RARE EARTHS (HEAVY)[1]

[Data in metric tons, rare-earth-oxide (REO) equivalent, unless otherwise specified]

Domestic Production and Use: Terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium are heavy rare-earth elements, in order of atomic number. Minerals containing heavy rare earths were mined domestically in 2025. At least five companies were developing commercial-scale heavy-rare-earth processing and refining capacity and at least one company developed commercial-scale capacity for a specific heavy-rare-earth compound; several produced small-scale quantities of heavy-rare-earth compounds and metals in 2025, although none produced sustained commercial-scale quantities. Heavy rare earths were used in a variety of applications, including catalysts for petroleum refining, fiber optics, high-strength magnets, industrial and medical lasers, and medical and scientific equipment such as portable X-rays. End use varied by element. A significant amount of imported heavy rare earths was embedded in finished goods.

Salient Statistics—United States:	**2021**	**2022**	**2023**	**2024**	**2025[e]**
Imports, compounds and metals:[e, 2]	71	70	70	74	100
Price, average, dollars per kilogram:[3]					
Terbium oxide, 99.99% minimum	1,340	2,050	1,300	812	1,010
Dysprosium oxide, 99.5% minimum	410	382	330	257	239
Holmium oxide, 99.5% minimum	140	180	91	67	70
Erbium oxide, 99.5%, minimum	36	53	41	43	46
Ytterbium oxide, 99.99% minimum	15	14	13	14	15
Lutetium oxide, 99.99% minimum,	811	814	829	780	888
Net import reliance[4] as a percentage of apparent consumption, compounds and metals:	100	100	100	100	100

Recycling: Small quantities of heavy rare earths were recovered from permanent magnets.

Import Sources (2021–24): Although there are no domestic trade codes for individual heavy-rare-earth materials, shipping records indicated that the United States imported heavy rare earths. Terbium compounds and metals: China, 100%. Holmium compounds and metals: China, 100%. Erbium compounds and metals: Germany, 51%; China, 40%; and Netherlands, 9%. Ytterbium compounds and metals: China, 86%; Germany, 4%; Chile, 4%; Republic of Korea, 3%; and other, 3%. Lutetium compounds and metals: China,[5] 100%. Compounds and metals imported from Chile, Germany, Japan, the Republic of Korea, and the Netherlands were derived from mineral concentrates and chemical intermediates produced elsewhere. Import sources do not include heavy rare earths 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.
Other rare-earth compounds:		
Oxides	2846.90.2040	Free.
Chlorides	2846.90.2084	Free.
Carbonates	2846.90.8075	3.7% ad valorem.
Other	2846.90.8090	3.7% ad valorem.

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

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RARE EARTHS (HEAVY)

Government Stockpile: None.

Events, Trends, and Issues: In April 2025, China tightened its export controls on rare-earth elements, adding specific controls on metals, oxides, alloys, and compounds of terbium, dysprosium, lutetium, and other rare earths. In early October, China expanded its rare-earth export controls to include all heavy-rare-earth elements. However, in November, China suspended the early October export controls for 1 year. As of December 2025, the April export controls remained in effect, although China began to issue general export licenses to selected exporters.

In August, the U.S. Department of War (DOW) provided a rare-earths producer in Mountain Pass, CA, with a $150 million direct loan to construct a heavy-rare-earths separation facility. In 2025, the DOW provided an $80 million loan to one recycler in Marion, IN, and awarded $5.1 million to another recycler in Houston, TX, to recover rare earths, including terbium and dysprosium.

In October, an Australian producer announced its intent to construct a new facility in Malaysia to separate heavy rare earths, including terbium, dysprosium, and lutetium.

A mine in Brazil produced mixed concentrates from ionic clays with elevated terbium and dysprosium. In November, the U.S. International Development Finance Corporation approved a $465 million loan to the company to increase production of heavy rare earths.

World Mine Production and Reserves: See the Rare Earths chapter.

World Resources:[6] Rare earths are relatively abundant in the Earth's crust, but minable concentrations are less common than for most other mineral commodities. Heavy rare earths are less abundant than light rare earths but are elevated in some ores, including ion-adsorption clays.

Substitutes: Substitutes are available for some applications but are generally less effective. Light rare earths can substitute for heavy rare earths in several applications.

[e]Estimated.

[1]Yttrium is considered a heavy-rare-earth element but is excluded from these data. See also the Rare Earths and Yttrium chapters.

[2]REO equivalent or content of various materials were estimated from Trade Mining LLC shipping records.

[3]Free on board. Sources: Argus Media group, Argus Non-Ferrous Markets and Asian Metal Ltd.

[4]Defined as imports – exports. Quantitative export data were not available.

[5]Includes Hong Kong.

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