

Critical Minerals

Critical minerals are those that are essential to the economy and whose supply may be disrupted. Critical minerals also tend to be those on which a country is heavily import-reliant, so the minerals that are deemed critical will vary from country to country. Demand for many of these minerals has skyrocketed in recent years with the spread of high-tech devices that use a wide variety of materials.

Basics



Critical minerals are mineral resources that are essential to the economy and whose supply may be disrupted. The 'criticality' of a mineral changes with time as supply and society's needs shift. Table salt, for example, was once a critical mineral. Today, many critical minerals are metals that are central to high-tech sectors. They include the rare earth elements and other metals such as lithium, indium, tellurium, gallium, and platinum group elements. [Read more](#)

Frequently Asked Questions

Which mineral commodities used in the United States need to be imported?

American Geosciences Institute

How do we use rare earth elements?

U.S. Geological Survey

What are critical minerals, and why are they important?

U.S. Geological Survey

What are rare earth elements, and why are they important?

U.S. Geological Survey

Are rare earth elements the only critical mineral resources?

U.S. Geological Survey

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Industrial Minerals

Industrial minerals are non-metals including crushed rock, sand, and gravel. They are essential for construction of buildings and highways, and are used in many household products and industrial processes.



Metals

Metals are found in many different places around the world. Many natural Earth processes affect their distribution and abundance. Metals are essential to our economy and lifestyle, and the global demand for metals continues to rise.



Mineral Resources

Global demand is rising for mineral resources of all kinds, including metals, industrial minerals, and solid fuels like coal. Mineral resources are unequally distributed around the globe, reflecting the vast differences in geology of different parts of the Earth.

Geoscientists play an essential role in locating mineral resources and designing processes for their safe extraction.



Mining

Mining is essential to meet rising global demand for minerals. Geoscientists locate mineral resources and figure out how to extract them economically while minimizing health and environmental impacts. The method of mining, as well as potential environmental impacts, depends on the type of resource being mined.

Maps & Visualizations



Visualization of the mineral resources in everyday objects

U.S. Geological Survey

The U.S. Geological Survey has produced a visualization entitled, "Mineral Resources...out of the ground...into our daily lives", which details the mineral resources used to produce everyday items that we use in our homes, on our person, and out in the world. This visualization gives the major...

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Case Studies & Factsheets



Mining remediation in the Sudbury region of Ontario

The Sudbury region of Ontario is rich in metallic ores. Underground mining operations at the 15 active mines of Inco Ltd. and Falconbridge Ltd. in Sudbury currently produce 51,000 tons of ore per day [note: these figures are from the late 1990s], and five other mines within 500 km of Sudbury...

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