YTTRIUM[1]

[Data in metric tons, yttrium oxide (Y_2O_3) equivalent, unless otherwise specified]

Domestic Production and Use: Yttrium is one of the rare-earth elements. Bastnaesite was mined as the primary rare-earth source at the Mountain Pass Mine in California. Yttrium was estimated to represent about 0.12% of the rare-earth elements in the Mountain Pass bastnaesite ore, but its production content was not reported. Monazite concentrates containing yttrium-rich xenotime were produced from heavy-mineral-sand operations in Florida. There were no fully commercial facilities in the United States that could separate or refine yttrium.

The leading domestic and global end uses of yttrium were in ceramics and phosphors. Lesser amounts were consumed for fiber optics, optical glass, pigments and other applications, including yttrium-aluminum-garnet crystals used in lasers for communication, industrial, and medical applications.

Salient Statistics—United States:	2021	2022	2023	2024	2025[e]
Production, mine	NA	NA	NA	NA	NA
Imports for consumption, yttrium, alloys, compounds, and metal[e, 2]	560	818	323	457	300
Exports, compounds[e, 3]	9	4	20	[4]3	[4]12
Consumption, apparent[e, 5]	700	1,000	200	500	300
Price, average, dollars per kilogram:[6]					
Y_2O_3, minimum 99.999% purity	6	12	8	6	9
Yttrium metal, minimum 99.9% purity	39	41	33	33	40
Net import reliance[7, 8] as a percentage of apparent consumption	100	100	100	100	100

Recycling: Insignificant.

Import Sources (2021–24):[2] Although there were no domestic trade codes for yttrium materials exclusively, shipping records indicated imported yttrium alloys, compounds, and metals were from China,[9] 70%; Germany, 11%; Austria, 8%; Republic of Korea, 4%; and other, 7%. Nearly all imports of yttrium metal and compounds were derived from mineral concentrates processed in China. Import sources do not include yttrium contained in value-added intermediates and finished products.

Tariff: Item	Number	Normal Trade Relations 12–31–25
Rare-earth metals, unspecified:		
Not alloyed	2805.30.0050	5% ad valorem.
Alloyed	2805.30.0090	5% ad valorem.
Mixtures of rare-earth oxides containing yttrium or scandium as the predominant metal	2846.90.2015	Free.
Mixtures of rare-earth chlorides containing yttrium or scandium as the predominant metal	2846.90.2082	Free.
Yttrium-bearing materials and compounds containing by weight >19% to <85% Y_2O_3	2846.90.4000	Free.
Other rare-earth compounds, including yttrium and other compounds	2846.90.8090	3.7% ad valorem.

Depletion Allowance: Monazite, thorium content, 22% (domestic), 14% (foreign); yttrium, rare-earth content, 14% (domestic and foreign); and xenotime, 14% (domestic and foreign).

Prepared by **Shelby N. Johnston [(303) 236–5209, sjohnston@usgs.gov]**

YTTRIUM

Government Stockpile: Not available.

Events, Trends, and Issues: In April 2025, China tightened its export controls on rare-earth elements, adding specific controls on yttrium metals, oxides, alloys, and compounds. In November, the United States stated that China will issue general licenses for rare-earth exports, effectively eliminating the controls introduced in April. As of December 2025, the April export controls remained in effect, although China began to issue general export licenses to selected exporters.

The average price for Y_2O_3 increased by 42% and the average price for yttrium metal increased by 22% compared with prices in 2024. China exported an estimated 1,600 tons (Y_2O_3 equivalent) of yttrium compounds and metal in 2025, and the leading export destinations were, in descending order of quantity, Japan, the Republic of Korea, the United States, and Germany.

World Mine Production and Reserves:[10] The U.S. Geological Survey (USGS) estimated that 2025 world mine production of Y_2O_3 equivalent contained in rare-earth mineral concentrates was 10,000 to 15,000 tons. The USGS estimated that China produced most of the world supply of yttrium in 2025; however, China's Ministry of Industry and Information Technology did not release public information on 2025 quotas for rare-earth mining and separation. Additionally, the USGS estimated that Burma produced a significant percentage of the estimated world supply of yttrium in 2025.

Global reserves of Y_2O_3 were not quantified; however, the leading countries for total rare-earth-oxide reserves included Australia, Brazil, China, Russia, and Vietnam. Although mined rare earth production in Burma, India, Madagascar, Malaysia, Nigeria, and Thailand was significant, reliable information on yttrium reserves was not available.

World Resources:[10] Large resources of yttrium in monazite and xenotime are available worldwide in placer deposits, carbonatites, uranium ores, and weathered clay deposits (ion-adsorption ore). Additional resources of yttrium occur in apatite-magnetite-bearing rocks, deposits of niobium-tantalum minerals, non-placer monazite-bearing deposits, sedimentary phosphate deposits, and uranium ores.

Substitutes: Substitutes for yttrium are available for some applications but generally are much less effective. In most uses, especially in electronics, lasers, and phosphors, yttrium is generally not subject to direct substitution by other elements. As a stabilizer in zirconia ceramics, Y_2O_3 may be substituted with calcium oxide or magnesium oxide, but the substitutes generally impart lower toughness.

[e]Estimated. NA Not available.

[1]See also the Rare Earths chapter; trade data for yttrium are included in the data shown for rare earths.

[2]Estimated from Trade Mining LLC shipping records.

[3]Includes data for the following Schedule B number: 2846.90.2015.

[4]Data adjusted by the U.S. Geological Survey to exclude low-value shipments. The U.S. Census Bureau reported 1,300 metric tons of exports in 2024 and 630 metric tons of exports through July 2025.

[5]Defined as imports – exports. Rounded to one significant digit. Yttrium consumed domestically was imported or refined from imported materials.

[6]Free on board China. Source: Argus Media group, Argus Rare Earths.

[7]Defined as imports – exports.

[8]Domestic production of mineral concentrates was stockpiled or exported. Consumers of compounds and metals were reliant on imports and stockpiled inventory of compounds and metals.

[9]Includes Hong Kong.

[10]See Appendix C for resource and reserve definitions and information concerning data sources.