

Rare-Earth Elements Crucial to Defense

The U.S. has identified 35 metals or minerals crucial for its industrial base. Among them are:

Name	Properties	Aerospace Uses
Gallium	Superconductivity	Computer chips, light-emitting diodes
Neodymium	Extremely powerful, durable magnets	Missile guidance systems
Samarium	High-temperature magnetism, absorbs neutrons	Nuclear reactor control rods, lasers
Praesodymium	Makes stronger, more heat-tolerant alloys, permanent magnets	Aircraft engines, satellite components
Yttrium	Alloy strengthener, glass clarifier	Microwave emitters, optical coatings, LEDs
Promethium	Low radioactivity	Long-lived batteries for missiles
Lanthanum	Glass clarifier, reacts with hydrogen	Optics and lenses, night-vision goggles, fuel cells
Europium	Phosphorescence	LEDs, plasma displays