

3M Advanced Materials Division

# 3M™ 10B Enriched Potassium Fluoroborate

## Introduction

3M Technical Ceramics, Inc. supplies potassium fluoroborate ( $\text{KBF}_4$ ) enriched in  $^{10}\text{B}$ . 3M™ 10B Enriched Potassium Fluoroborate is a neutron absorption product developed for applications where high purity is not required. The isotopic composition is altered. The material is a white to off-white powder.

## Typical Physical Properties

(Not for specification purposes)

Characteristic	Value
Boron Enrichment	> 95.0 wt% $^{10}\text{B}$
Moisture (Loss on drying)	1000 ppm max.
pH of Solution	3.0 to 4.0
Loss on Ignition	5000 ppm max.
Bulk Density	1.3 kg/L min.

## Typical Analytical Results

(Not for specification purposes)

Impurities	Typical Analysis
Boron content	7.5 to 8.5 wt%
Na (Sodium)	<1000 ppm max.
Si (Silicon)	<2000 ppm max.
Al (Aluminum)	<100 ppm typical
Ca (Calcium)	<100 ppm typical
Cu (Copper)	<100 ppm typical
Fe (Iron)	<100 ppm typical
Mg (Magnesium)	<100 ppm typical
Ti (Titanium)	<100 ppm typical

## Packaging

Fiber drum.

## Boron Enrichment Capabilities

3M Technical Ceramics is a leading global commercial processor of enriched boron, and is one of the largest boron isotope enrichment facilities in the world today. We focus on manufacturing optimized materials with an emphasis on stable boron isotopes. Our proprietary manufacturing processes allow  $^{10}\text{B}$  and  $^{11}\text{B}$  enrichment from natural occurring ratios up to levels exceeding 99% isotopic purity. We offer secure supply, consistent product quality and the ability to custom engineer products for your unique applications. Our specialists are experts at solving materials-related problems in the demanding nuclear and semiconductor industries. For more information, contact us at [boron@mmm.com](mailto:boron@mmm.com).

## Analytical Services

As a manufacturer of specialty, high purity chemical and isotopic products, 3M Technical Ceramics maintains sophisticated analytical and testing capabilities at its manufacturing facility in Quapaw, OK. Our analytical laboratories support on-site production activities and provide our customers with data and evidence that the products they receive meet or exceed

their requirements. Our laboratories are fully equipped with current-generation instruments to perform a full range of testing procedures, including: inductively coupled plasma mass spectrometry; atomic absorption spectroscopy; ion and gas chromatography; carbon/sulfur and oxygen/nitrogen analysis; particle size analysis and BET surface area measurement.

## Product Storage, Handling and Safety

**Storage:** Keep container tightly closed to prevent contamination with water or air. If contamination is suspected, do not reseal container. Store away from heat. Store away from acids. Store away from strong bases. See product Safety Data Sheet (SDS) for additional information.

**Handling:** Do not breathe thermal decomposition products. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. See product SDS for additional information.

**Safety:** Handling of this product may be hazardous. See product SDS for additional information.

**Product is manufactured and sold by 3M Technical Ceramics Inc.**

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