

# SAFETY DATA SHEET

Revision: 1.0 Date: 21.10.2015


**ACCORDING TO OSHA HCS (29 CFR 1910.1200)**

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## SECTION 1: IDENTIFICATION

<b>1.1 Product identifier</b>	
Product Name	PC-10C
Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture
<b>1.2 Relevant identified uses of the substance or mixture and uses advised against</b>	
Identified Use(s)	Photostress® measurements.
Uses Advised Against	None known.
<b>1.3 Details of the supplier of the safety data sheet</b>	
Company Identification	VISHAY MEASUREMENTS GROUP, INC. Post Office Box 27777 Raleigh, NC 27611 USA
Telephone	919-365-3800
Fax	919-365-3945
E-Mail (competent person)	mm.us@vishaypg.com
<b>1.4 Emergency telephone number</b>	1-800-424-9300 CHEMTREC

## SECTION 2: HAZARDS IDENTIFICATION

<b>2.1 Classification of the substance or mixture</b>	
<b>2.1.1 GHS Classification</b>	Acute Tox. 4; H302 Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Muta. 2; H341 Carc. 2; H351 STOT SE 2; H371 Aquatic Chronic 2; H411
<b>2.2 Label elements</b>	
Product Name	GHS Classification PC-10C
Hazard Pictogram(s)	
Signal Word(s)	Warning
Contains:	Resorcinol Diglycidyl Ether, Reaction product: Bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700), P-Tert-butylphenyl 1-(2,3-epoxy)propyl ether and Resorcinol.
Hazard Statement(s)	H302: Harmful if swallowed. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H341: Suspected of causing genetic defects. H351: Suspected of causing cancer. H371: May cause damage to organs. H411: Toxic to aquatic life with long lasting effects.

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Precautionary Statement(s)

P201: Obtain special instructions before use.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P302+P352: IF ON SKIN: Wash with plenty of water.  
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P309+P311: IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

OSHA Defined Hazards

None.

2.3 Other hazards

None.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances Not applicable

3.2 Mixtures Substances in preparations / mixtures

GHS Classification

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard classification
Resorcinol Diglycidyl Ether	47.8	101-90-6	202-987-5	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Muta. 2; H341 Carc. 2; H351 Aquatic Chronic 3; H412
Reaction product: Bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight $\leq$ 700)	43	25068-38-6	500-033-5	Skin Irrit. 2; H315 (SCL: $\geq$ 5%) Skin Sens. 1; H317 Eye Irrit. 2; H319 (SCL: $\geq$ 5%) Aquatic Chronic 2; H411
Tert-butylphenyl 1-(2,3-epoxy)propyl ether	0.4 – 4.8	3101-60-8	221-453-2	Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Chronic 2; H411
Linseed oil, epoxidised	2.4	8016-11-3	232-401-3	Not classified
Resorcinol	2.0	108-46-3	203-585-2	Acute Tox. 4; H302 Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 STOT SE 1; H370 Aquatic Acute 1; H400

For full text of H/P Statements see section 16.

## SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Self-protection of the first aider

Do not breathe vapour. Wear suitable protective clothing. Wear suitable respiratory protective equipment if exposure to high levels of material are likely. Do not use mouth-to-mouth resuscitation. Avoid all contact.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Apply artificial respiration if breathing has ceased or shows signs of

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Skin Contact	failing. IF exposed or concerned: Get medical advice/attention. IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned. If skin irritation or rash occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention.
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if eye irritation develops or persists.
Ingestion	IF SWALLOWED: Rinse mouth. Do not induce vomiting. Do not give anything by mouth to an unconscious person. Call a POISON CENTER/doctor if you feel unwell. IF exposed or concerned: Get medical advice/attention.
<b>4.2 Most important symptoms and effects, both acute and delayed</b>	Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Suspected of causing genetic defects. Suspected of causing cancer. May cause damage to organs.
<b>4.3 Indication of any immediate medical attention and special treatment needed</b>	Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

<b>5.1 Extinguishing media</b>	
Suitable Extinguishing media	As appropriate for surrounding fire. Extinguish with carbon dioxide, dry chemical, foam or waterspray.
Unsuitable extinguishing media	Do not use water jet. Direct water jet may spread the fire.
<b>5.2 Special hazards arising from the substance or mixture</b>	May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide and Aldehydes. Sealed containers may rupture explosively if hot.
<b>5.3 Advice for fire-fighters</b>	Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

<b>6.1 Personal precautions, protective equipment and emergency procedures</b>	Ensure adequate ventilation. Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Use personal protective equipment as required. See Section: 8. Do not breathe vapour. Avoid contact with skin, eyes or clothing.
<b>6.2 Environmental precautions</b>	Avoid release to the environment. Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.
<b>6.3 Methods and material for containment and cleaning up</b>	Ensure suitable personal protection during removal of spillages. Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a lidded container for disposal or recovery. Ventilate the area and wash spill site after material pick-up is complete. This material and its container must be disposed of as hazardous waste.
<b>6.4 Reference to other sections</b>	See Section: 8, 13

## SECTION 7: HANDLING AND STORAGE

<b>7.1 Precautions for safe handling</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with skin, eyes or clothing. Do not breathe vapour. Ensure adequate ventilation. Use personal protective equipment as required. See Section: 8. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.
<b>7.2 Conditions for safe storage, including any incompatibilities</b>	Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, sources of ignition and direct sunlight.
Storage temperature	Ambient.
Storage life	Stable under normal conditions.
Incompatible materials	Keep away from: Acids, strong bases, Oxidizing agents, mercaptans and unintended contact with amines.
<b>7.3 Specific end use(s)</b>	See Section: 1.2

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### 8.1.1 Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note
Resorcinol	108-46-3	10	45	20*	90*	NIOSH
		10	-	20	-	ACGIH

Note: NIOSH RELs/ ACGIH TLVs. OSHA PELs have not been established for any of the substances in Section 3.

\*15 minute average value.

Occupational exposure limits have not been established for the other components listed in Section 3.

#### 8.1.2 Biological limit value

Not established.

### 8.2 Exposure controls

#### 8.2.1 Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Guarantee that the eye flushing systems and safety showers are located close to the working place.

#### 8.2.2 Individual protection measures, such as personal protective equipment (PPE)

General hygiene measures for the handling of chemicals are applicable. Avoid contact with skin, eyes or clothing. Do not breathe vapour. Wash hands before breaks and after work. Keep work clothes separately. Contaminated clothing should be thoroughly cleaned. Contaminated leather articles should be discarded (e.g. shoes). Do not eat, drink or smoke at the work place.

Eye/ face protection



Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection.

Skin protection



Hand protection: Wear impervious gloves. Gloves should be changed regularly to avoid permeation problems. The gloves type used must be chosen based on the work activity and duration as well as concentration/quantity of material being handled. Recommended: Neoprene.

Body protection: Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection



Use only in well-ventilated areas. In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment. Use NIOSH approved respiratory protection.

Thermal hazards

Not applicable.

#### 8.2.3 Environmental Exposure Controls

Avoid release to the environment.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance

Clear pale yellow liquid

Odour

Mild odour

Odour threshold

Not available.

pH

Not established.

Melting point/freezing point

Not available.

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Initial boiling point and boiling range	> 204 °C (400 °F)
Flash point	110 °C [Closed cup]
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable - Liquid.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	< 1 mm Hg
Vapour density	> 1 (Air = 1)
Relative density	1.16 (H <sub>2</sub> O = 1)
Solubility(ies)	Insoluble in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not applicable.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

**9.2 Other information** None.

### SECTION 10: STABILITY AND REACTIVITY

<b>10.1 Reactivity</b>	Stable under normal conditions.
<b>10.2 Chemical stability</b>	Stable under normal conditions.
<b>10.3 Possibility of hazardous reactions</b>	Hazardous Polymerization: No hazard expected under normal conditions of use.
<b>10.4 Conditions to avoid</b>	Keep away from heat, sources of ignition and direct sunlight. Keep away from: Exposure to amines or amine derivatives.
<b>10.5 Incompatible materials</b>	Keep away from: Acids, strong bases, Oxidizing agents, mercaptans and unintended contact with amines.
<b>10.6 Hazardous decomposition product(s)</b>	May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide and Aldehydes.

### SECTION 11: TOXICOLOGICAL INFORMATION

<b>11.1 Information on toxicological effects (Substances in preparations / mixtures)</b>	
<b>Acute toxicity</b>	
Ingestion	Acute Tox. 4: Harmful if swallowed. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 1004 mg/kg bw/day.
Inhalation	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 20.0 mg/l.
Skin Contact	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
<b>Skin corrosion/irritation</b>	Skin Irrit. 2: Causes skin irritation.
<b>Serious eye damage/irritation</b>	Eye Irrit. 2: Causes serious eye irritation.
<b>Respiratory or skin sensitization</b>	Skin Sens. 1: May cause an allergic skin reaction.
<b>Germ cell mutagenicity</b>	Muta. 2: Suspected of causing genetic defects.
<b>Carcinogenicity</b>	Carc. 2: Suspected of causing cancer.
<b>Reproductive toxicity</b>	Based upon the available data, the classification criteria are not met.
<b>STOT - single exposure</b>	STOT SE 2: May cause damage to organs.
<b>STOT - repeated exposure</b>	Based upon the available data, the classification criteria are not met.
<b>Aspiration hazard</b>	Based upon the available data, the classification criteria are not met.
<b>11.2 Other information</b>	
<b>Information on likely routes of exposure</b>	
Inhalation	Yes
Ingestion	Accidental
Skin Contact	Yes

#### Further Carcinogenicity Information

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NTP Report on Carcinogens

Resorcinol diglycidyl ether (CAS# 101-90-6): Reasonably anticipated to be a human carcinogen.

IARC Monographs

Resorcinol diglycidyl ether (CAS# 101-90-6): Group 2B – Possibly carcinogenic to humans.

Regulated as a Carcinogen by OSHA

None of the components are listed.

### SECTION 12: ECOLOGICAL INFORMATION

<b>12.1 Ecotoxicity</b>	Aquatic Chronic 2: Toxic to aquatic life with long lasting effects. Estimated Mixture LC50 > 1 ≤ 10 mg/l (Fish)
<b>12.2 Persistence and degradability</b>	Part of the components are poorly biodegradable.
<b>12.3 Bioaccumulative potential</b>	The product has low potential for bioaccumulation.
<b>12.4 Mobility in soil</b>	The product is predicted to have low mobility in soil (Insoluble in water).
<b>12.5 Other adverse effects</b>	Not classified as PBT or vPvB. None of the substances in this product fulfil the criteria for being regarded as a PBT or vPvB substance.

### SECTION 13: DISPOSAL CONSIDERATIONS

<b>13.1 Waste treatment methods</b>	Dispose of this material and its container as hazardous waste. Containers of this material may be hazardous when empty since they retain product residue. Dispose of wastes in an approved waste disposal facility. Dispose of contents in accordance with local, state or national legislation.
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### SECTION 14: TRANSPORT INFORMATION

	<b>ADR/RID / IMDG / IATA</b>
<b>14.1 UN number</b>	UN 3082
<b>14.2 UN proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (Reaction product: Bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) and Tert-butylphenyl 1-(2,3-epoxy)propyl ether)
<b>14.3 Transport hazard class(es)</b>	9
<b>14.4 Packing group</b>	III
<b>14.5 Environmental hazards</b>	Classified as a Marine Pollutant./ Environmentally hazardous substance
<b>14.6 Special precautions for user</b>	See Section: 2
<b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.
<b>14.8 Additional Information</b>	None.

### SECTION 15: REGULATORY INFORMATION

<b>15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
<b>15.1.1 U.S. Federal Regulations</b>	
TSCA Inventory Status	All components of this product are listed in the Toxic Substance Control Act Chemical Substance Inventory (TSCA).
<b>15.1.2 US State Regulations</b>	
California State Proposition 65 List	Resorcinol diglycidyl ether (CAS# 101-90-6): No Significant Risk Level: 0.4 µg/day.
<b>15.1.3 European regulations</b>	
Authorisations and/or Restrictions On Use Substance(s) of Very High Concern (SVHCs)	None. None.
Community Rolling Action Plan (CoRAP)	Reaction product: Bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) (CAS# 25068-38-6): Substance identified for evaluation in 2015. Resorcinol (CAS# 108-46-3): Substance identified for evaluation in 2016.
Wassergefährdungsklasse (Germany)	Water hazard class: 2
<b>15.2 Chemical Safety Assessment</b>	Not available.

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## SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

Version 1.0  
Date of Preparation 21.10.15

**References:** Existing Safety Data Sheet (SDS), Harmonised Classification(s) for Resorcinol diglycidyl ether (CAS# 101-90-6), Reaction product: Bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight  $\leq$  700) (CAS# 25068-38-6) and Resorcinol (CAS# 108-46-3). Existing ECHA registration(s) for Reaction product: Bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight  $\leq$  700) (CAS# 25068-38-6), Tert-butylphenyl 1-(2,3-epoxy)propyl ether (CAS# 3101-60-8), Linseed oil, Epoxidized (CAS# 8016-11-3) and Resorcinol (CAS# 108-46-3)

GHS Classification of the substance or mixture	Classification Procedure
Acute Tox. 4; H302	Acute Toxicity Estimate Mixture Calculation
Skin Irrit. 2; H315	Threshold Calculation
Skin Sens. 1; H317	Threshold Calculation
Eye Irrit. 2; H19	Threshold Calculation
Muta. 2; H341	Threshold Calculation
Carc. 2; H351	Threshold Calculation
STOT SE 2; H371	Threshold Calculation
Aquatic Chronic 2; H411	Summation Calculation

### LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists  
IARC: International Agency for Research on Cancer  
LTEL: Long Term Exposure Limit  
NTP: National Toxicology Program  
OSHA: The Occupational Safety & Health Administration  
PBT: Persistent, Bioaccumulative and Toxic

PELs: Permissible Exposure Limits  
RELs: Recommended Exposure Limits  
STEL: Short Term Exposure Limit  
TLVs: Threshold limit values  
vPvB: very Persistent and very Bioaccumulative

### Hazard Statement(s)

H302: Harmful if swallowed.  
H312: Harmful in contact with skin.  
H315: Causes skin irritation.  
H317: May cause an allergic skin reaction.  
H319: Causes serious eye irritation.  
H341: Suspected of causing genetic defects.

H351: Suspected of causing cancer.  
H370: Causes damage to organs.  
H400: Very toxic to aquatic life.  
H411: Toxic to aquatic life with long lasting effects.  
H412: Harmful to aquatic life with long lasting effects.  
SCL: Specific Concentration Limit

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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### Annex to the extended Safety Data Sheet (eSDS)

No information available.





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