



REPUBLIC OF TURKEY  
MINISTRY OF ECONOMY



INDUSTRY



MINING



TURKEY

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# MINING INDUSTRY IN TURKEY

## PRODUCTION

The minerals sector is one of the leading sectors supplying raw materials to domestic industry. Turkey possesses the largest resources of most minerals in the world and is one of the world's richest countries in terms of minerals. Excluding petroleum and coal, there are 53 exploitable minerals and metals and 4,500 mineral deposits in Turkey.

Turkey's geology is extremely complex and this complexity is reflected in the diversity of its mineral deposits. Best known for its industrial minerals, Turkey is a major producer of boron minerals, feldspar, marble, baryte, celestite (strontium), emery, limestone, magnesite, perlite and pumice.

A wide variety of primary metallic minerals are produced as well. Copper and chromite are the most significant minerals in the metals sector. Turkey is a major producer of processed mineral commodities, including refined borates and related chemicals, cement, ceramics and glass. In addition, Turkey is a significant producer of ferrochromium and steel.

In recent years, mining activities and the search and production of mainly silver, gold, manganese, copper and chrome ore have increased considerably in Turkey as in the rest of the world.

Today, 53 different minerals are produced in the Turkish mining sector. Most of the production is carried out by the private sector. The main producers are Eti Mine Works General Management, Turkish Hard Coal Corporation (TKİ), Turkish Hard Coal Institute (TTK) and private sector companies. The public sector is dominant in fuel minerals and metallic ore production, while the private sector is concentrated in industrial mineral production.

### Chromite

Turkey has a 6% share in world chromite mining and possesses 25 million tons of reserves. Ferrochromium is the most important product in production and exports. The majority of Turkey's chromite production has been utilized by the ferrochromium industry. In 2007, Turkey ranked 3rd in chromite exports in the world with a share of 12.8%. The most important chromite reserves are located in the Guleman district of Elazığ, the Kopdag district of Erzincan, the Fethiye district of Koycegiz, Muğla, Eskisehir, and the Pozanti district of Adana, Harmancik, the Orhaneli district of Bursa and the Pınarbaşı district of Kayseri.

Turkey's total export of chromite was US\$465,3 million with a 3,4% decrease in 2011. Major markets were China (%82), Russia (%5), Sweden (%2) and India (%2). The most important ferrochromium markets for Turkey were the Netherlands, Italy and Belgium.

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## Copper

The recognized copper reserves of Turkey are about 3.7 million tons of metal copper; nevertheless, total reserves amount to 15.8 million tons. Turkey has three important copper reserves: the East Black Sea, Southeast Anatolia and Thrace. Rods, profiles and cables are the most important export products in the sector. Turkey's copper ore exports were US\$ 364,8 million in 2011. The main buyers were China, India, Sweden and Finland.

## Zinc

Turkey's zinc reserves are about 2.7 million tons. Although Turkey has 2.07 % of world zinc reserves, ore production accounts for only 0.28% of world production. Zinc oxide ore reserves are located in the Zamanti (Kayseri/Nigde/Adana) district of Middle Taurus. In addition, some small reserves are found in Konya, Malatya, Bingol and Bitlis.

Turkey annually produces about 40 thousand tons of zinc metal. Half of the production is consumed in the domestic market and the rest is exported. Exports have increased in parallel with the increase in production. In 2011, approximately US\$ 202,8 million worth of zinc ore and concentrate was exported mainly to Belgium, China and Bulgaria.

## Feldspar

Turkey possesses 10% of total world feldspar reserves. Turkey's feldspar reserves are estimated to be 239 million tons (visible+potential). Important feldspar reserves are located in Manisa/Demirci, Kutahya/Simav, Aydın/Cine and Mugla/Milas. The rise in world production of white body tile and granite tile has increased the demand for feldspar.

Turkish producers are now competing in the domestic and international markets to supply this material. Most of the feldspar is produced by the private sector and 90% of the production is exported. Feldspar exports started in 1990 and it reached US\$ 130,8 million in 2011. Italy, Spain, Russia and Poland were the most important markets for Turkish feldspar. In 2011, Turkey ranked first in feldspar exports in the world with a share of 32%.

## Magnesite

Turkey's magnesite reserves are about 168.4 million tons. Most of these reserves are concentrated in the Konya-Kutahya-Eskisehir triangle. In addition, some reserves are located in Erzincan and Canakkale. Raw magnesite, dead burned and caustic calcined magnesite are produced in Turkey. Several small companies also produce raw magnesite. Some of them provide raw magnesite to the large domestic dead burned magnesite producers or to the ceramic industry, while others export their products.

Magnesite is exported as raw magnesite, calcined, sintered and burned. Magnesite is also exported as bricks which are used in the iron and steel industry. In 2011, magnesite exports were about US\$ 90 million, and Austria, Ireland and Germany were the major markets for Turkish magnesite. In 2011, Turkey ranked second in magnesite exports in the world with a share of 32%.

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## Bentonite and Kaolin

Turkey's bentonite reserves are 370 million tons. The production of ground bentonite has been rising steadily during the last 20 years. At present, Turkey is a net exporter of bentonite. Known bentonite deposits are found in Edirne-Enez, Çankırı, Tokat-Resadiye, Ankara-Kalecik and Giresun-Tirebolu. Bentonite production and exports have increased in the 1990's and reached US\$39,2 million with a 21% increase in 2011.

Bentonite exports were mainly directed to Germany, the Netherlands, Italy and France. Known kaolin reserves are found in some villages of Balıkesir, Nevşehir, Niğde, Bolu, Canakkale, and in the East Black Sea region. Turkey's probable kaolin reserves are about 100 million tons. In 2011, the total export value of kaolin was US\$2,9 million. Tunisia, Lebanon, Italy, England and Syria ranked as top markets for Turkish exports in 2011.

## Baryte

Turkey possesses 26 million tons of baryte which is about 2.1 % of the total world reserves. These reserves are composed of good quality baryte for all types including ground, crude or micronized.

The largest share of Turkish baryte production is sold to oil drillers. Important baryte deposits are located in Konya, Maras, Muş, Antalya and Kutahya. Being located near the most important consumers of barytes, Turkey has advantage in exporting baryte products. The total export value of baryte was US\$17,1 million in 2011 and the major markets for Turkish barytes were Iraq, Ukraine and Finland.

## Other Important Minerals and Their Exports

Turkey has a wealth of industrial minerals. The other important commercially produced minerals are plaster, sepiolite, diatomite, zeolite, sulphur, lead, silver, antimony, alumina ore, gypsum, phosphate, salt, sodium, sulphate, quartz, industrial sand, dolomite, talc, wollastonite, kyanite, calcite, emery rock and calcium fluorite .

Turkish mining exports reached US\$2 billion in 2011. Turkey's mineral exports have a share of 1.56% in Turkey's total exports in 2011. Chrome, copper , natural borates and zinc are the major metallic minerals which are exported. Natural stones, borates, feldspar, magnesite, pumice stone, baryte, kaolin, clays and calcite are the most important industrial minerals. In 2011, China and the European Union were the main markets in Turkey's mineral exports.

**Turkish Mining Exports (Quantity: Million Tons; Value: US\$)**

Products	2009		2010		2011		Major Markets in 2011 (%)
	Quantity	Value	Quantity	Value	Quantity	Value	
Chromite ores	1.745	267,6	2.257	481,9	2.159	465,3	China (83), Russia (5), Sweden (2), India (2)
Copper ores	356	284,5	421	481,5	257	364,8	China (53), India (11), Sweden (11), Finland (10)
Natural borates	4,3	104,2	5,9	167,2	4,7	202,9	China (45), US 13), Taiwan (9), Spain (6)
Zinc ores	272	95,6	392	195,4	316	202,8	Belgium (28), China (21), Bulgaria (13), S.Korea (6)
Ferro alloys	81	72,1	86	115,6	92	131,4	US (20), Holland (13), Belgium (10), Italy (7)
Feldspar	2.888	86,9	3.727	104,9	3.962	130,8	Italy (44), Spain (15), Russia (8), Poland (4)
Magnesite	197	57,9	232	69,2	276	90,4	Austria (45), Ireland (11), Germany (9), Ukraine (8)
Lead ores	35,9	20,8	64,1	62,6	65,9	88,7	China (90), Bulgaria (5), Serbia (2), Montenegro (2)
Gypsum, anhydrite, plasters	800	67,4	831	68,7	821	72,1	Russia (27), Ukraine (16), Nigeria (10)
Mineral substance	505	35	760	46,2	742	46,1	Russia (15), Ukraine (7), Egypt (7), India (7)
Clay nes	264	26	322	32,2	334	39,2	Germany (25), Holland (17), Italy (13), France (6)
Quartz	172	19,5	267	29,5	324	37,2	Israel (33), Spain (17), Italy (10), Vietnam (9)
Slag, droos other than granulated slag	184	3,9	252	8,8	392	30,5	China (80), Hong Kong (13), Romania (2), Australia (1)
Salt	28	3,9	261	17,1	417	30,4	Germany (28), Holland (20), Denmark (12), Belgium (11)
Iron ores	3,3	0,18	200	18,6	296	29,2	China (49), Romania (32), Italy (6), Syria (6)
Others	966	70,1	1.445	108,2	1.391	133	
<b>Total</b>	<b>8.509</b>	<b>1.216,3</b>	<b>11.530</b>	<b>2.008,2</b>	<b>11.856</b>	<b>2.095,6</b>	

**USEFUL LINKS**

- Istanbul Minerals and Metals Exporters' Associations (IMMIB)  
[www.immib.org.tr/en](http://www.immib.org.tr/en)
- Turkish Jewellery Association  
[www.jtr.org.tr/en](http://www.jtr.org.tr/en)



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