

## What are Borates?

Borates are naturally occurring minerals formed from rocks and minerals containing Boron. Sea water has naturally high levels of borates. Borates are mined around the world, with the largest mine located in the US near the town of Boron, California. 1.25 million tons were mined worldwide in 1997.

The primary use of borates is in impact and heat resistant borosilicate glass. They are also used to impart flame resistance to cellulose insulation, wood and cotton products, and furnishings. When heated, the borates melt into and protect the fibers by surrounding them with a protective glassy coating. Further heating of the borates causes decomposition, producing water as a byproduct.

Borates are commonly used in cosmetics, medically as an eye wash solution, as a water softener, and in many other products as a neutralizing or buffering agent. Borates are less toxic than table salt.

Due to their fungicidal properties, borates are used in many natural products, ranging from green lumber treatments and mildew resistant paints to coatings on organic fruit to prevent mold. Borates are also toxic to insects and are used widely in integrated pest management and control.

All of these properties make borates the natural choice for use in National Fiber's cellulose insulation, imparting significant benefits. Both our Cel-Pak and NuWool insulation products are total borate products. For optimal performance, choose National Fiber's total borate cellulose insulation for your next insulation project.

If you have any questions or would like to discuss this further, please contact our Technical Manager, Bill Hulstrunk at [technical@nationalfiber.com](mailto:technical@nationalfiber.com).