Boric Acid MSR

Boric Acid Granular and Boric Acid Powder
H3BO3
Technical grade: 99.9%
CAS Nº 10043-96-4
NCM Nº 2810.00.10

MSR
Minera Santa Rita

Characteristics

Molecular weight	61.83
Purity as B element	17.4% min.
Purity as B_2O_3	99.9% min.

Boric Acid MSR is a white, crystalline, free flowing product with a wide range of applications in: ceramics, fiber glass, borosilicate glass, wood protection, cellulose insulation, metallurgy, flame retardants, corrosion inhibition, and in the agriculture industry as both fertilizer and growth regulator.

Chemical and Physical Properties

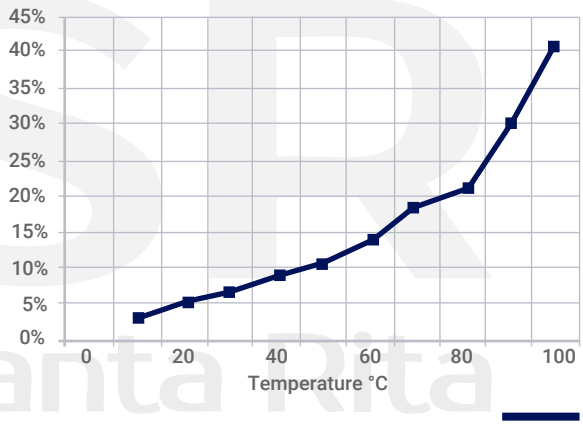
B_2O_3	56.25 % min.
Sulfates (SO_4)	0.0950 % max.
Chlorides (CL-)	0.0700 % max.
Humidity	0.10 % max.

This product is available in two versions:
Boric Acid Granular
Boric Acid Powder

pH

pH = 3.8
(5% by weight of solution at 22°C)

Solubility in water



Bulk density

Granular: 0.75 ton/m³
Impalpable: 0.72 ton/m³

Sieve specification

Granular: Mesh size ASTM Nº20 = 1% retained
Powder: Mesh Size ASTM nº200 = 10% retained

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Packaging

Boric Acid Granular MSR is available in 25kg polypropylene bags and in 1000kg bulk bags.
Boric Acid Powder MSR is available in 25kg polypropylene bags and in 950kg bulk bags.

Applications and Benefits

Agriculture and Fertilizers

Boron is an essential micronutrient for plant growth. Boron-based fertilizers are usually mixed with other compounds or NPK fertilizers to correct boron deficiency.

Flame Retardant

Boric Acid is an effective flame retardant chemical. It is used in a wide range of products: wood, plywood, textiles, cotton, paper and cellulose.

Glass and Fiber Glass

Boron fibers give high tensile strength and can be added to plastics to obtain a material that is stronger than steel yet lighter than aluminum. Boron is mainly used in glass fibers and in borosilicate glasses which are heat resistant glasses containing at least 5% Boron Oxide.
The heat and chemical resistance is attributed to Boron Oxide which, as a replacement for Sodium Oxide in the glass structure, creates an extremely low coefficient of thermal expansion. As a replacement for sodium oxide, boron oxide is also a powerful base that offers high quality heat and chemical resistance.
Boron compounds are important components in the optical glass industry used to reduce thermal shock and mechanical impact while increasing durability and chemical resistance.

Ceramics

Boron compounds significantly reduce the melting point and therefore Boric Acid is an essential ingredient in the production of borosilicate frits, ceramics and enamels. Boric Acid is used to control the coefficient of expansion which ensures that the glazes remain fixed to the body without cracking or distortion.

Corrosion Inhibitor

Different Boric Acid formulations can be used to inhibit corrosion and act as antifreeze solutions (mixed with ethylene glycol in automotive engine cooling systems), as well as in brewing, heat treatment, hydraulic fluids and the treatment of metal products.

Wood Protection and Pesticides

Borates, and especially Boric Acid, are very effective in the control and elimination of insects and fungi. They are toxic to cockroaches, ants, beetles and larvae; however, they are not harmful to mammals.

Metallurgy

Boron is used in the sealing of non-ferrous metals and as a deoxidizer and degasser in metallurgy. It is used in the production of scaling because it absorbs nutrients. Boron in steel increases its strength. It also removes impurities from metallurgical systems resulting in a high purity material that can be used as an electrical conductor.

Pharmaceuticals and Cosmetics

Boric Acid is recognized for its application as a pH buffer and as a moderate antiseptic agent and emulsifier. It is a component of ointments, mouth-washes, eye-drops, bath salts, creams and shampoos. It can be used to give the skin a cooling sensation due to its good thermal conductivity. It is also known that boron compounds made with 10B isotope selectively destroy cancer cells.

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