

Nuclear Fuel Applications



Boron based compounds are used to control the reaction rate. Boron Products' materials limit the introduction of new materials to the reactor environment, thus reducing the number of daughter products created.

Enriched Zirconium Diboride

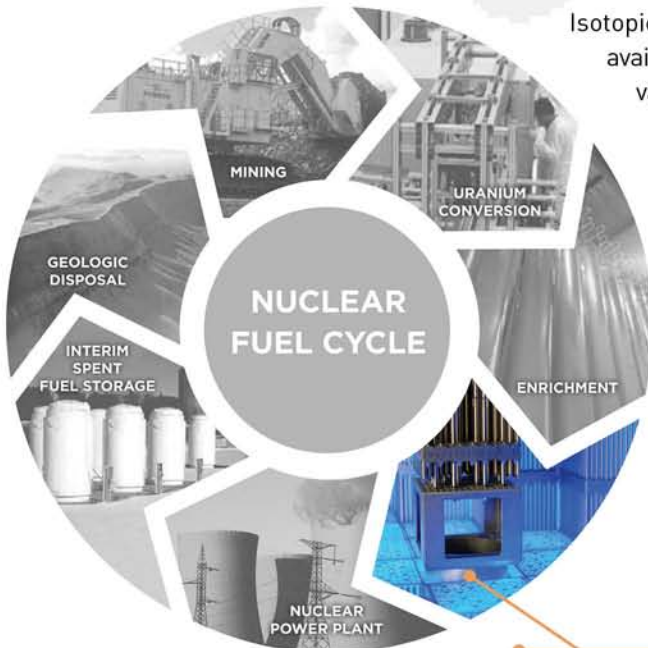
^{10}B enriched zirconium diboride (Zr^{10}B_2) is produced by Boron Products, LLC for use as a burnable poison for nuclear reactor fuel applications. The primary commercial product is a specially designed sputtering target. Zirconium diboride combines the most efficient neutron absorber available with zirconium for use in internal reactor components.



Natural and Enriched Boron Carbide

Isotopically tailored boron carbide (B_4C) products are manufactured from available enriched boric acid. Boron carbide can be produced in many powder variations with specifically engineered chemical, physical and particle size characteristics. Enriched or natural boron carbide powders can be converted into final articles such as pellets, plates or sputtering targets at the Boron Products hot pressing facility. We have extensive experience fabricating, cutting and grinding high density boron carbide to meet customer requirements.

Boron carbide products are available that meet existing industry specifications such as ASTM C750 and ASTM C751 or more stringent specifications as required by specific customer applications. Where necessary, naturally occurring isotopic materials can be synthesized using the Boron Products high quality process to comply with unique purity and stoichiometry requirements.



FUEL FABRICATION



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Ceradyne Advanced Technical Ceramics

Ceradyne, Inc. (NASDAQ:CRDN) is a publicly traded corporation specializing in development and vertically integrated production of advanced ceramic materials at facilities based in North America, Europe and Asia. Ceradyne's advanced ceramics are sought for the most demanding applications in automotive, industrial wear, medical, electronic, neutron absorption and defense industries.



核燃料应用



硼化合物用于反应性控制。赛瑞丹硼产品公司生产的材料限定反应堆环境中新材料的引入，从而减少了衍生材料的数量。

富集二硼化锆

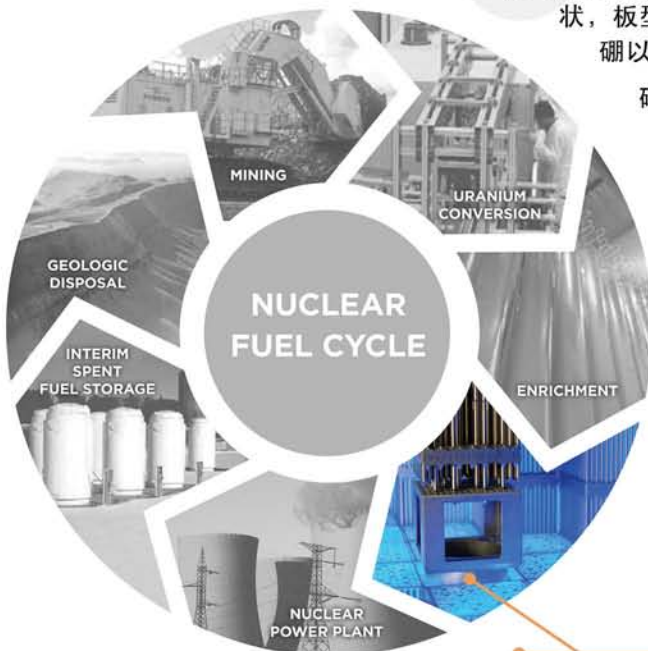
赛瑞丹硼产品公司生产的富集 ^{10}B 二硼化锆 (Zr^{10}B_2) 可用作核反应堆燃料的可燃毒物。主要的商业产品是专门设计的喷涂靶材。二硼化锆结合了最有效的中子吸收材料和锆用于反应堆内部组件。



天然和富集碳化硼

同位素可定制的碳化硼 (B_4C) 产品可以从富集硼酸中生产。碳化硼可生产成多种粉末形态，具备专门设计的化学、物理和粒度特性。富集或天然碳化硼粉末能够通过赛瑞丹硼产品公司的热压设备转化成最终需求的形态如片状，板型或喷涂靶材。我们拥有大量的经验生产，切割，打磨高密度碳化硼以满足客户需求。

碳化硼产品可以满足目前的工业标准如ASTM C750和ASTM C751或者客户特殊应用要求的更严格的规范。需要时，赛瑞丹硼产品公司可以用其高质量的工艺将天然同位素材料合成以满足专门的纯度和化学计量要求。



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