|  |  |
| --- | --- |
| Metro Welding Supply Corp. logo | Safety Data SheetBoron Trifluoride |
|  |

# Section 1: Product and Company Identification

**Metro Welding Supply Corp.**

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Detroit, MI 48223

(313) 834-1660 [phone]

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http://www.metrowelding.com/

Product Code: Boron Trifluoride

# Section 2: Hazards Identification



**Danger**

## Hazard Classification:

Acute Gas Inhale Toxicity (Category 3)

Acute Oral Toxicity (Category 4)

Aspiration Hazard (Category 1)

Eye Effects (Category 1)

Gases Under Pressure

## Hazard Statements:

Causes serious eye damage

Contains gas under pressure; may explode if heated

Harmful if swallowed

May be fatal if swallowed and enters airways

Toxic if inhaled

## Precautionary Statements

**Prevention:**

Wash thoroughly after handling.

Wear eye protection/face protection.

Do not eat, drink or smoke when using this product.

[In case of inadequate ventilation] wear respiratory protection.

Use only outdoors or in a well-ventilated area.

Avoid breathing dust/fume/gas/mist/ vapors/spray.

**Response:**

Do NOT induce vomiting.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If inhaled: Remove person to fresh air and keep comfortable for breathing.

Immediately call a poison center or doctor.

**Storage:**

Store in a well-ventilated place. Keep container tightly closed.

Protect from sunlight.

Store locked up.

**Disposal:**

Dispose of contents and/or container in accordance with applicable regulations.

# Section 3: Composition/Information on Ingredients

| CAS # |
| --- |
| 7637-07-2 |

| Chemical Substance | Chemical Family | Trade Names |
| --- | --- | --- |
| BORON TRIFLUORIDE | inorganic, gas, non-metallic, halides | BORON FLUORIDE; BORANE, TRIFLUORIDE; TRIFLUOROBORANE; TRIFLUOROBORON; BORON FLUORIDE (BF3); UN 1008; BF3 |

# Section 4: First Aid Measures

| Skin Contact | Eye Contact | Ingestion | Inhalation | Note to Physicians |
| --- | --- | --- | --- | --- |
| Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes. | Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention. | If a large amount is swallowed, get medical attention. | If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention. | For inhalation, consider oxygen. |

# Section 5: Fire Fighting Measures

| Suitable Extinguishing Media | Products of Combustion | Protection of Firefighters |
| --- | --- | --- |
| Non-flammable. | Non-flammable | * Any self-contained breathing apparatus with a full facepiece.
* Non-flammable
 |

# Section 6: Accidental Release Measures

| Personal Precautions | Environmental Precautions | Methods for Containment |
| --- | --- | --- |
| Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Evacuation radius: 150 feet. | Environmental effects unknown, avoid contamination of the environment.  | Stop leak if possible without personal risk. Reduce vapors with water spray. Do not get water directly on material. |

| Methods for Cleanup | Other Information |
| --- | --- |
| Use self-contained breathing apparatus. | Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA). |

# Section 7: Handling and Storage

| Handling | Storage |
| --- | --- |
| Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store outside or in a detached building. Store in a well-ventilated area. Store below 54 C. Store in a cool, dry place. Store in a tightly closed container. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Notify State Emergency Response Commission for storage or use at amounts greater than or equal to the TPQ (U.S. EPA SARA Section 302). SARA Section 303 requires facilities storing a material with a TPQ to participate in local emergency response planning (U.S. EPA 40 CFR 355.30). Keep separated from incompatible substances. | Subject to handling regulations: U.S. OSHA 29 CFR 1910.119. |

# Section 8: Exposure Controls/Personal Protection

| Exposure Guidelines |
| --- |
| BORON TRIFLUORIDE: 1 ppm (3 mg/m3) OSHA ceiling 1 ppm ACGIH ceiling 1 ppm (3 mg/m3) NIOSH recommended ceiling |

## Engineering Controls

Handle only in fully enclosed systems.

| Eye Protection | Skin Protection | Respiratory Protection |
| --- | --- | --- |
| Wear splash resistant safety goggles with a face shield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. | Wear appropriate chemical resistant clothing. | Any self-contained breathing apparatus with a full facepiece. |

## General Hygiene considerations

* Avoid breathing vapor or mist
* Avoid contact with eyes and skin
* Wash thoroughly after handling and before eating or drinking

# Section 9: Physical and Chemical Properties

| Physical State | Appearance | Color | Change in Appearance | Physical Form | Odor | Taste |
| --- | --- | --- | --- | --- | --- | --- |
| Gas | Colorless | Colorless | N/A | Compressed gas | Pungent odor | N/A |

| Flash Point | Flammability | Partition Coefficient | Autoignition Temperature | Upper Explosive Limits | Lower Explosive Limits |
| --- | --- | --- | --- | --- | --- |
| Not flammable | Not available | N/A | Nonflammable | Nonflammable | Nonflammable |

| Boiling Point | Freezing Point | Vapor Pressure | Vapor Density | Specific Gravity | Water Solubility | pH | Odor Threshold | Evaporation Rate | Viscosity |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| -148 F (-100 C) | -197 F (-127 C) | 653.9 mmHg @ -120 C | 2.3 (Air=1) | Not applicable | Reacts | Not applicable | 1.5 ppm | Not applicable | 0.0171 cP @ 25 C |

| Molecular Weight | Molecular Formula | Density | Weight per Gallon | Volatility by Volume | Volatility | Solvent Solubility |
| --- | --- | --- | --- | --- | --- | --- |
| 67.81 | B-F3 | 2.867 g/L | Not available | Not applicable | Not applicable | Soluble: Concentrated sulfuric acid, concentrated nitric acid, benzene, dichlorobenzene, chloroform, carbon tetrachloride, carbon disulfide, aromatic solvents, halogenated solvents |

# Section 10: Stability and Reactivity

| Stability | Conditions to Avoid | Incompatible Materials |
| --- | --- | --- |
| May react on contact with water. Releases corrosive gases. Releases toxic gases. | May react on contact with water. Releases corrosive gases. Releases toxic gases. | Metals, oxidizing materials, combustible materials |

| Hazardous Decomposition Products | Possibility of Hazardous Reactions |
| --- | --- |
| Acid halides, halogenated compounds, hydrogen fluoride, organic acids | Will not polymerize. |

# Section 11: Toxicology Information

## Acute Effects

| Oral LD50 | Dermal LD50 | Inhalation |
| --- | --- | --- |
| 1180 mg/m3 inhalation-rat LC50 | Not established | Potentially fatal if inhaled, burns |

| Eye Irritation | Skin Irritation | Sensitization |
| --- | --- | --- |
| Burns | Burns | Potentially fatal if inhaled, respiratory tract burns, skin burns, eye burns, kidney damage |

## Chronic Effects

| Carcinogenicity | Mutagenicity | Reproductive Effects | Developmental Effects |
| --- | --- | --- | --- |
| Not available | Not established | Not established | No data |

# Section 12: Ecological Information

## Fate and Transport

|  |  |  |  |
| --- | --- | --- | --- |
| Eco toxicity | Persistence / Degradability | Bioaccumulation / Accumulation | Mobility in Environment |
| Fish toxicity: 15000000 ug/L 24 hour(s) LC50 (Mortality) Bluegill (Lepomis macarochirus)Invertibrate toxicity: Not availableAlgal toxicity: Not availablePhyto toxicity: Not availableOther toxicity: Not available | Not available | Not available | Not available |

# Section 13: Disposal Considerations

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| --- |
| Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D003. |

# Section 14: Transportation Information

## U.S. DOT 49 CFR 172.101

| Proper Shipping Name | ID Number | Hazard Class or Division | Packing Group | Labeling Requirements | Passenger Aircraft or Railcar Quantity Limitations | Cargo Aircraft Only Quantity Limitations | Additional Shipping Description |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Boron trifluoride | UN1008 | 2.3 | Not applicable | 2.3 | Forbidden | Forbidden | Toxic-Inhalation Hazard Zone B |

## Canadian Transportation of Dangerous Goods

|  |  |  |  |
| --- | --- | --- | --- |
| Shipping Name | UN Number | Class | Packing Group / Risk Group |
| Boron trifluoride, compressed | UN1008 | 2.3; 8 | Not applicable |

# Section 15: Regulatory Information

## U.S. Regulations

|  |  |  |
| --- | --- | --- |
| CERCLA Sections | SARA 355.30 | SARA 355.40 |
| Not regulated. | 500 LBS TPQ | 500 LBS RQ |

## SARA 370.21

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Acute | Chronic | Fire | Reactive | Sudden Release |
| Yes | Yes | No | Yes | Yes |

## SARA 372.65

|  |
| --- |
| BORON TRIFLUORIDE |

## OSHA Process Safety

|  |
| --- |
| 250 LBS TQ |

## State Regulations

|  |
| --- |
| CA Proposition 65 |
| Not regulated. |

## Canadian Regulations

|  |
| --- |
| WHMIS Classification |
| Included for disclosure at 1% or greater |

## National Inventory Status

|  |  |  |
| --- | --- | --- |
| US Inventory (TSCA) | TSCA 12b Export Notification | Canada Inventory (DSL/NDSL) |
| Listed on inventory. | Not listed. | Not determined. |

# Section 16: Other Information

|  |
| --- |
| NFPA Rating |
| HEALTH=3 FIRE=0 REACTIVITY=1 |

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard