

# SAFETY DATA SHEET

Version: 2.0  
Date of Issue: 25 April 2017  
Date of First Issue: 02 November 2012

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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

## SECTION 1: IDENTIFICATION

Product identifier used on the label	PC-11C	
Other means of identification	Not applicable	
<b>Recommended use of the chemical and restrictions on use</b>		
Recommended use	Photostress® measurements.	
Restrictions on use	Anything other than the above.	
<b>Details of the supplier of the safety data sheet</b>		
Supplier	VISHAY MEASUREMENTS GROUP, INC.	
Address of Supplier	Post Office Box 27777 Raleigh, NC 27611 USA	
Telephone	+1 919-365-3800	
Fax	+1 919-365-3945	
E-Mail (competent person)	<a href="mailto:mm.us@vishaypg.com">mm.us@vishaypg.com</a>	
Emergency telephone number	1-800-424-9300	CHEMTREC (24 hours)

## SECTION 2: HAZARD(S) IDENTIFICATION

<b>Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200</b>	
Physical hazards	Flammable Liquid, Category 4
Health hazards	Skin corrosion/irritation, Category 2 Skin Sensitisation, Category 1 Eye Irritation, Category 2 Germ cell mutagenicity, Category 2 Carcinogen, Category 2
Environmental hazards	Hazardous to the aquatic environment, Chronic , Category 2

Hazard Symbol



Signal Word(s)

WARNING

Hazard Statement(s)

Combustible liquid  
Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
Suspected of causing genetic defects.  
Suspected of causing cancer.  
Toxic to aquatic life with long lasting effects.

Precautionary Statement(s)

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Keep away from flames and hot surfaces. - No smoking  
Avoid breathing vapours.  
Wash hands and exposed skin thoroughly after handling.  
Wear protective gloves/eye protection/face protection.  
IF ON SKIN: Wash with plenty of water.

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If skin irritation occurs, get medical advice/attention.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists, get medical advice/attention.  
IF exposed or concerned: Call a POISON CENTER/doctor.  
Store locked up.  
Dispose of contents in accordance with local, state or national legislation.

Other hazards

None known

Percent of the mixture consists of ingredient(s) of unknown acute toxicity:

0%

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances Not applicable

Mixtures Substances in preparations / mixtures

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard classification
Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight $\leq 700$ )	< 100	25068-38-6	500-033-5	Skin corrosion/irritation, Category 2 (SCL: $\geq 5\%$ ) Skin Sensitisation, Category 1 Eye Irritation, Category 2 (SCL: $\geq 5\%$ ) Hazardous to the aquatic environment, Chronic, Category 2
N-Butyl Glycidyl Ether	4 - 7	2426-08-6	219-376-4	Flammable Liquid, Category 3 Acute toxicity, Category 4 – Oral Skin Sensitisation, Category 1 Acute toxicity, Category 4 – Inhalation Specific target organ toxicity — single exposure, Category 3 – Respiratory irritation Germ cell mutagenicity, Category 2 Carcinogen, Category 2 Hazardous to the aquatic environment, Chronic, Category 3
Tert-butylphenyl 1-(2,3-epoxy)propyl ether	1 – 5	3101-60-8	221-453-2	Skin corrosion/irritation, Category 2 Skin Sensitisation, Category 1 Hazardous to the aquatic environment, Chronic, Category 2

## SECTION 4: FIRST AID MEASURES



### Description of first aid measures

Self-protection of the first aider

Avoid breathing vapours. 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 failing. IF exposed or concerned: Call a POISON CENTER/doctor.

Skin Contact

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: Call a POISON CENTER/doctor.

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

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Ingestion	irritation develops or persists. IF SWALLOWED: Rinse mouth. Do not induce vomiting. Do not give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration into the lungs. If symptoms develop, obtain medical attention.
<b>Most important symptoms and effects, both acute and delayed</b>	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Suspected of causing genetic defects. Suspected of causing cancer.
<b>Indication of any immediate medical attention and special treatment needed</b>	Treat symptomatically.

## SECTION 5: FIRE-FIGHTING MEASURES

<b>Extinguishing media</b> Suitable Extinguishing Media	As appropriate for surrounding fire. Extinguish with carbon dioxide, dry chemical, foam or waterspray. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Unsuitable extinguishing Media	Do not use water jet. Direct water jet may spread the fire.
<b>Special hazards arising from the substance or mixture</b>	Combustible liquid. May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide, Phenolics, Acids and Aldehydes. Sealed containers may rupture explosively if hot. Dense smoke is emitted when burned without sufficient oxygen.
<b>Special protective equipment and precautions 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>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. Avoid breathing vapours. Avoid all contact.
<b>Methods and material for containment and cleaning up</b>	Ensure suitable personal protection during removal of spillages. Contain spillages. Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste.

## SECTION 7: HANDLING AND STORAGE

<b>Precautions for safe handling</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing vapours. Avoid all contact. 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>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. The following may occur: Hazardous Polymerization.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 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
N-Butyl Glycidyl Ether	2426-08-6	-	-	5.6(1)	30(1)	NIOSH
		50	270	-	-	OSHA
		3	-	-	-	ACGIH, Sk, Sen

Note: OSHA PELs 1910.1000 TABLE Z-1/ NIOSH RELs / ACGIH TLVs

Sk - Can be absorbed through skin.

Sen: Capable of causing respiratory sensitisation

(1) Ceiling limit value (15 min)

The other components listed in Section 3 do not have occupational exposure limits.

### Biological Exposure Indices

Not established

### 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.

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

General hygiene measures for the handling of chemicals are applicable. Avoid breathing vapours. Avoid all contact. 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



In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance	Clear - Light coloured liquid
Odor	Faint Odour
Odor Threshold	Not available.
pH	Not established.
Melting Point/Freezing Point	-16 °C (CAS No. 25068-38-6)

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Initial boiling point and boiling range	~320°C (CAS No. 25068-38-6)
Flash Point	73.3°C [Closed cup]
Evaporation rate (Butyl acetate = 1)	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	1.13 (H <sub>2</sub> O = 1)
Solubility(ies)	Insoluble in water.
Partition coefficient: n-octanol/water	≥ 2.64 ≤ 3.78 log Pow (25 °C) (CAS No. 25068-38-6)
Auto-ignition temperature	Not applicable.
Decomposition Temperature	>350°C (CAS No. 25068-38-6)
Viscosity	Not available.

## SECTION 10: STABILITY AND REACTIVITY

<b>Reactivity</b>	Stable under normal conditions.
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Keep away from: Acids, strong bases, Amines and mercaptans. The following may occur: Hazardous Polymerization. Contact with aliphatic amines will cause irreversible polymerization with considerable heat build-up.
<b>Conditions to avoid</b>	Keep away from heat, sources of ignition and direct sunlight.
<b>Incompatible materials</b>	Keep away from: Acids, strong bases, Amines and mercaptans.
<b>Hazardous decomposition product(s)</b>	May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide, Phenolics, Acids and Aldehydes.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on toxicological effects (Substances in preparations / mixtures)

<b>Acute toxicity - Ingestion</b>	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
<b>Acute toxicity - Inhalation</b>	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 20.0 mg/l.
<b>Acute toxicity - Skin Contact</b>	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 corrosion/irritation, Category 2; Causes skin irritation.
<b>Serious eye damage/irritation</b>	Eye Irritation, Category 2; Causes serious eye irritation.
<b>Respiratory or skin sensitization</b>	Skin Sensitisation, Category 1; May cause an allergic skin reaction.
<b>Germ cell mutagenicity</b>	Germ cell mutagenicity, Category 2; Suspected of causing genetic defects.
<b>Carcinogenicity</b>	Carcinogen, Category 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>	Based upon the available data, the classification criteria are not met.
<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>Information on likely routes of exposure</b>	
Inhalation	Possible – accidental exposure
Ingestion	Unlikely – accidental exposure
Skin Contact	Possible – accidental exposure
Eye Contact	Unlikely – accidental exposure
<b>Early onset symptoms related to exposure</b>	Causes irritation to eyes and skin.
<b>Delayed health effects from exposure</b>	May cause an allergic skin reaction. Suspected of causing genetic defects. Suspected of causing cancer.

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## Other information

NTP Report on Carcinogens	Not listed
IARC Monographs	Not listed
OSHA Designated Carcinogen	Not listed

## SECTION 12: ECOLOGICAL INFORMATION

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

## SECTION 13: DISPOSAL CONSIDERATIONS

<b>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.
<b>Additional Information</b>	Dispose of contents in accordance with local, state or national legislation.

## SECTION 14: TRANSPORT INFORMATION

	<b>ADR/RID</b>	<b>IMDG</b>	<b>IATA</b>
<b>UN number</b>	UN 3082	UN 3082	UN 3082
<b>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)	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)	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>Transport hazard class(es)</b>	9	9	9
<b>Packing group</b>	III	III	III
<b>Environmental hazards</b>	Environmentally hazardous substance	Classified as a Marine Pollutant.	Environmentally hazardous substance
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.		
<b>Special precautions for user</b>	See Section: 2		

## SECTION 15: REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### US Federal Regulations

TSCA (Toxic Substance Control Act)	N-Butyl Glycidyl Ether: Subject to 2,500 lb reporting threshold Tert-butylphenyl 1-(2,3-epoxy)propyl ether: Subject to 2,500 lb reporting threshold
EPCRA/SARA Section 302 Extremely Hazardous Substances	All chemicals are not listed
EPCRA Section 313 Toxics Release Inventory (TRI) Program	All chemicals are not listed
NIOSH Occupational Carcinogen List	All chemicals are not listed
OSHA List of highly hazardous chemicals, toxics and reactives	All chemicals are not listed
NTP Report on Carcinogens (RoC) List	All chemicals are not listed

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Poison Prevention Packaging Act	All chemicals are not listed
<b>US State Regulations</b>	
California State, Proposition 65 List	All chemicals are not listed
California State, Safer Consumer Products Regulations	All chemicals are not listed
Maine State, Toxic Chemicals in Children's Products Act	All chemicals are not listed
New Jersey State Worker and Community RTK Act	N-Butyl Glycidyl Ether: RTKHSL
Pennsylvania State, Worker and Community RTK Act	N-Butyl Glycidyl Ether: Hazardous Substance List
Rhode Island State, Hazardous Substances RTK Act	N-Butyl Glycidyl Ether: Hazardous Substance List
<b>Non-Regional</b>	
IARC Monographs, List of Classifications onal	All chemicals are not listed

## SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Updated substance / mixture classification. New SDS Regulation compliant with HazCom 2012 format, all sections have been updated to include new information. Please review SDS with care.

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### References:

Existing Safety Data Sheet (SDS), EU Data: Harmonised Classification(s) for Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight  $\leq$  700) (CAS# 25068-38-6) and N-Butyl Glycidyl Ether (CAS# 2426-08-6). Existing ECHA registration(s) for Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight  $\leq$  700) (CAS# 25068-38-6) and P-Tertbutylphenyl Glycidyl Ether (CAS# 3101-60-8).

GHS Classification of the substance or mixture	Classification Procedure
Flammable Liquid, Category 4	Flash Point Test Result [Closed cup]
Skin corrosion/irritation, Category 2	Threshold Calculation
Skin Sensitisation, Category 1	Threshold Calculation
Eye Irritation, Category 2	Threshold Calculation
Germ cell mutagenicity, Category 2	Threshold Calculation
Carcinogen, Category 2	Threshold Calculation
Hazardous to the aquatic environment, Chronic , Category 2	Summation Calculation

### LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists  
BEI: Biological Exposure Indices (ACGIH)  
IARC: International Agency for Research on Cancer  
Irr: Irritation  
NIOSH: National Institute of Occupational Safety and Health  
NTP: National Toxicology Program  
OSHA: The Occupational Safety & Health Administration  
PBT: Persistent, Bioaccumulative and Toxic  
PEL: Permissible exposure limit

REL: Recommended exposure limit  
SCL: Specific Concentration Limit  
Skin<sup>2</sup>: Risk of overexposure via dermal contact  
STEL: Short Term Exposure Limit  
TLV: Threshold Limit value  
TSCA: Toxic Substance Control Act  
TWA: Time Weighted Average  
URT: Upper respiratory tract  
vPvB: very Persistent and very Bioaccumulative

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.

### Disclaimers

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