64010 Boric acid

Chemical composition : H_3BO_3

Flaky, light, white, translucent, shiny flakes that are greasy to the touch and dissolve in water with a very weak acidic reaction. Less than 0.1% molecules are ionized in a normal solution of boric acid at room temperature, but nearly 100% are ionized in hydrochloric acid. Boric acid is also soluble in alcohol (1:25) and glycerol (1:5).
When heated to about 70°C, boric acid changes to metaboric acid (HBO_2) with elimination of water. On further heating (160°C), a glassy melt is formed with further loss of water, which finally changes to anhydrous boron trioxide (B_2O_3) with swelling. When heated, boric acid dissolves metal oxides (similar to borax and boron trioxide). With water vapors, boric acid is volatile. It is therefore found in the "soffions" and "fumaroles" of Italian volcanic areas. Sassolin is boric acid found in hot spring waters of Sasso in Tuscany.

Boric acid in 1-3% solution inhibits the growth of most bacteria (without killing them), so it is used in solutions (eye washes, etc.), ointments and absorbent cotton (boric absorbent cotton) as a mild antiseptic. Various concerns have been raised about the use of 10% boric ointments. Boric acid may be absorbed to a greater extent here and cause internal poisoning.

Since boric acid is odorless, tasteless and quite cheap, it is used in various countries to preserve food (meat, sausage, fish, milk, butter, etc.).

Large quantities of boric acid are used for borax and enamel production. It is also used in pharmaceuticals, in tanning, in the candle industry for stiffening wicks, in the melting of aluminum borosilicate glass (8-12% B_2O_3 significantly reduces the expansion coefficient of the glass), in microscopic technology for the production of dye reagents (boric acid fuchsin, boric acid carmine), in the manufacture of mineral paints, in boron fertilization, textile stains, flame retardants, etc.

Kremer Pigmente GmbH & Co. KG · Hauptstr. 41-47 · DE-88317 Aichstetten ·Tel. 0049 7565 914480 · info@kremer-pigmente.com · www.kremer-pigmente.com