

# Supply risk for critical raw materials in military applications



Fighter Aircraft

Barium Borates	Beryllium Chromium Cobalt	Copper Dysprosium Germanium	Iron/Steel Lanthanum Nickel	Neodymium Platinum Praseodymium	Samarium Tantalum Titanium	Tellurium Tetralium Tungsten	Vanadium Yttrium	Silver Strontium Cadmium	Gallium Indium Lead	Lithium Manganese Molybdenum	Niobium Silver Tin	Thorium Zinc Zirconium	Gold Palladium Selenium
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Main Battle Tank

Aluminum Copper	Beryllium Chromium Copper	Samarium Iron/Steel Neodymium	Nickel Titanium Tungsten	Vanadium Tantalum Tungsten	Strontium Cadmium Gallium	Indium Manganese Molybdenum	Selenium Thorium Zinc	Palladium
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Missile

Aluminum Cobalt Copper	Chromium Dysprosium Iron/Steel	Dysprosium Nickel Neodymium	Silver Platinum Samarium	Strontium Tantalum Titanium	Tungsten	Silver Lead Lithium	Strontium Nickel Molybdenum Zirconium
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Submarine

Aluminum Borates Iron/Steel	Chromium Cobalt Iron/Steel	Palladium Samarium Titanium	Tungsten Vanadium	Silver Lead Lithium	Manganese Nickel Silver	Palladium
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Corvette

Aluminum Borates Copper	Cobalt Chromium Copper	Iron/Steel Nickel Samarium	Titanium Tungsten	Silver Lead Lithium	Molybdenum Manganese	Gold
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Artillery

Aluminum Borates Copper	Beryllium Chromium Copper	Samarium Iron/Steel Neodymium	Nickel Titanium Tantalum	Vanadium Yttrium	Cadmium Indium Molybdenum Manganese
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Ammunition

Aluminum Borates Copper	Beryllium Copper Germanium	Neodymium Tantalum Tantalum	Titanium Yttrium	Cadmium Indium
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Torpedo

Aluminum	Chromium	Lead Lithium Manganese	Zirconium Silver
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Assault Rifle

Iron/Steel Vanadium
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## Legend

Very high risk
High risk
Medium risk
Low risk

# Strategic And Critical Materials

**United States. Congress. Senate.  
Committee on Military Affairs**



## Strategic And Critical Materials:

**Strategic and Critical Materials** United States. Congress. Senate. Committee on Military Affairs,1941 **H.R. 5074 and H.R. 5076** United States. Congress. House. Committee on Armed Services. Subcommittee on Seapower and Strategic and Critical Materials,1990 Stockpile and Accessibility of Strategic and Critical Materials to the United States in Time of War United States. Congress. Senate. Committee on Interior and Insular Affairs,1953 Strategic and Critical Materials Report to the Congress ,1993 **Strategic And Critical Materials** L. Harold Bullis,James E Mielke,L Harold Bullis,2019-06-18 Much attention has been focused on U S dependency on imports for supplies of strategic minerals and materials There is alarm about the extent of that dependency and about the possibility that U S economic political and strategic decisions might be unduly influenced by arbitrary actions of foreign suppliers In addition there is concern that t Hearing on H.R. 1392, to Provide for the Establishment by Law of the Requirements for Strategic and Critical Materials to be Stockpiled in the National Defense Stockpile, to Transfer Management of the Stockpile to the Secretary of Defense, and for Other Purposes United States. Congress. House. Committee on Armed Services. Subcommittee on Seapower and Strategic and Critical Materials,1987 **Hearing on H.R. 4281, Critical Materials Act of 1981 Before the Seapower and Strategic and Critical Materials Subcommittee of the Committee on Armed Services, House of Representatives, Ninety-seventh Congress, Second Session, September 13, 1982** United States. Congress. House. Committee on Armed Services. Subcommittee on Seapower and Strategic and Critical Materials,1982 *Stockpile and Accessibility of Strategic and Critical Materials to the United States in Time of War* United States. Congress. Senate. Committee on Interior and Insular Affairs,1953 **Critical Materials Strategy** Steven Chu,2011-05 This report examines the role of rare earth metals and other materials in the clean energy economy It was prepared by the U S Department of Energy DoE based on data collected and research performed during 2010 In the report DoE describes plans to 1 develop its first integrated research agenda addressing critical materials building on three technical workshops convened by the DoE during November and December 2010 2 strengthen its capacity for information gathering on this topic and 3 work closely with international partners including Japan and Europe to reduce vulnerability to supply disruptions and address critical material needs Charts and tables This is a print on demand report **Hearing on H.R. 3743, To Provide for the Establishment by Law of the Goals for the National Defense Stockpile, and for Other Purposes** United States. Congress. House. Committee on Armed Services. Subcommittee on Seapower and Strategic and Critical Materials,1986 *Hearing on H.R. 2154 to Revise the Strategic and Critical Materials Stock Piling Act, to Require that Appropriations for Acquisition of Strategic and Critical Materials be Authorized by Law, to Establish a National Defense Stockpile Transaction Fund, and for Other Purposes, Before the Seapower and Critical Materials Subcommittee of the Committee on Armed Services, House of Representatives, Ninety-sixth Congress, First Session, February 23, C1979* United States. Congress.

House. Committee on Armed Services. Subcommittee on Seapower and Strategic and Critical Materials,1979 **Stockpile and Accessibility of Strategic and Critical Materials to the United States in Time of War: pt.11. Synthesis, substitutions, and replacements of scarce strategic materials. September 21, 22, October 25, Nove 17, 18, 1954. 1955. 494 p.; pt.12. Titanium - supplement to part 3. October 22, 23, November 19, December 6, 1954. 1955. 169 p** United States. Congress. Senate. Committee on Interior and Insular Affairs. Special Subcommittee on Minerals, Materials and Fuels Economics,1955 **H.R. 5074 and H.R. 5076** United States. Congress. House. Committee on Armed Services. Subcommittee on Seapower and Strategic and Critical Materials,1990 **Stockpile and Accessibility of Strategic and Critical Materials to the U.S. in Time of War** United States. Congress. Senate. Committee on Interior and Insular Affairs. Special Subcommittee on Integrated Oil Operations,1953 Stockpile and Accessibility of Strategic and Critical Materials to the United States in Time of War: Industrial representatives of producers and users of strategic and critical materials. 2 v United States. Congress. Senate. Committee on Interior and Insular Affairs,1953 *Hearing on H.R. 33, to Transfer Management of the National Defense Stockpile to the Secretary of Defense, Before the Seapower and Strategic and Critical Materials Subcommittee of the Committee on Armed Services, House of Representatives, Ninety-eighth Congress, First Session, February 22, 1983* United States. Congress. House. Committee on Armed Services. Subcommittee on Seapower and Strategic and Critical Materials,1984 *Managing Materials for a Twenty-first Century Military* National Research Council,Division on Engineering and Physical Sciences,National Materials Advisory Board,Committee on Assessing the Need for a Defense Stockpile,2008-04-26 Since 1939 the U S government using the National Defense Stockpile NDS has been stockpiling critical strategic materials for national defense The economic and national security environments however have changed significantly from the time the NDS was created Current threats are more varied production and processing of key materials is more globally dispersed the global competition for raw materials is increasing the U S military is more dependent on civilian industry and industry depends far more on just in time inventory control To help determine the significance of these changes for the strategic materials stockpile the Department of Defense asked the NRC to assess the continuing need for and value of the NDS This report begins with the historical context of the NDS It then presents a discussion of raw materials and minerals supply an examination of changing defense planning and materials needs an analysis of modern tools used to manage materials supply chains and an assessment of current operational practices of the NDS H.R. 5074 and H.R. 5076 United States. Congress. House. Committee on Armed Services. Subcommittee on Seapower and Strategic and Critical Materials,1990 *Strategic and Critical Materials Report to the Congress* ,1988 **Critical Mineral Resources of the United States** K. J. Schulz,John H. DeYoung,Robert R. Seal,Dwight C. Bradley,2017 As the importance and dependence of specific mineral commodities increase so does concern about their supply The United States is currently 100 percent reliant on foreign sources for 20 mineral commodities and imports the majority of its supply

of more than 50 mineral commodities Mineral commodities that have important uses and face potential supply disruption are critical to American economic and national security However a mineral commodity s importance and the nature of its supply chain can change with time a mineral commodity that may not have been considered critical 25 years ago may be critical today and one considered critical today may not be so in the future The U S Geological Survey has produced this volume to describe a select group of mineral commodities currently critical to our economy and security For each mineral commodity covered the authors provide a comprehensive look at 1 the commodity s use 2 the geology and global distribution of the mineral deposit types that account for the present and possible future supply of the commodity 3 the current status of production reserves and resources in the United States and globally and 4 environmental considerations related to the commodity s production from different types of mineral deposits The volume describes U S critical mineral resources in a global context for no country can be self sufficient for all its mineral commodity needs and the United States will always rely on global mineral commodity supply chains This volume provides the scientific understanding of critical mineral resources required for informed decisionmaking by those responsible for ensuring that the United States has a secure and sustainable supply of mineral commodities

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