



MATERIAL SAFETY DATA SHEET



SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: CSM-2

April 2, 2014

Vishay Measurements Group, Inc.
Post Office Box 27777
Raleigh, NC 27611

919-365-3800

CHEMTREC 1-800-424-9300 (U.S.)
703-527-3887 (Outside U.S.)

NOTE: CHEMTREC numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

SECTION 2: HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

CAS NUMBER	CHEMICAL IDENTITY	%
106-94-5	N-Propyl Bromide	90-100
71-23-8	Aliphatic Alcohol	0-5
106-88-7	Butylene Oxide(1,2 Epoxybutane)	0-1
124-38-9	Carbon Dioxide (as propellant)	<5

SECTION 3: HEALTH HAZARD DATA

Routes of Entry:

Inhalation: Yes **Skin:** No **Ingestion:** Accidental

Health Hazards (Acute and Chronic): Harmful by inhalation.

Carcinogenicity:
NTP: No
IARC Monographs: No
OSHA Regulated: No

Signs and Symptoms of Exposure:

INHALATION: Vapors and aerosols may irritate the respiratory system. Harmful by inhalation. Inhalation may cause central nervous system effects, irregular pulse and systemic effects. Doses which cause anesthetic-like effects may also cause adverse effects in liver, lung, and kidney.

EYE CONTACT: Contact with eyes may cause mild irritation.

SKIN CONTACT: Mildly irritating to the skin. Prolonged or repeated contact will result in defatting leading to cracking and dermatitis.

INGESTION: Will cause burning sensation to mouth, throat and digestive tract. Ingestion may cause central nervous system effects, irregular pulse and systemic effects.

Conditions Generally Aggravated by Exposure: None listed.

SECTION 4: EMERGENCY AND FIRST AID PROCEDURES
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INHALATION: Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, a trained person may administer oxygen. Seek immediate medical attention.

EYE CONTACT: Irrigate with flowing water immediately and continuously for at least 15 minutes. Consult medical personnel.

SKIN CONTACT: Remove contaminated clothing immediately and drench skin with water or wash off in flowing water or shower. Wash affected area with soap and water. Seek medical advice. Contaminated clothing should be laundered before reuse.

INGESTION: Seek medical attention immediately. Do not induce vomiting unless instructed to do so by medical personnel. Rinse mouth with water but do not swallow. Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Treat by observation and supportive measure as indicated by the patient's condition. No specific antidotes.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA
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Flash Point (Method Used): NONE (Tag Closed Cup)

Flammable limits: LEL: 3.8% UEL: 9.7%

Extinguishing Media: Water fog or fine spray, carbon dioxide, dry chemical, foam, alcohol resistant foams, (ATC Type) are preferred if available. General purpose synthetic foams (including AFFF) or protein foams may function but much less effectively.

Special Firefighting Procedures: Keep people away. Isolate fire area and deny unnecessary entry. Take precautions to protect personnel from exposure. Wear positive pressure self-contained breathing apparatus (SCBA). Vapors are heavier than air and may travel considerable distances. Take care on the use of direct water stream, which may spread fire. In the event of an adjacent fire, cool containers with water spray.

Unusual Fire and Explosion Hazards: In fires, toxic and corrosive gases may be released. Hazardous combustion products may include and are not limited to: carbon monoxide, carbon dioxide, hydrogen halides.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled: Wear suitable protective clothing including eye/face protection and gloves and wear suitable respiratory protection. Evacuate the area and keep personnel upwind. Keep out of sewers. Contain and absorb with material such as earth, absorbent granules or sand. Remove contaminated material to plastic container for disposal.

SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

Respiratory Protection: Wear approved respirator if exposure is likely to exceed TLV. In poorly ventilated areas or confined spaces, use an airline respirator or self-contained breathing apparatus.

Ventilation: Good general ventilation should be sufficient for most conditions.

Protective Gloves: Use neoprene or nitrile gloves. Do not use natural rubber products. EPA recommended gloves: NORTH-Silver Shield, NORTH Viton F123 and Ansell Edmont 4H 87-4000.

Eye Protection: Use chemical goggles or faceshield.

Other Protective Clothing or Equipment: Use neoprene or nitrile boots, aprons as needed to prevent contact. Do not use natural rubber products.

Work / Hygienic Practices: Provide eyewash stations. When using, do not eat drink or smoke.

SECTION 8: HANDLING AND STORAGE

Precautions to be taken in handling and storing: Store in original container and tightly closed when not in use. Store in a cool, well-ventilated place. Do not store in direct sunlight. Avoid overheating or freezing. Avoid open flames, sparks and heat sources.

Other Precautions: Since empty containers may retain product residues (vapor, liquid, solid) all label precautions must be observed.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES
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Boiling Point:	156°F (69°C)
Vapor Pressure (mmHg):	>143 mmHg @ (77°F)
Vapor Density (Air = 1):	4.3
Specific Gravity (H₂O = 1):	1.27
Melting Point:	-166°F (-110°C)
Evaporation Rate (BuAc = 1):	<1
% Volatile By Weight:	100%
Solubility in Water:	2.4 (g/L @ 77°F)

Appearance and Odor: Clear colorless liquid with a slight sweet smell

SECTION 10: STABILITY AND REACTIVITY DATA
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Stability: Stable under recommended storage conditions.

Conditions to Avoid: Avoid high temperatures, open flame or other high energy heat sources.

Incompatibility (Materials to Avoid): Strong oxidizing agents. Product is compatible with most metals except calcium, finely powdered aluminum and alkali metals.

Hazardous Decomposition or By-products: Does not normally decompose. Decomposition will normally only occur if product is involved in a fire.

Hazardous Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION
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N-Propyl Bromide

OSHA PEL:	25 ppm
ACGIH TLV:	Not established
OTHER:	ORAL (RATS) LD ₅₀ 4260 mg/kg INHALATION (RATS) LC ₅₀ 253,000 mg/m ³ (0.5 hrs)

Aliphatic Alcohol

OSHA PEL:	200 ppm
ACGIH TLV:	200 ppm
OTHER:	250 ppm (STEL)

CSM-2 MSDS (Continued)

Butylene Oxide (1,2 Epoxybutane)

OSHA PEL: Not established
ACGIH TLV: Not established
OTHER: ORAL (RATS) LD₅₀ 500 mg/kg
DERMAL (RABBIT) LD₅₀ 2100 ul/kg

Carbon Dioxide

OSHA PEL: 10000 ppm
ACGIH TLV: 18000 mg/m³
OTHER: 30000 STEL

SECTION 12: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose of in accordance with local, state, and federal environmental regulations.

SECTION 13: TRANSPORTATION INFORMATION

SHIPPING NAME	CLASS	UN NUMBER
Aerosol; Non-flammable	2.2	1950

SECTION 14: REGULATORY INFORMATION

SECTION 313 SUPPLIER NOTIFICATION:

This product contains a toxic chemical or chemicals (as listed below) subject to the reporting requirements of Section 313 Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

CAS NUMBER	CHEMICAL NAME	% BY WEIGHT
106-88-7	Butylene Oxide (1,2 Epoxybutane)	0-1

TSCA NOTIFICATION:

All components of this product are listed in the Toxic Substance Control Act Chemical Substance Inventory (TSCA).

SECTION 15: OTHER INFORMATION

To the best of our knowledge, the information provided above meets the requirements of the United States Occupational Safety and Health Act and regulations established under 29 CFR 1910.1200 (g)(2)(c)(1)-(4) for a mixture of hazardous chemicals which has not been tested as a whole. The data provided on this Material Safety Data Sheet is from manufacturers of the original components. Micro-Measurements specifically disclaims any and all form of liability and/or responsibility for the application of this product.