



Health	3
Fire	0
Reactivity	0
Personal Protection	J

# Material Safety Data Sheet

## Cyanogen bromide MSDS

### Section 1: Chemical Product and Company Identification

**Product Name:** Cyanogen bromide

**Catalog Codes:** 10518

**CAS#:** 506-68-3

**RTECS:** GT2100000

**TSCA:** TSCA 8(b) inventory: Cyanogen bromide

**CI#:** Not available.

**Synonym:** Campilit; Bromine Cyanide; Bromocyan;  
Cyanogen monobromide

**Chemical Name:** Cyanogen Bromide

**Chemical Formula:** CBrN

#### Contact Information:

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### Section 2: Composition and Information on Ingredients

#### Composition:

Name	CAS #	% by Weight
Cyanogen bromide	506-68-3	100

**Toxicological Data on Ingredients:** Cyanogen bromide LD50: Not available. LC50: Not available.

### Section 3: Hazards Identification

#### Potential Acute Health Effects:

Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive), of eye contact (corrosive). Slightly hazardous in case of skin contact (permeator). The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

#### Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to central nervous system (CNS). The substance may be toxic to thyroid. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction,

or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

#### Section 4: First Aid Measures

**Eye Contact:**

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. Get medical attention immediately.

**Skin Contact:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Serious Skin Contact:**

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

**Inhalation:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Serious Inhalation:**

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

**Ingestion:**

If swallowed, 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 immediately.

**Serious Ingestion:** Not available.

#### Section 5: Fire and Explosion Data

**Flammability of the Product:** Non-flammable.

**Auto-Ignition Temperature:** Not applicable.

**Flash Points:** Not applicable.

**Flammable Limits:** Not applicable.

**Products of Combustion:** Not available.

**Fire Hazards in Presence of Various Substances:** Not applicable.

**Explosion Hazards in Presence of Various Substances:**

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.

**Fire Fighting Media and Instructions:** Not applicable.

**Special Remarks on Fire Hazards:**

Fire will produce irritating, corrosive and/or toxic gases. When heated to decomposition it emits highly corrosive fumes. When heated to decomposition it emits toxic fumes. Contact with metals may evolve flammable hydrogen gas.

**Special Remarks on Explosion Hazards:** Violent explosion occurs is cyanide salt is melted with nitrite salt.

#### Section 6: Accidental Release Measures

**Small Spill:** Use appropriate tools to put the spilled solid in a convenient waste disposal container.

**Large Spill:**

Corrosive solid. Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

## Section 7: Handling and Storage

**Precautions:**

Keep locked up.. Keep container dry. Do not ingest. Do not breathe dust. 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 oxidizing agents, metals, acids, alkalis.

**Storage:**

Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 0°C (32°F). Freeze.

## Section 8: Exposure Controls/Personal Protection

**Engineering Controls:**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:**

Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** Not available.

## Section 9: Physical and Chemical Properties

**Physical state and appearance:** Solid. (Solid needles.)

**Odor:** Penetrating

**Taste:** Bitter.

**Molecular Weight:** 105.92 g/mole

**Color:** White. Colorless.

**pH (1% soln/water):** Not available.

**Boiling Point:** 61.4°C (142.5°F)

**Melting Point:** 52°C (125.6°F)

**Critical Temperature:** Not available.

**Specific Gravity:** Density: 2.015 (Water = 1)

**Vapor Pressure:** Not applicable.

**Vapor Density:** 3.62 (Air = 1)

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** Not available.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** See solubility in water, diethyl ether.

**Solubility:** Soluble in cold water, diethyl ether, ethanol.

## Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Incompatible materials, moisture

**Incompatibility with various substances:**

Reactive with oxidizing agents, metals, acids, alkalis. Slightly reactive to reactive with moisture.

**Corrosivity:** Not available.

**Special Remarks on Reactivity:**

Moisture sensitive. Reaction with water will release toxic, corrosive, or flammable gases. May react with carbon dioxide to form hydrogen cyanide. Incompatible with strong oxidizers such as nitrites, chlorates. Incompatible with acid salts. Contact with acids and acid salts causes immediate formation of toxic and flammable hydrogen cyanide gas.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

## Section 11: Toxicological Information

**Routes of Entry:** Absorbed through skin. Inhalation. Ingestion.

**Toxicity to Animals:**

LD50: Not available. LC50: Not available.

**Chronic Effects on Humans:**

Causes damage to the following organs: central nervous system (CNS). May cause damage to the following organs: thyroid.

**Other Toxic Effects on Humans:**

Very hazardous in case of skin contact (irritant), of ingestion, . Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of inhalation (lung corrosive). Slightly hazardous in case of skin contact (permeator).

**Special Remarks on Toxicity to Animals:**

Lowest Published Lethal Dose/Conc: LDL [Human] - Inhalation (vapor); Dose: 92 ppm/10 minutes LDL[Mouse] - Inhalation (mist); Dose: 500 mg/m<sup>3</sup>/10 minutes

**Special Remarks on Chronic Effects on Humans:** Not available.

**Special Remarks on other Toxic Effects on Humans:**

Acute Potential Health Effects: Skin: Causes severe irritation and burns of the skin. It can produce substantial dermal after direct contact. Eyes: Causes strong irritation of the eyes. Inhalation: It causes serious nose, throat, and respiratory tract irritation, and lacrimation. It can release bromine or hydrogen bromide during hydrolysis or thermal decomposition and produce serious respiratory tract irritation with pulmonary edema or hemorrhages. It can release hydrogen cyanide gas. Hydrogen cyanide gas exposure may produce death within minutes. Lesser exposures may produce nausea, vomiting, palpitations, confusion, hyperventilation, anxiety and vertigo. Severe hypoxic signs in the absence of cyanosis suggest the diagnosis. Flushing, tachycardia, tachypnea, headache, and dizziness may first occur. It may progress to agitation, stupor, coma, apnea, generalized convulsions, noncardiogenic pulmonary edema, bradycardia, cardiac arrhythmias or conduction

abnormalities, hypotension, metabolic acidosis and death. Cyanosis is generally a late finding and does not occur until the stage of circulatory collapse and apnea. Ingestion: It might cause gastrointestinal tract irritation with systemic cyanide poisoning with symptoms similar to acute inhalation. Initial effects of cyanide poisoning include hyperpnea, tachypnea, tachycardia, hypertension, headache anxiety, agitation. Symptoms of severe or late stages of cyanide poisoning include agitation, stupor, coma, apnea, generalized convulsions, bradycardia, hypotension, dilated pupils, and death. Lesser cyanide exposures may produce abdominal pain, nausea, vomiting, palpitations, confusion, hyperventilation, anxiety, and vertigo. It may also produce irritation or burns of the mouth, throat, esophagus, or gastrointestinal tract. Chronic Potential Health Effects: Chronic exposure to cyanides has been reported to cause Central Nervous System effects such as insomnia, loss of memory, and tremors. Chronic ingestion of cyanides may also affect the thyroid gland and cause Endemic Cretinism (a goitergenic effect or enlargement of the thyroid gland).

## Section 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.

**Special Remarks on the Products of Biodegradation:** Not available.

## Section 13: Disposal Considerations

**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

## Section 14: Transport Information

**DOT Classification:**

CLASS 6.1: Poisonous material. Class 8: Corrosive material

**Identification:** : Cyanogen Bromide UNNA: 1889 PG: I

**Special Provisions for Transport:** Marine Pollutant

## Section 15: Other Regulatory Information

**Federal and State Regulations:**

Connecticut hazardous material survey.: Cyanogen bromide Illinois chemical safety act: Cyanogen bromide New York release reporting list: Cyanogen bromide Rhode Island RTK hazardous substances: Cyanogen bromide Pennsylvania RTK: Cyanogen bromide Florida: Cyanogen bromide Massachusetts RTK: Cyanogen bromide Massachusetts spill list: Cyanogen bromide New Jersey: Cyanogen bromide New Jersey spill list: Cyanogen bromide Louisiana RTK reporting list: Cyanogen bromide Louisiana spill reporting: Cyanogen bromide TSCA 8(b) inventory: Cyanogen bromide TSCA 4(a) proposed test rules: Cyanogen bromide SARA 302/304/311/312 extremely hazardous substances: Cyanogen bromide CERCLA: Hazardous substances.: Cyanogen bromide: 1000 lbs. (453.6 kg)

**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.

**Other Classifications:**

**WHMIS (Canada):**

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

**DSCL (EEC):**

R26/27/28- Very toxic by inhalation, in contact with skin and if swallowed. R34- Causes burns. S18- Handle and open container with care. S24/25- Avoid contact with skin and eyes. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.

**HMIS (U.S.A.):**

**Health Hazard:** 3

**Fire Hazard:** 0

**Reactivity:** 0

**Personal Protection:** j

**National Fire Protection Association (U.S.A.):**

**Health:** 4

**Flammability:** 0

**Reactivity:** 1

**Specific hazard:**

**Protective Equipment:**

Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

## Section 16: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

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