



Material Safety Data Sheet

NFPA 	HMIS <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #00FFFF;">Health Hazard</td> <td style="text-align: center; font-weight: bold;">3</td> </tr> <tr> <td style="background-color: #FFCCCC;">Fire Hazard</td> <td style="text-align: center; font-weight: bold;">0</td> </tr> <tr> <td style="background-color: #FFFF00;">Reactivity</td> <td style="text-align: center; font-weight: bold;">0</td> </tr> </table>	Health Hazard	3	Fire Hazard	0	Reactivity	0	Personal Protective Equipment  See Section 15.
Health Hazard	3							
Fire Hazard	0							
Reactivity	0							

Section 1. Chemical Product and Company Identification		Page Number: 1
Common Name/Trade Name	Cyanogen bromide	Catalog Number(s). C1453
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	CAS# 506-68-3
Commercial Name(s)	Campilit	RTECS GT2100000
Synonym	Bromine Cyanide; Bromocyan; Cyanogen monobromide	TSCA TSCA 8(b) inventory: Cyanogen bromide
Chemical Name	Cyanogen Bromide	CI# Not available.
Chemical Family	Not available.	IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 CALL (310) 516-8000
Chemical Formula	CBrN	
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	

Section 2. Composition and Information on Ingredients					
Name	CAS #	Exposure Limits			% by Weight
		TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	
1) 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	<p>CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available.</p> <p>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.</p>
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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
Molecular Weight	105.92 g/mole	Taste	Bitter.
pH (1% soln/water)	Not available.	Color	White. Colorless.
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.		

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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/m3/10 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).

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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.
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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
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

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)
California Proposition 65 Warnings	
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.

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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.

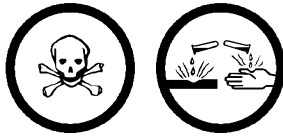
HMIS (U.S.A.)

Health Hazard	3
Fire Hazard	0
Reactivity	0
Personal Protection	j

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

Health  Flammability
Reactivity
Specific hazard

WHMIS (Canada) (Pictograms)



DSCL (Europe) (Pictograms)



TDG (Canada) (Pictograms)



ADR (Europe) (Pictograms)



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**MSDS Code** C5080**References** Not available.**Other Special Considerations** Not available.

Validated by Sonia Owen on 8/11/2006.

Verified by Sonia Owen.

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CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.