Nuclear Power Plant Chemistries

As a preferred supplier of high purity, stable isotopes, Ceradyne Boron Products offers the capacity and ^{10}B enrichment capability to exceed the requirements of the new EPR™ design and other pressurized water reactor users.

Enriched boron compounds are manufactured under an ISO 9001:2008 certified quality system and exceed nuclear safety and environmental regulated guidelines. Additional quality certifications include 10CFR50 Appendix B and 10CFR21.

Nuclear Plant Chemistries

Boron Products, LLC has provided the global commercial nuclear power industry with high purity stable isotopes for more than 30 years. The company's $^{10}Boron$ isotope is a strong neutron absorber and is used for both nuclear waste containment and nuclear power plant radiation control. With the largest boron isotope enrichment facility in the world, Boron Products continues to be the leading manufacturer of optimized materials for nuclear chemistry applications.

Enriched Boric Acid

Enriched boric acid is one of the basic products manufactured by Boron Products, LLC and is a precursor for most of the other boron containing chemicals. Enriched in either the ^{10}B or ^{11}B isotope to very high levels, our boric acid exceeds accepted standards of the nuclear industry throughout the world. In all chemical reactions, our enriched products behave as their natural counterparts.

7-Lithium Hydroxide Monohydrate

Pressurized water reactors use lithium hydroxide to neutralize the acidity created by the addition of boric acid to primary coolant solutions. Control of coolant pH is important to limit corrosion of the internal reactor components by the coolant solutions. Enriched lithium is offered by Boron Products in lithium hydroxide monohydrate form and the enrichment level is greater than 99.9 wt% ^{7}Li.

Enriched Sodium Pentaborate

Boiling water reactors use enriched sodium pentaborate in standby liquid control systems which are designed to flood the reactor core with a ^{10}B solution in the case of an emergency. More recently, the use of higher fuel enrichments and the popularity of MOX fuels have placed further demands on reactivity controls at boiling water reactor sites. Enriched sodium pentaborate provides an excellent solution for these new requirements.

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