



MATERIAL SAFETY DATA SHEET



SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: PL-1/PC-1C

April 14, 2010

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	%
25068-38-6	Bisphenol A Diglycidyl Ether	>86.1
2426-08-6	N-Butyl Glycidyl Ether	6.6
3101-60-8	P-Tertbutylphenyl Glycidyl Ether	0.5-4.9
122-60-1	Phenyl Glycidyl Ether	2.4
106-89-8	Epichlorohydrin	2-3 ppm

NOTE: CAS # 25068-38-6 is an epoxy resin produced by the condensation reaction of epichlorohydrin and bisphenol A. The epichlorohydrin is consumed in the process and the residual levels are controlled to 2-3 ppm maximum.

SECTION 3: HEALTH HAZARD DATA

Routes of Entry:

Inhalation: Yes Skin: Yes Ingestion: Yes

Health Hazards (Acute and Chronic): Epichlorohydrin has been reported to produce cancer in laboratory animals and epidemiological studies present "weak" evidence of cancer risk to humans.

Carcinogenicity:	NTP:	See Note
	IARC Monographs:	See Note
	OSHA Regulated:	NA

NOTE: International Agency for Research on Cancer (IARC) has classified epichlorohydrin as a possible human carcinogen (IARC GROUP 2A) based on the following conclusions: Human Evidence - Inadequate; Animal Evidence - Sufficient. Epichlorohydrin has also been classified by National Toxicology Program (NTP) as an anticipated carcinogen (NTP GROUP 2B) based on sufficient evidence of carcinogenicity from studies in experimental animals.

Signs and Symptoms of Exposure:

INHALATION: Because of its low volatility, significant exposure by inhalation is unlikely under most ambient temperatures. Inhalation may cause irritation of the nose throat and respiratory tract. N-Butyl Glycidyl Ether may cause central nervous system depression. Heating can generate vapors that could cause headaches, nausea, dizziness, and respiratory irritation if inhaled.

EYE CONTACT: May cause eye irritation.

SKIN CONTACT: Mildly irritating to the skin. Prolonged or repeated liquid contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis. May cause skin sensitization.

INGESTION: Slightly toxic. May produce central nervous system depression.

Conditions Generally Aggravated by Exposure: Pre-existing eye, skin, and respiratory disorders may be aggravated by exposure to this product. Pre-existing skin or respiratory allergies may increase the chance of developing increased allergy symptoms.

SECTION 4: EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if breathing has stopped. Get medical attention.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention.

SKIN CONTACT: Remove contaminated clothing and shoes and wipe excess from skin. Flush skin with water and follow by washing with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until it has been thoroughly cleaned. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed.

INGESTION: Do NOT induce vomiting unless directed to do so by medical personnel. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs. Get medical attention.

NOTE TO PHYSICIAN: If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): 164°F (73.3°C) Setaflash

Flammable limits: LEL: NA UEL: NA

Extinguishing Media: Use carbon dioxide or dry chemical for small fires; aqueous foam or water fog/spray for large fires.

Special Firefighting Procedures: Remove all ignition sources. Wear self-contained breathing apparatus and complete personal protective equipment when entering confined areas where potential for exposure to vapors or products of combustion exists. Cool fire exposed containers with water.

Unusual Fire and Explosion Hazards: Closed containers may rupture when exposed to extreme heat.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled: Dike spill. Eliminate potential sources of ignition. Wear appropriate respirator and other protective clothing. Shut off source of leak if it is safe to do so. Absorb with inert material and collect for disposal. Flush area with water. Prevent washings from entering waterways.

SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

Respiratory Protection: Avoid breathing vapors which may be produced under some conditions such as heating or applications of uncured material in large surface areas. Avoid breathing aerosols and mists which may be formed by various methods of application. If exposure exceeds occupational exposure limits use a NIOSH approved respirator to prevent overexposure.

Ventilation: Good general mechanical ventilation and local exhaust are recommended.

Protective Gloves: Chemical resistant gloves.

Eye Protection: Chemical splash goggles.

Other Protective Clothing or Equipment: For operations where contact can occur, coveralls, apron, and rubber foot covering are recommended. A safety shower and eye wash facility should be available.

Work / Hygienic Practices: Use good industrial hygiene practices. Wash hands using soap and water after use and before eating, drinking or smoking. Wash contaminated clothing before re-use. Leather articles, including shoes, can not be decontaminated and should be destroyed.

SECTION 8: HANDLING AND STORAGE

Precautions to be taken in handling and storing: Keep away from heat, sparks, flame and other sources of ignition. Vapors may accumulate and travel to distant ignition sources. Keep containers closed when not in use. Use with adequate ventilation.

Other Precautions: Empty containers may contain explosive vapors. Do not cut, drill, grind, weld, or perform similar operations on or near containers. Do not pressurize drum containers to empty them. Bond and ground transfer equipment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	NA
Vapor Pressure (mmHg):	1
Vapor Density (Air = 1):	>1
Specific Gravity (H ₂ O = 1):	1.14
Melting Point:	NA
Evaporation Rate (BuAc = 1):	<1
Volatile Organic Compounds:	<1%
Solubility in Water:	Partially soluble

Appearance and Odor: Clear light colored mobile liquid with mild odor.

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: Stable.

Conditions to Avoid: Avoid heat, flame, and contact with strong oxidizing agents.

Incompatibility (Materials to Avoid): Can react vigorously with strong Lewis or mineral acids and strong mineral and organic bases--especially primary and secondary aliphatic amines.

Hazardous Decomposition or By-products: Carbon monoxide, aldehydes, and acids may be formed during combustion. Reaction with some curing agents may produce considerable heat.

Hazardous Polymerization: Will not occur under normal conditions.

SECTION 11: TOXICOLOGICAL INFORMATION
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Bisphenol A Diglycidyl Ether

OSHA PEL:	Not established
ACGIH TLV:	Not established
OTHER:	ORAL (RAT) LD ₅₀ 11.4 g/kg ORAL (MOUSE) LD ₅₀ 15.6 g/kg SKIN (RABBIT) LD ₅₀ >20 ml/kg

N-Butyl Glycidyl Ether

OSHA PEL:	25 ppm (TWA)
ACGIH TLV:	25 ppm (TWA)
OTHER:	ORAL (MOUSE) LD ₅₀ 1.53 g/kg ORAL (RAT) LD ₅₀ 2.26 g/kg SKIN (RABBIT) LD ₅₀ 788 mg/kg INHALATION (RAT) LC ₅₀ 1030 ppm (8 Hour)

P-Tertbutylphenyl Glycidyl Ether

OSHA PEL:	Not established
ACGIH TLV:	Not established
OTHER:	Not established

Phenyl Glycidyl Ether

OSHA PEL:	10 ppm
ACGIH TLV:	1 ppm
OTHER:	ORAL (RAT) LD ₅₀ 3850 mg/kg ORAL (MUSKRAT) LD ₅₀ 1400 mg/kg SKIN (RABBIT) LD ₅₀ 1500 mg/kg

Epichlorohydrin

OSHA PEL:	2 ppm (SKIN)
ACGIH TLV:	0.5 ppm (SKIN)
OTHER:	Potential contribution to overall exposure is possible by skin absorption.

SECTION 12: DISPOSAL CONSIDERATIONS
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Waste Disposal Method: Dispose of in accordance with local, state, and federal environmental regulations.

SECTION 13: TRANSPORTATION INFORMATION

SHIPPING NAME	CLASS	PACKING GROUP	UN NUMBER
Toxic Liquid, Organic, N.O.S. (Bisphenol A Diglycidyl Ether)	6.1	III	2810

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
106-89-8	Epichlorohydrin	2-3 ppm

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.