537; Hong Kong, China 220.
Carbon black	do. 118,956	2,982	France 29,160; Belgium 12,221; Italy 9,697.
Coal:			
Briquets of anthracite and bituminous coal	47,724,497	--	France 41,951,101; Belgium 4,242,699; Switzerland 587,625.
Lignite, including briquets	metric tons 180,232	--	Austria 70,593; Belgium 49,408; France 17,394.
All grades, including briquets	do. 410,189	--	France 130,231; Belgium 117,976; Austria 94,629.
Coke and semicoke	metric tons 114,732	244	Austria 29,460; Netherlands 20,384; France 17,644.
Peat, including briquets and litter	do. 2,094,828	410	Netherlands 986,293; Italy 236,192; France 234,102.
Petroleum:			
Crude	do. 1,741,471	78,828	United Kingdom 1,584,482; France 77,505; Belgium 650.
Refinery products:			
Liquefied petroleum gas	do. 817,909	5,327	Poland 170,092; Netherlands 156,419; Belgium 136,093.
Mineral jelly and wax	do. 225,399	31	Netherlands 24,253; France 20,257; Poland 19,198.
Asphalt	do. 806,749	--	Austria 129,734; Czech Republic 120,478; France 117,851.
Bitumen and other residues	33,351,737	--	France 7,302,300; Poland 7,197,300; Austria 4,898,601.
Bituminous mixtures	metric tons 78,718	103	Luxembourg 21,207; Netherlands 13,333; France 11,193.
Petroleum coke	do. 651,701	982	Netherlands 333,024; France 106,237; Slovakia 50,522.
Unspecified	thousand metric tons 17,749	2,405	Austria 3,120; Switzerland 1,732; United Kingdom 1,725.
Uranium, metal, including alloys, all forms	156,000	100	Netherlands 119,100; United Kingdom 36,600; Canada 200.

-- Zero.

¹Less than 1/2 unit.

Source: United Nations Statistics Division, Commodity Trade Statistics Database (COMTRADE), at URL <http://unstats.un.org/unsd/comtrade/dqBasicQueryResults>.

TABLE 6
GERMANY: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity	Total	Destinations	
		United States	Other (principal)
METALS			
Alkali and alkaline-earth metals:			
Alkali metals	4,952,148	637,937	France 4,290,699; Italy 4,000; Japan 3,687.
Alkaline-earth metals	1,163,730	27,500	Russia 1,163,730; Netherlands 146,699; France 123,800.
Aluminum:			
Ore and concentrate	metric tons 1,907,966	288	Guinea 1,622,200; Greece 91,184; Australia 67,359.
Oxides and hydroxides	do. 1,273,905	6,730	Jamaica 467,948; Ireland 435,842; Greece 97,788.
Ash and residue containing aluminum	87,106,394	--	Netherlands 17,018,398; France 16,321,398; Denmark 13,029,601.
Metal, including alloys:			
Scrap	metric tons 462,320	422	Netherlands 74,393; Russia 64,679; Austria 61,398.
Unwrought	do. 1,895,615	421	Norway 404,203; United Kingdom 285,629; Netherlands 220,396.
Semimanufactures:			
Powders and flakes	24,912,276	2,681,000	Russia 9,224,000; Austria 4,379,101; France 3,863,824.
Rods, bars, profiles	metric tons 275,033	335	Austria 41,546; Hungary 29,171; Italy 28,624.
Wire	do. 117,598	559	Russia 61,949; Belgium 13,783; France 13,715.
Plates, sheets, strips	do. 442,402	3,717	France 73,625; Switzerland 48,202; United Kingdom 41,540.
Foil	do. 140,776	592	Switzerland 26,335; Italy 17,434; Austria 13,107.
Tubes and pipes	do. 43,416	276	Belgium 6,489; Denmark 5,863; Czech Republic 4,622.
Tube or pipe fittings	50,937	2,687	Italy 34,476; Netherlands 2,375; United Kingdom 1,625.
Antimony:			
Oxides	6,707,243	29,000	China 2,789,625; Belgium 2,171,312; France 1,136,125.
Metal, including alloys, all forms	149,389	1,909	China 78,601; Russia 51,101; United Kingdom 6,784.
Arsenic, metal, including alloys, all forms	value \$65,000	\$2,000	Japan \$54,000; China \$5,000; France \$2,000.
Beryllium, metal, including alloys, all forms	do. \$1,182,000	\$934,000	United Kingdom \$134,000; Belarus \$65,000; France \$16,000.
Bismuth, metal, including alloys, all forms	1,688,534	74,699	United Kingdom 1,152,375; Mexico 331,875; Peru 74,398.
Cadmium, metal, including alloys, all forms	value \$152,000	\$46,000	United Kingdom \$56,000; France \$19,000; Canada \$9,000.
Chromium:			
Ore and concentrate	metric tons 126,278	--	South Africa 90,525; Turkey 31,503; Netherlands 3,420.
Oxides and hydroxides	do. 8,367	271	United Kingdom 3,144; Kazakhstan 2,836; South Africa 1,320.
Metal, including alloys, all forms	4,066,944	88,901	Russia 1,582,675; Netherlands 1,020,140; France 595,187.
Cobalt:			
Oxides and hydroxides	438,972	2,375	Finland 205,601; Belgium 63,898; Canada 53,101.
Metal, including alloys, all forms	2,568,958	340,073	Belgium 391,862; United Kingdom 280,773; Russia 220,284.
Columbium and tantalum, metal, including alloys, all forms, tantalum	239,390	63,612	Japan 117,351; United Kingdom 13,241; China 12,000.
Copper:			
Ore and concentrate	metric tons 880,332	--	Chile 266,929; Argentina 126,793; Portugal 126,416.
Matte and speiss, including cement copper	33,896,548	5,125	Brazil 20,670,601; Iran 10,092,199; Morocco 2,045,312.
Oxides and hydroxides	1,162,797	178,101	Poland 240,300; Belgium 203,000; Singapore 202,000.
Sulfate	11,133,615	2,687	Poland 2,763,187; Russia 2,598,500; Uzbekistan 2,039,000.
Ash and residue containing copper	53,983,481	4,524,699	Italy 13,701,101; Chile 9,061,800; Netherlands 5,567,398.
Metal including alloys:			
Scrap	metric tons 379,726	7,774	Netherlands 42,224; France 40,956; United Kingdom 39,111.
Unwrought	do. 572,324	5,630	Russia 163,346; Chile 120,936; Poland 114,047.
Semimanufactures:			
Powders and flakes	5,237,889	210,898	Russia 2,941,375; United Kingdom 644,511; unspecified 566,625.
Rods, bars, profiles	74,382,413	344,875	Italy 13,050,198; France 10,734,425; Netherlands 9,995,596.
Wire	metric tons 203,258	84	France 90,066; Belgium 52,281; Sweden 24,006.
Plates, sheets, strips	53,302,370	1,414,560	Italy 10,702,435; Belgium 8,755,549; Finland 5,041,023.
Foil	9,096,768	412,671	Italy 1,112,875; France 974,386; unspecified Asia 2,208,853.
Tubes and pipes	34,837,782	47,874	Austria 6,416,487; Belgium 5,223,975; Greece 4,557,199.
Tube or pipe fittings	17,913,193	52,097	Italy 4,870,101; Poland 2,758,788; Belgium 1,853,726.
Germanium, metal, including alloys, all forms	1,626	51	China 1,125; Spain 199; United Kingdom 97.

See footnotes at end of table.

TABLE 6--Continued
GERMANY: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity	Total	Sources		
		United States	Other (principal)	
METALS--Continued				
Gold:				
Waste and sweepings	1,422,785	237,200	Australia 264,200; United Kingdom 246,872; Austria 175,900.	
Metal, including alloys, unwrought and partly wrought	41,705	846	Switzerland 9,505; Belgium 6,800; Sweden 6,002.	
Iron and steel:				
Iron and concentrate:				
Including roasted pyrite	metric tons	33,932,415	4,836	Brazil 17,989,960; Canada 4,636,332; Sweden 4,379,854.
Excluding roasted pyrite	do.	33,876,166	4,836	Brazil 17,989,959; Canada 4,636,332; Sweden 4,379,854.
Pyrite, roasted		56,248,986	--	Norway 40,136,800; Australia 15,251,601; Italy 859,687.
Metal:				
Scrap	metric tons	4,364,130	6,720	Netherlands 1,315,422; Poland 794,135; Czech Republic 503,215.
Pig iron, cast iron, related materials	do.	408,691	870	Trinidad and Tobago 67,463; Netherlands 66,952; Russia 46,768.
Ferrous alloys:				
Ferrosilicon	do.	478,204	2,908	South Africa 341,026; Kazakhstan 38,523; Zimbabwe 29,475.
Ferromanganese	do.	178,918	--	France 178,918; Spain 64,816; South Africa 34,140.
Ferromolybdenum	do.	10,369	94	Belgium 2,790; United Kingdom 2,331; Armenia 1,614.
Ferronickel		82,617,845	--	Venezuela 34,609,699; Greece 20,041,101; Indonesia 16,028,398.
Ferriobium		3,196,850	--	Brazil 2,417,625; Canada 489,875; Netherlands 127,500.
Ferrosilicochromium		8,354,000	--	Russia 1,128,000; Netherlands 283,625; unspecified 1,238,875.
Ferrosilicomanganese	metric tons	144,637	--	Norway 39,733; South Africa 26,650; Ukraine 22,389.
Ferrosilicon	do.	231,350	42	Poland 58,688; Norway 57,678; France 26,596.
Ferrotitanium and ferrosilicotitanium		8,862	20	Russia 3,596; United Kingdom 2,429; Netherlands 1,073.
Ferrotungsten and ferrosilicotitanium	metric tons	486,596	--	China 386,375; North Korea 50,000; Netherlands 33,101.
Ferrovandium	do.	5,471	--	Austria 2,691; Czech Republic 1,087; Luxembourg 351.
Silicon metal	metric tons	119,747	386	Norway 48,612; Brazil 36,027; Canada 14,493.
Steel, primary forms	do.	1,306,240	134	Poland 435,577; Netherlands 173,488; France 120,454.
Semimanufactures:				
Flat-rolled products:				
Of iron or nonalloy steel:				
Not clad, plated, coated	do.	4,663,146	588	Belgium 809,683; Netherlands 660,573; Austria 474,882.
Clad, plated, coated	do.	3,186,584	1,251	Belgium 949,271; Austria 658,646; France 495,781.
Of alloy steel	do.	1,304,297	26,017	France 484,870; Sweden 144,952; Austria 117,102.
Bars, rods, angles, shapes, sections	do.	4,878,406	10,805	France 862,520; Italy 652,460; Poland 516,300.
Rails and accessories	do.	286,145	8	Austria 100,542; Poland 68,633; Czech Republic 54,906.
Wire	do.	578,036	1,472	France 87,888; Czech Republic 83,447; Belgium 80,751.
Tubes, pipes, fittings	do.	1,806,760	3,598	Italy 379,591; France 147,624; Austria 132,890.
Lead:				
Ore and concentrate	do.	193,156	1,590	Australia 42,438; Sweden 33,528; Poland 30,194.
Oxides		9,473,736	2,429	France 7,309,398; Netherlands 1,080,187; Poland 900,375.
Metal, including alloys:				
Scrap	metric tons	9,075	136	Czech Republic 2,756; Lithuania 1,850; Poland 1,218.
Unwrought	do.	159,874	1,101	Poland 37,747; United Kingdom 35,388; Sweden 25,230.
Semimanufactures		7,752,736	19,421	Belgium 5,240,495; Luxembourg 984,000; Sweden 739,987.
Lithium, oxides and hydroxides		4,405,307	664,375	Switzerland 3,193,187; Russia 308,125; Belgium 175,699.
Magnesium, metal, including alloys:				
Scrap		3,026,096	7,187	Switzerland 1,152,687; China 840,000; Italy 205,601.
Unwrought		18,787,587	20,000	China 14,200,898; Israel 1,202,187; Canada 889,125.
Semimanufactures		16,636,769	323,100	China 9,341,300; Russia 2,518,124; Austria 1,877,812.

See footnotes at end of table.

TABLE 6--Continued
GERMANY: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity	Total	Sources	
		United States	Other (principal)
METALS--Continued			
Manganese:			
Ore and concentrate	6,917,448	182,699	Netherlands 2,647,000; Belgium 1,082,875; Morocco 1,060,000.
Oxides	7,009,143	212,199	Greece 2,080,000; Netherlands 1,433,999; South Africa 732,375.
Metal, including alloys, all forms	21,229,480	25,800	China 11,982,601; Ukraine 4,361,500; Russia 2,104,000.
Mercury	41,810	5,375	Czech Republic 12,312; Spain 10,000; Peru 6,875.
Molybdenum:			
Ore and concentrate:			
Roasted	1,517,401	--	Chile 420,000; Netherlands 381,500; China 239,300.
Unroasted	650,721	595,875	Canada 54,199; Japan 367; China 183.
Oxides and hydroxides	545,693	238	Uzbekistan 232,398; Chile 116,601; China 80,000.
Metal, including alloys:			
Scrap and unwrought	343,604	5,250	China 194,500; United Kingdom 47,300; Austria 29,699.
Semimanufactures	1,535,856	79,135	Austria 816,913; China 199,381; Armenia 162,498.
Nickel:			
Matte and speiss	4,030,104	500	Netherlands 3,980,625; Russia 24,800; Austria 12,125.
Oxides and hydroxides	563,148	97	Czech Republic 221,398; Canada 157,000; Japan 63,398.
Metal, including alloys:			
Scrap	metric tons 10,889	513	Netherlands 1,964; Austria 1,670; United Kingdom 1,270.
Unwrought	do. 74,503	313	Russia 32,651; United Kingdom 14,558; Norway 6,326.
Semimanufactures	13,291,664	1,492,579	Austria 5,028,140; France 2,927,761; Sweden 931,397.
Platinum-group metals:			
Waste and sweepings	3,840,881	300,900	United Kingdom 451,300; France 424,900; Netherlands 351,000.
Metal, including alloys, unwrought and partly wrought:			
Palladium	32,406	4,600	United Kingdom 7,938; South Africa 7,000; Russia 4,000.
Platinum	45,774	11,000	South Africa 16,800; United Kingdom 5,600; Sweden 3,910.
Rhodium	value, thousands \$59,938	\$9,056	South Africa \$20,218; United Kingdom \$16,789; Russia \$5,768.
Iridium, osmium, ruthenium	3,379	500	South Africa 2,100; Russia 300; United Kingdom 220.
Unspecified	84,737	16,401	South Africa 27,000; United Kingdom 16,401; Russia 7,000.
Rare-earth metals, including alloys, all forms	366,497	398	China 250,199; Austria 80,500; Japan 7,312.
Selenium, elemental	215,454	296	Russia 71,500; Sweden 49,199; Poland 39,000.
Silicon, high-purity	1,075,354	449,625	United Kingdom 205,199; Japan 182,300; Russia 129,500.
Silver, metal, including alloys, unwrought and partly wrought	2,816,072	55,100	Poland 390,097; Canada 366,700; unspecified 546,800.
Tin, metal, including alloys:			
Scrap	505,253	2,687	France 267,812; Austria 41,699; Czech Republic 38,199.
Unwrought	21,287,424	6,210	China 5,943,300; Peru 5,083,300; Indonesia 4,351,500.
Titanium:			
Oxides	16,767,672	21,699	France 4,674,199; Canada 2,556,000; China 1,893,812.
Metal, including alloys:			
Unwrought, waste or scrap, powders	metric tons 5,633	21	United Kingdom 367; Belgium 240; unspecified 4,664.
Semimanufactures	4,414,600	424,499	Italy 656,875; Russia 576,574; Japan 530,125.
Tungsten:			
Ore and concentrate	195,094	--	Nigeria 62,601; Thailand 61,300; Vietnam 21,000.
Metal, including alloys:			
Powders (wolfram)	1,423,145	62,300	Austria 612,187; Canada 484,187; Luxembourg 64,000.
Unwrought, bars/rods simply sintered, scrap	219,105	103,199	China 48,398; Austria 25,601; Italy 20,800.
Semimanufactures	3,237,428	877,710	United Kingdom 783,929; India 277,820; Japan 181,545.
All forms	4,879,678	1,043,209	United Kingdom 794,327; Austria 789,087; Canada 484,491.

See footnotes at end of table.

TABLE 6--Continued
GERMANY: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity	Total	Sources		
		United States	Other (principal)	
METALS--Continued				
Vanadium:				
Oxides and hydroxides	802,397	--	South Africa 620,000; China 80,101; United Kingdom 44,000.	
Metal, including alloys, all forms	105,744	13,000	South Africa 75,300; Russia 8,625; United Kingdom 8,625.	
Zinc:				
Ore and concentrate	metric tons	340,244	52,300	Belgium 113,569; Ireland 54,536; Australia 50,066.
Oxides		28,292,225	481,500	Poland 7,030,500; Austria 6,125,898; Netherlands 5,665,300.
Blue powder		7,963,539	--	Belgium 5,550,398; Norway 1,502,812; United Kingdom 708,812.
Ash and residue containing zinc		32,997,041	323,312	Netherlands 7,104,112; Poland 4,386,250; Belgium 4,286,698.
Metal, including alloys:				
Scrap		26,648,967	143,699	France 9,808,101; Netherlands 5,087,101; Belgium 3,090,000.
Unwrought	metric tons	354,066	(¹)	Belgium 76,455; Spain 67,839; Finland 65,166.
Semimanufactures		44,645,134	42,203,317	France 7,370,495; Italy 6,727,985; Slovenia 6,435,487.
Zirconium:				
Ore and concentrate	metric tons	50,088	13,419	Australia 19,789; South Africa 13,542; Belgium 1,674.
Metal, including alloys:				
Unwrought, waste or scrap, powders		195,277	2,687	Netherlands 175,000; France 9,625; China 4,687.
Semimanufactures		439,337	114,898	France 275,499; Sweden 10,125; Belgium 9,011.
All forms		634,614	117,585	France 285,124; Netherlands 175,152; Sweden 10,824.
Other, ashes and residues	metric tons	236,964	5,793	Netherlands 36,282; France 20,848; Canada 17,343.
INDUSTRIAL MINERALS				
Abrasives, n.e.s.:				
Natural: Corundum, emery, pumice, etc.		55,339,296	2,541,062	Italy 37,607,687; Iceland 6,364,699; India 5,673,699.
Artificial:				
Corundum	metric tons	101,355	1,211	China 26,440; Austria 17,586; Czech Republic 13,052.
Silicon carbide	do.	103,435	87	Norway 16,189; Romania 12,896; unspecified 43,525.
Dust and powder of precious and semiprecious stones, excluding/ including diamond	value	\$46,687	\$5,668	Ireland \$36,582; Switzerland \$1,326; Belgium \$902.
Grinding and polishing wheels and stones		20,442,676	174,701	China 3,287,499; Poland 2,635,807; Slovenia 2,253,119.
Asbestos, crude		58,898	--	All from Canada.
Barite and witherite	metric tons	218,811	199	China 100,282; France 40,298; Bulgaria 26,700.
Boron materials:				
Crude natural borates		9,835,607	21,636	Turkey 4,767,500; Belgium 3,435,437; Netherlands 823,500.
Oxides and acids		22,693,392	9,702,000	Turkey 7,260,199; Chile 2,584,500; Russia 1,735,500.
Cement	metric tons	1,509,386	11	Belgium 437,042; Czech Republic 359,748; France 255,976.
Chalk	do.	199,039	15	Netherlands 84,585; France 74,867; Belgium 26,882.
Clays, crude:				
Bentonite	do.	253,998	1,237	Netherlands 121,880; Czech Republic 38,090; Italy 27,874.
Chamotte earth and dinas earth	do.	66,051	30,876	Czech Republic 24,833; France 4,305; Netherlands 3,661.
Fire clay		25,111,078	125,500	Czech Republic 11,393,000; China 3,774,500; France 2,944,125.
Fuller's earth		8,482,986	1,818,000	Spain 4,535,500; Netherlands 1,532,500; Italy 318,000.
Kaolin	thousand metric tons	772	187	Czech Republic 202; United Kingdom 148; Netherlands 124.
Diamond, natural:				
Gem, not set or strung	value, thousands	\$185,117	\$4,072	India \$36,229; Israel \$35,119; Switzerland \$24,425.
Industrial stones	do.	\$5,657	\$959	Belgium \$1,075; Switzerland \$976; South Africa \$739.
Dust and powder	do.	\$46,687	\$5,668	Switzerland \$1,326; Belgium \$902; United Kingdom \$526.
Diatomite and other infusorial earth		43,408,628	11,272,800	Denmark 13,241,398; France 12,139,699; Mexico 2,405,875.
Feldspar		50,809,232	2,500	Norway 20,665,800; France 11,459,199; Austria 9,505,898.

See footnotes at end of table.

TABLE 6--Continued
GERMANY: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity		Total	Destinations	
			United States	Other (principal)
INDUSTRIAL MINERALS--Continued				
Fertilizer materials:				
Crude, n.e.s.		33,559,930	120,000	Netherlands 23,941,101; Belgium 3,980,187; Austria 3,508,812.
Manufactured:				
Ammonia	metric tons	379,318	1	Netherlands 201,930; Poland 74,713; Russia 47,914.
Nitrogenous	do.	3,486,438	96	Netherlands 1,165,988; Poland 439,018; Austria 398,615.
Phosphatic	do.	181,736	--	Netherlands 77,858; Russia 55,096; Morocco 16,562.
Potassic		91,407,469	617,648	Israel 36,022,898; Netherlands 26,900,499; France 17,181,800.
Unspecified and mixed	metric tons	5,468,128	4,656	Netherlands 1,553,345; Belgium 695,734; Poland 649,311.
Fluorspar	do.	234,074	--	China 71,271; South Africa 67,715; Namibia 63,879.
Graphite, natural		41,163,860	1,807,011	China 21,473,112; Madagascar 2,733,625; unspecified 21,473,112.
Gypsum and plaster	metric tons	191,501	1,548	France 108,246; Austria 34,110; Netherlands 28,204.
Iodine		1,318,364	648,312	Japan 323,187; Chile 158,500; Belgium 150,398.
Kyanite and related materials:				
Andalusite, kyanite, sillimanite		56,512,900	2,715,500	Belgium 15,680,800; South Africa 13,792,101; France 13,223,199.
Mullite	metric tons	7,089	1,483	Hungary 1,787; Luxembourg 1,117; United Kingdom 952.
Unspecified		63,601,648	4,198,625	Belgium 15,680,800; South Africa 13,792,101; France 13,260,398.
Lime	metric tons	393,864	325	France 140,874; Czech Republic 129,938; Belgium 57,936.
Magnesium compounds:				
Magnesite, crude		7,723,975	97	Austria 3,623,187; Spain 1,936,687; Netherlands 1,474,187.
Oxides and hydroxides	metric tons	348,046	2,908	China 122,057,812; Netherlands 85,824,125; Slovakia 47,781,000.
Other		243,300	--	France 131,699; Netherlands 111,601.
Mica:				
Crude, including splittings and waste		26,050,888	1,190,187	India 9,970,875; France 8,338,398; Austria 1,911,125.
Worked, including agglomerated splittings		1,331,333	7,812	Switzerland 586,125; China 256,300; Belgium 238,788.
Nitrates, crude		5,021,522	--	Poland 1,261,687; Belgium 1,006,375; Chile 935,375.
Phosphates, crude	metric tons	120,231	1	Israel 96,348; Belgium 19,483; Russia 2,927.
Phosphorus, elemental		39,222,422	5,375	Netherlands 20,154,699; Kazakhstan 11,477,898; China 6,109,101.
Pigments, mineral, iron oxides and hydroxides, processed		32,467,584	756,125	China 17,459,499; Italy 7,203,000; France 1,227,875.
Precious and semiprecious stones other than diamond:				
Natural	value, thousands	\$63,452	\$5,828	Thailand \$12,023; Brazil \$10,355; Hong Kong, China \$5,788.
Synthetic	do.	\$14,791	\$1,265	Austria \$3,446; Switzerland \$2,985; Japan \$2,099.
Pyrite, unroasted		42,170,112	--	Finland 40,436,300; Italy 1,394,312; Austria 319,000.
Quartz crystal, piezoelectric	value	\$9,233,000	\$5,802,000	Japan \$910,000; Czech Republic \$671,000; Russia \$423,000.
Salt and brine	metric tons	2,366,521	621	Netherlands 2,005,543; United Kingdom 96,886; Poland 86,159.
Sodium compounds, n.e.s., natural and/or manufactured:				
Soda ash	do.	325,201	1,246	France 98,071; Poland 93,105; Netherlands 78,280.
Sulfate		85,169,070	1,187	Spain 28,340,500; Austria 19,474,300; Belgium 18,344,000.
Stone, sand and gravel:				
Dimension stone:				
Crude and partly worked	metric tons	389,816	79	Poland 74,452; Norway 70,686; Austria 40,455.
Worked	do.	1,584,285	227	China 433,572; Poland 231,091; Italy 217,375.
Dolomite, chiefly refractory-grade	do.	645,348	6,180	Estonia 244,321; Belgium 167,850; Denmark 93,611.
Gravel and crushed rock	do.	10,623,867	48	Norway 4,887,427; France 1,886,722; United Kingdom 1,053,838.
Limestone other than dimension	do.	2,408,854	478	Poland 1,643,235; Austria 445,765; Sweden 191,269.
Quartz and quartzite		76,453,855	523,511	Austria 25,586,350; Belgium 9,373,699; Netherlands 9,353,324.
Sand other than metal-bearing	metric tons	1,822,361	8,997	France 1,085,431; Netherlands 380,128; Belgium 126,704.
Sand and gravel	do.	12,446,228	9,044	Norway 4,887,663; France 2,972,153; United Kingdom 1,055,318.

See footnotes at end of table.

TABLE 6--Continued
GERMANY: IMPORTS OF SELECTED MINERAL COMMODITIES IN 2003

(Kilograms unless otherwise specified)

Country and commodity	Total	Destinations	
		United States	Other (principal)
INDUSTRIAL MINERALS--Continued			
Sulfur:			
Elemental:			
Crude, including native and byproduct	45,978,721	16,718	Netherlands 19,963,699; France 6,087,699; Belgium 5,151,500.
Colloidal, precipitated, sublimed	1,448,419	23,800	India 1,242,125; France 161,601; Poland 20,500.
Dioxide	6,961,112	50,000	France 4,980,300; Switzerland 908,312; Sweden 907,125.
Sulfuric acid	metric tons 65,891	90	Netherlands 40,990; Belgium 8,269; Switzerland 7,660.
Talc, steatite, soapstone, pyrophyllite	do. 307,374	130	Netherlands 119,307; Austria 54,560; France 47,671.
Vermiculite, perlite, chlorite	do. 64,691	40	Greece 36,146; Hungary 14,902; South Africa 10,782.
Other, slag and dross, not metal-bearing	do. 1,914,527	2,268	Netherlands 1,104,472; France 230,051; Poland 174,913.
MINERAL FUELS AND RELATED MATERIALS			
Asphalt and bitumen, natural	do. 21,224	5,440	Netherlands 10,878; Trinidad and Tobago 4,550; Poland 256.
Carbon black	do. 175,542	3,590	France 29,588; Netherlands 27,839; Russia 27,035.
Coal:			
Anthracite	do. 1,143,312	253,869	Russia 268,921; Australia 177,967; Belgium 121,601.
Bituminous	do. 20,599,048	707,390	Poland 6,174,991; South Africa 4,312,782; Colombia 2,145,772.
Briquets of anthracite and bituminous coal	22,277,913	--	Colombia 10,733,000; Poland 5,051,601; Netherlands 4,830,000.
Lignite, including briquets	metric tons 206,148	36	Czech Republic 167,226; Poland 38,314; Azerbaijan 383.
All grades including briquets	do. 26,536,716	961,526	Poland 6,888,769; South Africa 6,046,039; Colombia 2,910,361.
Coke and semicoke	do. 6,494,623	398,682	Poland 2,810,790; China 858,461; Spain 514,559.
Gas, natural, gaseous	do. 83,235,529	--	Unspecified 83,235,529.
Peat, including briquets and litter	do. 775,368	--	Estonia 341,151; Latvia 215,083; Lithuania 104,607.
Petroleum:			
Crude	thousand metric tons 107,269	--	Russia 29,238; Norway 21,520; United Kingdom 17,125.
Refinery products:			
Liquefied petroleum gas	metric tons 1,316,296	5,327	Belgium 514,433; Netherlands 440,176; Norway 130,732.
Mineral jelly and wax	do. 346,527	1,386	France 63,049; Netherlands 40,102; unspecified 189,068.
Asphalt	do. 397,550	93	France 121,563; Netherlands 93,547; Belgium 78,437.
Bitumen and other residues	8,864,062	--	Netherlands 5,346,000; France 1,935,187; Belgium 1,582,875.
Bituminous mixtures	11,995,980	555,500	Switzerland 4,588,500; France 2,635,312; Austria 1,306,625.
Petroleum coke	metric tons 837,018	490,960	Belgium 78,406; Argentina 49,166; Netherlands 38,233.
Unspecified	do. 29,683,173	19,331	Netherlands 15,875,013; Russia 3,959,599; Belgium 3,934,582.
Uranium, metal including alloys, all forms	4,482,032	1,285,800	United Kingdom 1,493,700; Canada 991,800; France 709,900.

-- Zero.

¹Less than 1/2 unit.

Source: United Nations Statistics Division, Commodity Trade Statistics Database (COMTRADE), at URL <http://unstats.un.org/unsd/comtrade/dqBasicQueryResults>.