



American Scientific, LLC

Safety Data Sheet

Section 1

Product Description

Bromine

Product Name:	Spectrum Discharge Tube, Bromine. 3376-15
Recommended Use:	Science education applications
Synonyms:	Bromine molecule.; Diatomic bromine; Dibromine
Manufacturer:	American Scientific, LLC 6420 Fiesta Drive, Columbus, OH 43235
Chemical Information:	800-227-1150 (8am-5pm (ET) M-F)
Chemtrec for Emergency:	800-424-9300 (Transportation Spill Response 24 hours)
Phone Number for Information:	(614) 764-9002
Fax Number for Information:	(614) 764-9043

Section 2

Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;



Flammable solid. In contact with water releases flammable gases which may ignite spontaneously.

GHS Classification:

Flammable Solid Category 1, Substance or mixture which in contact with water emits flammable gas Category 1

Acute Toxicity Dermal Contains	100 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Gas Contains	Category 1
Acute Toxicity Inhalation Vapor Contains	Category 1
Acute Toxicity Inhalation Dust/Mist Contains	Category 1

Section 3 Composition / Information on Ingredients

Chemical Name: Bromine

CAS # 7726-95-6

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Section 4 First Aid Measures

Emergency and First Aid Procedures

- Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
- Eyes:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention immediately.
- Skin Contact:** In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
- Ingestion:** Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Section 5 Firefighting Procedures

- Extinguishing Media:** Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.
- Fire Fighting Methods and Protection:** Not available.
- Fire and/or Explosion Hazards:** Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.
- Hazardous Combustion Products:** Not available.

Section 6 Accidental Release Measures

Steps to Take in Case Material is Released or Spilled:

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill: Corrosive liquid. Poisonous liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.



Section 7**Handling and Storage**

Handling: Use only under a chemical fume hood. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest.

Precautions: Keep locked up. Keep container dry. Do not ingest. Do not breathe gas/fumes/vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as reducing agents, combustible materials, organic materials.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.



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Section 8**Protection Information**

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Bromine	TWA: 0.1 ppm STEL: 0.2 ppm	(Vacated) TWA: 0.1 ppm (Vacated) TWA: 0.7 mg/m ³ (Vacated) STEL: 0.3 ppm (Vacated) STEL: 2 mg/m ³ TWA: 0.1 ppm TWA: 0.7 mg/m ³	IDLH: 3 ppm TWA: 0.1 ppm TWA: 0.7 mg/m ³ STEL: 0.3 ppm STEL: 2 mg/m ³
Component	Quebec	Mexico OEL (TWA)	Ontario TWA/STEL
Bromine	TWA: 0.1 ppm TWA: 0.66 mg/m ³ STEL: 0.2 ppm STEL: 1.3 mg/m ³	TWA: 0.1 ppm TWA: 0.7 mg/m ³ STEL: 0.3 ppm STEL: 2 mg/m ³	TWA: 0.1 ppm STEL: 0.2 ppm

Control Parameters

Engineering Measures:	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protective Equipment (PPE):	Face shield. Full suit. Vapor respirator. Be sure to use an approved /certified respirator or equivalent. Gloves. Boots
Respiratory Protection:	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9**Physical Data**

Formula: Br ₂	Vapor Pressure: 23.3 kPa (@ 20°C)
Molecular Weight: 159.82	Evaporation Rate (BuAc=1): No data available
Appearance: Red brown	Vapor Density: (7.1 (Air = 1))
Odor: Pungent. Suffocating. (Strong.)	Specific Gravity: 3.11 (Water = 1)
Odor Threshold: 0.05 ppm	Solubility in Water: Not available
pH: No data available	Log Pow (calculated): Not available
Melting Point: -7.25°C (18.9°F)	Auto ignition Temperature: Not available
Boiling Point: 58.78°C (137.8°F)	Decomposition Temperature: Not available
Flash Point: Not applicable	Available Viscosity: Not available
Flammable Limits in Air: No data available	Percent Volatile by Volume: No data available

Section 10**Reactivity Data**

Reactivity:	None known, based on information available.
Chemical Stability:	Stable under normal conditions. May intensify fire; oxidizer.
Conditions to Avoid:	Incompatible products. Excess heat.
Incompatible Materials:	Organic materials, Strong oxidizing agents, Ammonia, Fluorine, Metals, Reducing agents.
Hazardous Decomposition Products:	Hydrogen halides, Thermal decomposition can lead to release of irritating gases and vapors.
Hazardous Polymerization:	Hazardous polymerization does not occur.

Section 11**Toxicity Data****Bromine: For Toxicity Data**

Acute Toxicity:	CAS Number 7726-95-6	Oral LD50 Oral LD Rat 230	Dermal LD50 Not applicable	Inhalation LC50 Not applicable
Carcinogenicity:	CAS Number 7726-95-6	IARC Not Listed	NTP Not Listed	OSHA Not Listed

Routes of Entry
Symptoms (Acute):
Delayed Effects:

Chronic Effects:
Mutagenicity:
Teratogenicity:
Sensitization:
Reproductive:

Target Organ Effects:
Acute:
Chronic:

Inhalation and ingestion
Skin burn and rash
Kidney and liver damage

No data available
No data available
No data available

No data available
No data available

**Section 12****Ecological Data**

Overview: Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

Mobility: Will likely be mobile in the environment due to its volatility

Persistence: Persistence is unlikely based on information available

Bioaccumulation: No data

Degradability: Persistence is unlikely based on information available

Other Adverse Effects: No data

Chemical Name (Magnesium)

CAS Number
7726-95-6

Eco Toxicity
Not applicable

**Section 13****Disposal Information**

Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.

Waste Disposal Code(s): Not Determined

**Section 14****Transport Information**

Ground - DOT Proper Shipping Name:	BROMINE
UN-No	UN1744
Hazard Class	8
Subsidiary Hazard Class	6.1
Packing Group	I



Section 15**Regulatory Information**

TSCA Status: All components in this product are on the TSCA Inventory. **Chemical Name:** Bromine

Federal and State Regulations:

Connecticut hazardous material survey.: Bromine Illinois toxic substances disclosure to employee act: Bromine Illinois chemical safety act: Bromine New York release reporting list: Bromine Rhode Island RTK hazardous substances: Bromine Pennsylvania RTK: Bromine Minnesota: Bromine Massachusetts RTK: Bromine Massachusetts spill list: Bromine New Jersey: Bromine New Jersey spill list: Bromine Louisiana RTK reporting list: Bromine California Director's list of Hazardous Substances: Bromine TSCA 8(b) inventory: Bromine SARA 302/304/311/312 extremely hazardous substances: Bromine SARA 313 toxic chemical notification and release reporting: Bromine

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

WHMIS (Canada): CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS E: Corrosive liquid.

DSCL (EEC): R26- Very toxic by inhalation. R35- Causes severe burns. R50- Very toxic to aquatic organisms. S1/2- Keep locked up and out of the reach of children. S7/9- Keep container tightly closed and in a well-ventilated place. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S61- Avoid release to the environment. Refer to special instructions/ Safety data sheets.

HMIS (U.S.A.): Health Hazard: 3 Fire Hazard: 0 Reactivity:

Section 16**Additional Information**

The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

Glossary

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
CAS	Chemical Abstract Service Number	OSHA	Occupational Safety and Health Administration

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
DOT	U.S. Department of Transportation	ppm	Parts per million
IARC	International Agency for Research on Cancer	RCRA	Resource Conservation and Recovery Act
N/A	Not Available	SARA	Superfund Amendments and Reauthorization Act
		TLV IDLH	Threshold Limit Value Immediately dangerous to life and health