

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (4N) 99.99% Boron Single Crystal

**Product Code:** BO-E-04-SX

**CAS Number:** 7440-42-8

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xn; Harmful

R22: Harmful if swallowed.

Information concerning particular hazards for human and environment:

N/A

Hazards not otherwise classified

No data available

Label elements

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labeled according to the CLP regulation.

Hazard pictograms



GHS07

Signal word

Warning  
Hazard statements  
H302 Harmful if swallowed.  
Precautionary statements  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell.  
P330 Rinse mouth.  
P501 Dispose of contents/container in accordance with local/regional/  
national/international regulations.  
WHMIS classification  
Not controlled  
Classification system  
HMIS ratings (scale 0-4)  
(Hazardous Materials Identification System)  
HEALTH  
FIRE  
REACTIVITY  
1  
0  
0  
Health (acute effects) = 1  
Flammability = 0  
Physical Hazard = 0  
Other hazards  
Results of PBT and vPvB assessment  
PBT:  
N/A  
vPvB:  
N/A

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances  
CAS No. / Substance Name:  
7440-42-8 Boron  
Identification number(s):  
EC number:  
231-151-2

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### **SECTION 4. FIRST AID MEASURES**

Description of first aid measures  
If inhaled:  
Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.  
Seek immediate medical advice.  
In case of skin contact:  
Immediately wash with soap and water; rinse thoroughly.  
Seek immediate medical advice.  
In case of eye contact:  
Rinse opened eye for several minutes under running water. Consult a physician.

If swallowed:  
Seek medical treatment.  
Information for doctor  
Most important symptoms and effects, both acute and delayed  
No data available  
Indication of any immediate medical attention and special treatment needed  
No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media  
Suitable extinguishing agents  
Special powder for metal fires. Do not use water.  
For safety reasons unsuitable extinguishing agents  
Water  
Special hazards arising from the substance or mixture  
If this product is involved in a fire, the following can be released:  
Boron oxide  
Advice for firefighters  
Protective equipment:  
Wear self-contained respirator.  
Wear fully protective impervious suit.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures  
Use personal protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Environmental precautions:  
Do not allow material to be released to the environment without official permits.  
Do not allow product to enter drains, sewage systems, or other water courses.  
Do not allow material to penetrate the ground or soil.  
Methods and materials for containment and cleanup:  
Dispose of contaminated material as waste according to section 13.  
Prevention of secondary hazards:  
No special measures required.  
Reference to other sections  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

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## **SECTION 7. HANDLING AND STORAGE**

Handling  
Precautions for safe handling  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation at the workplace.  
Information about protection against explosions and fires:  
No data available

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Store away from halogens.

Do not store with interhalogens.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Specific end use(s)

No data available

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

None.

Additional information:

No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Maintain an ergonomically appropriate working environment.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Inspect gloves prior to use.

Suitability of gloves should be determined both by material and quality, the latter of which may vary by manufacturer.

Penetration time of glove material (in minutes)

No data available

Eye protection:

Safety glasses

Body protection:

Protective work clothing

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## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties

Appearance:

Form: Solid in various forms

Color: Dark grey

Odor: Odorless

Odor threshold: No data available.  
pH: N/A  
Melting point/Melting range: 2075 °C (3767 °F)  
Boiling point/Boiling range: 2550 °C (4622 °F)  
Sublimation temperature / start: No data available  
Flammability (solid, gas)  
No data available.  
Ignition temperature: 700 °C (1292 °F)  
Decomposition temperature: No data available  
Autoignition: No data available.  
Danger of explosion: No data available.  
Explosion limits:  
Lower: No data available  
Upper: No data available  
Vapor pressure: N/A  
  
Density at 20 °C (68 °F): 2.34 g/cm<sup>3</sup> (19.527 lbs/gal)  
Relative density  
No data available.  
Vapor density  
N/A  
Evaporation rate  
N/A  
Solubility in Water (H<sub>2</sub>O): Insoluble  
Partition coefficient (n-octanol/water): No data available.  
Viscosity:  
Dynamic: N/A  
Kinematic: N/A  
Other information  
No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity  
No data available  
Chemical stability  
Stable under recommended storage conditions.  
Thermal decomposition / conditions to be avoided:  
Decomposition will not occur if used and stored according to specifications.  
Possibility of hazardous reactions  
No dangerous reactions known  
Conditions to avoid  
No data available  
Incompatible materials:  
Oxidizing agents  
Halogens  
Interhalogens  
Hazardous decomposition products:  
Boron oxide

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## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

Harmful if swallowed.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

LD/LC50 values that are relevant for classification:

Oral LD50 650 mg/kg (rat)

Skin irritation or corrosion:

May cause irritation

Eye irritation or corrosion:

May cause irritation

Sensitization:

No sensitizing effects known.

Germ cell mutagenicity:

No effects known.

Carcinogenicity:

EPA-I: Data are inadequate for an assessment of human carcinogenic potential.

Reproductive toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.

Specific target organ system toxicity - repeated exposure:

No effects known.

Specific target organ system toxicity - single exposure:

No effects known.

Aspiration hazard:

No effects known.

Subacute to chronic toxicity:

No effects known.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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## SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity:

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Additional ecological information:

Do not allow material to be released to the environment without official permits.

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT:

N/A

vPvB:

N/A

Other adverse effects

No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation

Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

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## SECTION 14. TRANSPORT INFORMATION

UN-Number

DOT, ADN, IMDG, IATA

N/A

UN proper shipping name

DOT, ADN, IMDG, IATA

N/A

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class

N/A

Packing group

DOT, IMDG, IATA

N/A

Environmental hazards:

N/A

Special precautions for user

N/A

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

N/A

Transport/Additional information:

DOT

Marine Pollutant (DOT):

No

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## SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)

Substance is not listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer

Substance is not listed.

Prop 65 - Developmental toxicity

Substance is not listed.  
Prop 65 - Developmental toxicity, female  
Substance is not listed.  
Prop 65 - Developmental toxicity, male  
Substance is not listed.  
Information about limitation of use:  
For use only by technically qualified individuals.  
Other regulations, limitations and prohibitive regulations  
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.  
Substance is not listed.  
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.  
Substance is not listed.  
Annex XIV of the REACH Regulations (requiring Authorisation for use)  
Substance is not listed.  
REACH - Pre-registered substances  
Substance is listed.  
Chemical safety assessment:  
A Chemical Safety Assessment has not been carried out.

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## 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.