



MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: PC-1/PC-8

February 8, 2007

Vishay Micro-Measurements
Post Office Box 27777
Raleigh, NC 27611

MSDS # MGP518J

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 | % |
|-------------|--|--------|
| 25036-25-3* | Epichlorohydrin/Bisphenol A Resin | 83.3 |
| 7429-90-5 | Aluminum, Metallic Powder | 9.3 |
| 26523-14-8 | Adipic Acid-Ethylene Glycol Propylene Glycol Polymer | 4.6 |
| 122-60-1 | Phenyl Glycidyl Ether | 2.8 |
| 106-89-8 | Epichlorohydrin | <50ppm |

*NOTE: CAS # 25036-25-3 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): Depending on the route, frequency, and duration of exposure, the following organs and/or systems may be adversely effected: the eyes, skin, and the immune system (allergic reactions).

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| Carcinogenicity: | NTP: | Yes* |
| | IARC Monographs: | Yes* |
| | OSHA Regulated: | NA |

*NOTE: This product may contain trace (<50ppm) residual quantities of epichlorohydrin (ECH), CAS No. 106-89-8. Epichlorohydrin has been reported to produce cancer in laboratory animals and to produce mutagenic changes in bacteria and cultured human cells. It has been classified by the International Agency for Research on Cancer (IARC) as a possible human carcinogen (IARC GROUP 2A) based on the following conclusions: Human Evidence-Inadequate; Animal Evidence-Sufficient. It has been classified as an anticipated human carcinogen by the National Toxicology Program (NTP). Phenyl Glycidyl Ether is a cancer suspect agent. Phenyl Glycidyl Ether has been reported to produce nasal cancer in a life-time rat inhalation study at 12ppm but not at 1ppm. It has been classified by the International Agency for Research on Cancer (IARC) as a 2B carcinogen based on the following conclusions: Human Evidence-Limited; Animal Evidence-Sufficient.

Signs and Symptoms of Exposure:

INHALATION: Under normal conditions of use, no adverse effects are expected. Overexposure to Phenyl Glycidyl Ether may cause irritation to the nose, throat and respiratory tract and possible central nervous system depression.

EYE CONTACT: Contact with the eye tissue may cause moderate to severe irritation.

SKIN CONTACT: Prolonged or repeated contact can cause defatting and drying of the skin which may result in skin irritation and dermatitis. Contact with the skin can lead to the development of hypersensitivity in some individuals.

INGESTION: Product is moderately toxic and may be harmful if swallowed. May cause central nervous system depression.

Conditions Generally Aggravated by Exposure: Some of the components in this product may also aggravate existing medical conditions involving the skin, the immune system or specific chemical allergies. Consequently, certain individuals may be more susceptible to the possible effects of overexposure and should take appropriate precautions when handling this product.

SECTION 4: EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Exposure by inhalation does not normally produce adverse effects. However, if overexposure occurs, remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Seek medical advice.

EYE CONTACT: Flush eyes with a steady stream of water for at least 15 minutes. Lift upper and lower eyelids frequently. Get prompt medical attention.

SKIN CONTACT: Remove contaminated clothing and shoes. Wash affected area with mild soap and plenty of water. If irritation develops, consult a physician. Wash contaminated clothing before reuse. Destroy or thoroughly clean shoes before reusing.

INGESTION: Call a poison control center, emergency room, or physician. Unless advised otherwise, induce vomiting by giving either Syrup of Ipecac followed by two glasses of water or by sticking finger down throat.

NOTE TO PHYSICIAN: No specific antidote is known. Therapy is directed at preventing absorption, administering to the symptoms as they occur, and providing supportive therapy.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): >200°F (93°C) Setafash closed cup

Flammable limits: LEL: NA UEL: NA

Extinguishing Media: For small fires use foam, carbon dioxide, dry chemical, or water spray. For large fires use foam, water spray or fog.

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.

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: Stop discharge and contain spill or contaminated material using a dike or barrier. Place contaminated material in a suitable container for further handling and disposal. Appropriate safety measures and personal protective equipment should be used. Do not flush to sewer, stream, or other bodies of water.

SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

Respiratory Protection: Where exposure exceeds established airborne limits, use a NIOSH approved respirator, or a self-contained breathing apparatus, or a supplied air respirator as necessary to control exposure.

Ventilation: Maintain airborne concentrations below the established exposure limits. General ventilation may be acceptable, however, enclosure and local exhaust may be required to control exposure when generating vapors or mists.

Protective Gloves: Wear chemical resistant gloves.

Eye Protection: Chemical splash goggles or safety glasses with sideshields.

Other Protective Clothing or Equipment: Wear protective clothing as needed to prevent skin contact.

Work / Hygienic Practices: Wash thoroughly after handling. Contaminated clothing and shoes should be thoroughly cleaned before reuse.

SECTION 8: HANDLING AND STORAGE

Precautions to be taken in handling and storing: Store in cool, dry, well ventilated area. Do not store above 100°F (38°C). Avoid contact with eyes, skin, and clothing.

Other Precautions: Heating can generate vapors. Use appropriate ventilation or approved respirators as necessary.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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| Boiling Point: | 395°F (201°C) |
| Vapor Pressure (mmHg): | <1 |
| Vapor Density (Air = 1): | >1 |
| Specific Gravity (H₂O = 1): | 1.11 |
| Melting Point: | NA |
| Evaporation Rate (BuAc = 1): | NA |
| Volatile Organic Compounds: | None |
| Solubility in Water: | Slightly soluble |

Appearance and Odor: Silver liquid; mild odor.

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: Stable under normal conditions and use.

Conditions to Avoid: Excessive heat.

Incompatibility (Materials to Avoid): Contamination with strong acids, bases, amines, mercaptans, oxidizing agents and ammonia.

Hazardous Decomposition or By-products: If heated to high temperatures this product may emit phenolics, smoke, soot, carbon dioxide, carbon monoxide, and metallic oxides.

Hazardous Polymerization: Will not occur.

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| SECTION 11: TOXICOLOGICAL INFORMATION |
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Epichlorohydrin/Bisphenol A Resin

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|------------|-----------------|
| OSHA PEL: | Not established |
| ACGIH TLV: | Not established |
| OTHER: | None |

Aluminum, Metallic, Powder

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|------------|--|
| OSHA PEL: | 5 mg/m ³ (Respirable Fraction) |
| ACGIH TLV: | 10 mg/m ³ (Total Particulate) |
| OTHER: | Due to this product's physical composition, the release or generation of dust is not expected to occur under normal conditions of use. |

Glycol Adipate Ester

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

Phenyl Glycidyl Ether

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|------------|--|
| OSHA PEL: | 1 ppm TWA |
| ACGIH TLV: | 1 ppm TWA |
| OTHER: | ORAL (RAT) LD ₅₀ 3850 mg/kg ORAL (MOUSE) LD ₅₀ 1400 mg/kg SKIN (RAT) LD ₅₀ 2160 mg/kg SKIN (MOUSE) LD ₅₀ 2990 mg/kg INHALATION (RAT) LC ₅₀ >100 ppm (8 hr) INHALATION (MOUSE) LC ₅₀ >100 ppm (4 hr) |

Epichlorohydrin

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

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

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| SECTION 13: TRANSPORTATION INFORMATION |
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| SHIPPING NAME | CLASS | PACKING GROUP | UN NUMBER |
|--|-------|---------------|-----------|
| Toxic Liquid, Organic, N.O.S. (Epichlorohydrin/Bisphenol Resin) | 6.1 | III | 3287 |

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| SECTION 14: REGULATORY INFORMATION |
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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 |
|------------|-----------------|-------------|
| 7429-90-5 | Aluminum Powder | 9.3 |
| 106-89-8 | Epichlorohydrin | <50 ppm |

TSCA NOTIFICATION:

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

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| SECTION 15: OTHER INFORMATION |
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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. Vishay Micro-Measurements specifically disclaims any and all form of liability and/or responsibility for the application of this product.