SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Boron Oxide Particles

Product Number: All applicable American Elements product codes, e.g. BO-OX-02-PTCS , BO-OX-03-PTCS , BO-OX-04-PTCS , BO-OX-05-PTCS

CAS #: 1303-86-2

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)
GHS08 Health hazard
Repr. 1B H360 May damage fertility or the unborn child.
Hazards not otherwise classified
No data available
GHS label elements
GHS label elements, including precautionary statements
Hazard pictogram



GHS08
Signal word
Danger
Hazard statements
H360 May damage fertility or the unborn child.
Precautionary statements
P281 Use personal protective equipment as required.
P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
WHMIS classification
D2A - Very toxic material causing other toxic effects
Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)
Health (acute effects) = 1
Flammability = 0
Physical Hazard = 1
Other hazards
Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS No. / Substance Name: 1303-86-2 Boron oxide
Identification number(s):
EC number: 215-125-8
Index number: 005-008-00-8

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

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing agents
Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

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.

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:
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.

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:
The product is not flammable
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 oxidizing agents.
Further information about storage conditions:
Store under dry inert gas.
This product is hygroscopic.
Keep container tightly sealed.
Store in cool, dry conditions in well-sealed containers.
Protect from humidity and water.
Specific end use(s)
No data available

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:
1303-86-2 Boron oxide (100.0%)

PEL (USA) Long-term value: 15* mg/m^3
*total dust

REL (USA) Long-term value: 10 mg/m^3

TLV (USA) Long-term value: 10 mg/m^3

EL (Canada) Long-term value: 10 mg/m^3

EV (Canada) Long-term value: 10 mg/m^3
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.
Maintain an ergonomically appropriate working environment.
Breathing equipment:
Use suitable respirator when high concentrations are present.
Recommended filter device for short term use:
Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.
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.
Material of gloves: Nitrile rubber, NBR
Penetration time of glove material (in minutes): 480
Glove thickness: 0.11 mm
Eye protection: Safety glasses
Body protection: Protective work clothing

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance:
Form: Various forms (powder/flake/crystalline/beads, etc.)
Color: White
Odor: Odorless
Odor threshold: No data available.
pH: N/A

Melting point/Melting range: ca 450 °C (ca 842 °F)
Boiling point/Boiling range: 1860 °C (3380 °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): 0 hPa

Density at 20 °C (68 °F): 2.46 g/cm^3 (20.529 lbs/gal)
Relative density: No data available.
Vapor density: N/A
Evaporation rate: N/A
Solubility in / Miscibility with Water at 25 °C (77 °F): 36 g/l
Partition coefficient (n-octanol/water): No data available.
Viscosity:
Dynamic: N/A
Kinematic: N/A
Other information: No data available

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
Reacts with strong oxidizing agents
Conditions to avoid
No data available
Incompatible materials:
Water/moisture
Oxidizing agents
Hazardous decomposition products:
Boron oxide

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.
LD/LC50 values that are relevant for classification:
Oral LD50 3150 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:
May damage fertility or the unborn child.
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:
The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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 undiluted product or large quantities to reach groundwater, water courses, or sewage systems.
Avoid transfer into the environment.
Results of PBT and vPvB assessment
PBT:
N/A
vPvB:
N/A
Other adverse effects
No data available

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.

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
UN "Model Regulation":

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS GHS label elements, including precautionary statements
Hazard pictograms
GHS08
Signal word
Danger
Hazard statements
H360 May damage fertility or the unborn child.
Precautionary statements
P281 Use personal protective equipment as required.
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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.
This substance is included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH).
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on themarket 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.

SECTION 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.