

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (4N) 99.99% Boron Tribromide

**Product Code:** BO-BR-04

**CAS Number:** 10294-33-4

**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 in accordance with 29 CFR 1910 (OSHA HCS)

GHS06 Skull and crossbones

Acute Tox. 1 H300 Fatal if swallowed.

Acute Tox. 1 H330 Fatal if inhaled.

GHS05 Corrosion

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

Hazards not otherwise classified No data available

GHS label elements, including precautionary statements



Hazard pictograms

GHS05 GHS06

Signal word Danger

Hazard statements

H300+H330 Fatal if swallowed or if inhaled.

H314 Causes severe skin burns and eye damage.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor  
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P320 Specific treatment is urgent (see on this label).  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.  
WHMIS classification  
D1A - Very toxic material causing immediate and serious toxic effects  
D2B - Toxic material causing other toxic effects  
E - Corrosive material  
Classification system  
HMIS ratings (scale 0-4)  
(Hazardous Materials Identification System)  
HEALTH  
FIRE  
REACTIVITY  
4  
0  
2  
Health (acute effects) = 4  
Flammability = 0  
Physical Hazard = 2  
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:  
10294-33-4 Boron tribromide  
Identification number(s):  
EC number: 233-657-9

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

Description of first aid measures  
General information  
Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing has been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.  
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:  
Do not induce vomiting; immediately call for medical help.  
Information for doctor  
Most important symptoms and effects, both acute and delayed  
Causes severe skin burns.  
Causes serious eye damage.  
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 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.  
For safety reasons unsuitable extinguishing agents Water  
Special hazards arising from the substance or mixture  
Reacts violently with water  
If this product is involved in a fire, the following can be released:  
Hydrogen bromide (HBr)  
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 product to enter drains, sewage systems, or other water courses.  
Methods and materials for containment and cleanup:  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralizing agent.  
Dispose of contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents  
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

Handle under dry protective gas.  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation at the workplace.  
Open and handle container with care.  
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 water/moisture.  
Store away from strong bases.  
Store away from oxidizing agents.  
Further information about storage conditions:  
Store under dry inert gas.  
This product is moisture sensitive.  
Protect from humidity and water.  
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:  
10294-33-4 Boron tribromide (100.0%)  
REL (USA) Ceiling limit value: 10 mg/m<sup>3</sup>, 1 ppm  
TLV (USA) Ceiling limit value: 10 mg/m<sup>3</sup>, 1 ppm  
EL (Canada) Short-term value: C 1 ppm  
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.  
Store protective clothing separately.  
Avoid contact with the eyes and skin.  
Maintain an ergonomically appropriate working environment.  
Breathing equipment: Use self-contained respiratory protective device in emergency situations.  
Protection of hands:  
Impervious gloves  
Inspect gloves prior to use.  
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.  
Penetration time of glove material (in minutes) No data available  
Eye protection:  
Tightly sealed goggles  
Full face protection  
Body protection: Protective work clothing.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Liquid

Color: Light yellow

Odor: Acrid

Odor threshold: No data available.

pH: No data available.

Melting point/Melting range: -46 °C (-51 °F)

Boiling point/Boiling range: 90 °C (194 °F)

Sublimation temperature / start: No data available

Flammability (solid, gas) No data available.

Ignition temperature: No data available

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 at 20 °C (68 °F): 72 hPa (54 mm Hg)

Density at 20 °C (68 °F): 2.643 g/cm<sup>3</sup> (22.056 lbs/gal)

Relative density No data available.

Vapor density No data available.

Evaporation rate No data available.

Solubility in / Miscibility with

Water: Reacts violently

Partition coefficient (n-octanol/water): No data available.

Viscosity:

Dynamic: No data available.

Kinematic: No data available.

Other information No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity Reacts violently with water.

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

Reacts with strong oxidizing agents

Reacts violently with water

Conditions to avoid No data available

Incompatible materials:

Bases

Oxidizing agents

Water/moisture

Hazardous decomposition products:

Hydrogen bromide

Boron oxide

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## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

Fatal if swallowed.

Fatal if inhaled.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

LD/LC50 values that are relevant for classification: No data

Skin irritation or corrosion: Causes severe skin burns.

Eye irritation or corrosion: Causes serious eye damage.

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: No effects known.

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 product to reach groundwater, water courses, or sewage systems.

Danger to drinking water if even small quantities leak into the ground.

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, IMDG, IATA UN2692  
UN proper shipping name  
DOT Boron tribromide  
IMDG, IATA BORON TRIBROMIDE  
Transport hazard class(es)  
DOT  
Class 8 Corrosive substances.  
Label 8+6.1  
Class 8 (C1) Corrosive substances  
Label 8+6.1  
IMDG, IATA  
Class 8 Corrosive substances.  
Label 8+6.1  
Packing group  
DOT, IMDG, IATA I  
Environmental hazards: N/A  
Special precautions for user Warning: Corrosive substances  
Poison inhalation hazard: Yes  
EMS Number: F-A,S-B  
Segregation groups Acids  
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A  
Transport/Additional information:  
DOT  
Marine Pollutant (DOT): No  
Remarks: This material is poisonous by inhalation in Hazard Zone B.  
UN "Model Regulation": UN2692, Boron tribromide, 8 (6.1), I

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## SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture  
GHS label elements, including precautionary statements  
Hazard pictograms  
GHS05 GHS06  
Signal word Danger  
Hazard statements  
H300+H330 Fatal if swallowed or if inhaled.  
H314 Causes severe skin burns and eye damage.  
Precautionary statements  
P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor  
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P320 Specific treatment is urgent (see on this label).  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.  
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.

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.