



Boron-11 Oxide Isotope		Pricing >
Linear Formula	¹¹ B ₂ O ₃	
Pubchem CID	16212771	
MDL Number	MFCD00198017	
EC No.	N/A	
IUPAC Name	oxo(oxoboranyloxy)borane	
Beilstein/Reaxys No.	N/A	
SMILES	[11B](=O)O[11B]=O	
Inchl Identifier	InChI=1S/B2O3/c3-1-5-2-4/i1+0,2+0	
Inchl Key	JKWMSGQKBLHBQQ-ZCWHFVSRSA-N	
Signal Word	Warning	
Hazard Statements	H315-H319-H335-H360	
Hazard Codes	Xn	
Precautionary Statements	P201-P261-P305 + P351 + P338-P308 + P313	
Risk Codes	36/37/38	
Safety Statements	26-36	
RTECS Number	N/A	
Transport Information	NONH for all modes of transport	
WGK Germany	3	
GHS Pictograms	<p>GHS07 Exclamation Point</p>  <p>GHS08 Health Hazard</p> 	

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SAFETY DATA SHEET

Date Accessed: 05/02/2024

Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifiers: All applicable American Elements product codes for CAS #77704-22-4

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:
Domestic, North America +1 800-424-9300
International +1 703-527-3887

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Reproductive toxicity (Category 1B), H360
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335



Signal word: Danger

Hazard statement(s):
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H360 May damage fertility or the unborn child.

Precautionary statement(s):
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P321 Specific treatment (see supplemental first aid instructions on this label).
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: $11\text{B}_2\text{O}_3$
Molecular weight: 70.02 g/mol
CAS-No: 77704-22-4

SECTION 4. FIRST AID MEASURES

General advice:
Move out of dangerous area. Consult a physician.
Show this safety data sheet to the doctor in attendance.

If inhaled:
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact:
Wash off with soap and plenty of water. Consult a

physician.

In case of eye contact:

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed:

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed:

The most important known symptoms and effects are described in the labelling

Indication of any immediate medical attention and special treatment needed:

No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture:

Borane/boron oxides

Advice for firefighters:

Wear self-contained breathing apparatus for firefighting if necessary.

Further information:

No data available

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas.

Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning

up:
Pick up and arrange disposal without creating dust.
Sweep up and shovel. Keep in suitable, closed
containers for disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:
Avoid contact with skin and eyes. Avoid formation of
dust and aerosols. Provide appropriate exhaust
ventilation at places where dust is formed.

Conditions for safe storage, including any
incompatibilities:
Keep container tightly closed in a dry and well-
ventilated place.
Storage class (TRGS 510): 6.1D: Non-combustible,
acute toxic Cat.3 / toxic hazardous materials or
hazardous materials causing chronic effects.

Specific end use(s):
Apart from the uses mentioned in section 1.2 no other
specific uses are stipulated

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Components with workplace control parameters:
Contains no substances with occupational exposure
limit values.

Exposure controls
Appropriate engineering controls:
Handle in accordance with good industrial hygiene
and safety practice. Wash hands before breaks and at
the end of workday.

Personal protective equipment
Eye/face protection:
Safety glasses with side-shields conforming to EN166
Use equipment for eye protection tested and
approved under appropriate government standards
such as NIOSH (US) or EN 166(EU).
Skin protection:
Handle with gloves. Gloves must be inspected prior to
use. Use proper glove removal technique (without
touching glove's outer surface) to avoid skin contact
with this product. Dispose of contaminated gloves
after use in accordance with applicable laws and good
laboratory practices. Wash and dry hands.
Body Protection:

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance Form: solid

Odour No data available

Odour Threshold No data available

pH No data available

Melting point/freezing point

Melting point/range: 450 °C (842 °F) - lit.

Initial boiling point and boiling range:

No data available

Flash point Not applicable

Evaporation rate No data available

Flammability (solid, gas) No data available

Upper/lower flammability or explosive limits

No data available

Vapour pressure No data available

Vapour density No data available

Relative density 2.474 g/mL at 25 °C (77 °F)

Water solubility No data available

Partition coefficient: octanol/water: No data available

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Viscosity No data available

Explosive properties No data available

Oxidizing properties No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability:

Stable under recommended storage conditions.

Possibility of hazardous reactions:
No data available

Conditions to avoid:
Avoid moisture.

Incompatible materials: acids, Hydroxides

Hazardous decomposition products:
Hazardous decomposition products formed under fire conditions. - Borane/boron oxides
Other decomposition products - No data available

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity:
No data available

Dermal: No data available
No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity:
May damage fertility. May damage the unborn child.
Presumed human reproductive toxicant

Specific target organ toxicity - single exposure:
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure:
No data available

Aspiration hazard:
No data available

Additional Information:
RTECS: Not available

SECTION 12. ECOLOGICAL INFORMATION

Toxicity: No data available

Persistence and degradability:
No data available

Bioaccumulative potential:
No data available

Mobility in soil:
No data available(Boron-11B oxide)

Results of PBT and vPvB assessment:
PBT/vPvB assessment not available as chemical
safety assessment not required/not conducted

Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods:
Product:
Offer surplus and non-recyclable solutions to a
licensed disposal company. Contact a licensed
professional waste disposal service to dispose of this
material.

Contaminated packaging:
Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods
IMDG
Not dangerous goods
IATA
Not dangerous goods

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Boron-11B oxide

CAS-No. 77704-22-4

New Jersey Right To Know Components

Boron-11B oxide

CAS-No. 77704-22-4

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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.
