

SAFETY DATA SHEET



Revision: 1.1 Date: 24.08.2015
ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),
1272/2008 (CLP) & 2015/830

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1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier	
Product Name	PC-6
Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture
REACH Registration No.	None assigned.
1.2 Relevant identified uses of the substance or mixture and uses advised against	
Identified Use(s)	Photostress® measurements.
Uses Advised Against	None known.
1.3 Details of the supplier of the safety data sheet	
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
1.4 Emergency telephone number	1-800-424-9300 CHEMTREC

2. SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture	
2.1.1 GHS Classification	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Aquatic Chronic 2; H411
2.2 Label elements	
Product Name	GHS Classification PC-6
Hazard Pictogram(s)	 
Signal Word(s)	Warning
Contains:	Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) and P-Tert-butylphenyl 1-(2,3-epoxy)propyl ether
Hazard Statement(s)	H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H411: Toxic to aquatic life with long lasting effects.
Precautionary Statement(s)	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. P337+P313: If eye irritation persists: Get medical advice/attention. P273: Avoid release to the environment.

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Additional Information None.

2.3 Other hazards None.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances Not applicable

3.2 Mixtures

GHS Classification

Chemical identity of the substance	%WW	CAS No.	EC No.	REACH Registration No.	Hazard Statement(s)
Reaction product: bisphenol-A- (epichlorhydrin) epoxy resin (number average molecular weight \leq 700)	< 100	25068-38-6	500-033-5	None assigned.	Skin Irrit. 2; H315 (SCL: \geq 5%) Skin Sens. 1; H317 Eye Irrit. 2; H319 (SCL: \geq 5%) Aquatic Chronic 2; H411
Aluminium powder (stabilised)	15 - 20	7429-90-5	231-072-3	None assigned.	Flam. Sol. 1; H228 Water-react. 2; H261
P-Tert-butylphenyl 1-(2,3- epoxy)propyl ether	0.5 - 9	3101-60-8	221-453-2	None assigned.	Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Chronic 2; H411
Stearic acid	< 1	57-11-4	200-313-4	None assigned.	Not classified
Silicon	< 0.5	7440-21-3	231-130-8	None assigned.	Not classified
Iron	< 0.5	7439-89-6	231-096-4	None assigned.	Not classified

H228: Flammable solid. H261: In contact with water releases flammable gases. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H411: Toxic to aquatic life with long lasting effects. SCL: Specific Concentration Limit.

4. SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

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.

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.

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

Rinse mouth. Do not induce vomiting. Do not give anything by mouth to an unconscious person. If symptoms develop, obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing media

As appropriate for surrounding fire. Extinguish with dry sand or special powder

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- 5.2 **Special hazards arising from the substance or mixture** Unsuitable extinguishing media
Do not use water jet. Direct water jet may spread the fire.
May decompose in a fire giving off toxic fumes. Carbon monoxide, carbon dioxide, Aluminium oxides and phenolics. Sealed containers may rupture explosively if hot. Dense smoke is emitted when burned without sufficient oxygen.
- 5.3 **Advice for fire-fighters** 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.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 **Personal precautions, protective equipment and emergency procedures** Ensure adequate ventilation. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Use personal protective equipment as required. See Section: 8. Avoid breathing vapours.
- 6.2 **Environmental precautions** 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.
- 6.3 **Methods and material for containment and cleaning up** 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.
- 6.4 **Reference to other sections** See Section: 8, 13

7. SECTION 7: HANDLING AND STORAGE

- 7.1 **Precautions for safe handling** Avoid contact with skin, eyes or clothing. Avoid breathing vapours. 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.
- 7.2 **Conditions for safe storage, including any incompatibilities** Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, sources of ignition and direct sunlight. Protect from moisture.
Storage temperature: Ambient.
Storage life: Stable under normal conditions.
Incompatible materials: Keep away from: Acids, strong bases, Amines and mercaptans. The following may occur: Hazardous Polymerization.
- 7.3 **Specific end use(s)** Photostress® measurements.

8. 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 ³)	STEL (ppm)	STEL (mg/m ³)	Note
Aluminium	7429-90-5	-	10 (1) 5 (2) 3 (3)	-	-	NIOSH
Aluminium	7429-90-5	-	15 (1) 5 (4)	-	-	OSHA
Silicon	7440-21-3	-	10 (1) 5 (6)	-	-	NIOSH
Silicon	7440-21-3	-	15 (1) 5 (4)	-	-	OSHA

Note: OSHA 1910.1000 TABLE Z-1 / NIOSH

- 1) Total dust
2) Respirable fraction, pyro powders, welding fumes

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3) Soluble salts, alkyls	
4) Respirable dust	
5) Respirable fraction	
8.1.2 Biological limit value	Not established.
8.1.3 PNECs and DNELs	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. Have available eyewash bottle with clean water.
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. Avoid breathing vapours. 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 (EN166).
	
Skin protection	Hand protection: Wear impervious gloves (EN374). 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.
	
Thermal hazards	Not applicable.
8.2.3 Environmental Exposure Controls	Avoid release to the environment.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties	
Appearance	Aluminium coloured liquid
Odour	Faint Odour
Odour threshold	Not available.
pH	Not established.
Melting point/freezing point	-16 °C (CAS# 25068-38-6)
Initial boiling point and boiling range	~320°C (CAS# 25068-38-6)
Flash point	199°C [Closed cup]
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable - Liquid.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	1.16 (H ₂ O = 1) (Mixture)
Solubility(ies)	Insoluble in water.
Partition coefficient: n-octanol/water	≥ 2.64 ≤ 3.78 log Pow (25 °C) (CAS# 25068-38-6)
Auto-ignition temperature	Not applicable.
Decomposition Temperature	>350°C (CAS# 25068-38-6)

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Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2 Other information Volatile Organic Compound Content (%): 0

10. SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	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.
10.4 Conditions to avoid	Keep away from heat, sources of ignition and direct sunlight.
10.5 Incompatible materials	Keep away from: Acids, strong bases, Amines and mercaptans.
10.6 Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Carbon monoxide, carbon dioxide, Aluminium oxides and phenolics.

11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects (Substances in preparations / mixtures)	
Acute toxicity	
Ingestion	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 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.
Skin corrosion/irritation	Skin Irrit. 2: Causes skin irritation.
Serious eye damage/irritation	Eye Irrit. 2: Causes serious eye irritation.
Respiratory or skin sensitization	Skin Sens. 1: May cause an allergic skin reaction.
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.
Carcinogenicity	Based upon the available data, the classification criteria are not met.
Reproductive toxicity	Based upon the available data, the classification criteria are not met.
STOT - single exposure	Based upon the available data, the classification criteria are not met.
STOT - repeated exposure	Based upon the available data, the classification criteria are not met.
Aspiration hazard	Based upon the available data, the classification criteria are not met.
11.2 Other information	
NTP Report on Carcinogens	Not listed
IARC Monographs	Not listed

12. SECTION 12: ECOLOGICAL INFORMATION

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

13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods	Dispose of this material and its container as hazardous waste. Containers of this material may be hazardous when empty since they retain product residue.
13.2 Additional Information	Dispose of contents in accordance with local, state or national legislation.

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14. SECTION 14: TRANSPORT INFORMATION

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

15. SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
15.1.2 National regulations	
OSHA Occupational Safety and Health Standards	None.
15.1.1 European regulations	
Substance(s) of Very High Concern (SVHCs)	None
Wassergefährdungsklasse (Germany)	Water hazard class: 2
15.2 Chemical Safety Assessment	Not available.

16. SECTION 16: OTHER INFORMATION

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

References: Existing Safety Data Sheet (SDS), Harmonised Classification(s) for Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700) (CAS# 25068-38-6) and Aluminium (CAS# 7429-90-5). Existing ECHA registration(s) for Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700) (CAS# 25068-38-6), P-P-Tert-butylphenyl 1-(2,3-epoxy)propyl ether (CAS# 3101-60-8), Aluminium (CAS# 7429-90-5), Stearic acid (CAS# 57-11-4), Silicon (CAS# 7440-21-3) and Iron (CAS# 7439-89-6).

GHS Classification of the substance or mixture	Classification Procedure
Skin Irrit. 2; H315	Threshold Calculation
Skin Sens. 1; H317	Threshold Calculation
Eye Irrit. 2; H19	Threshold Calculation
Aquatic Chronic 2; H411	Summation Calculation

LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
PBT	PBT: Persistent, Bioaccumulative and Toxic
vPvB	very Persistent and very Bioaccumulative
NTP	National Toxicology Program
IARC	International Agency for Research on Cancer
OSHA	The Occupational Safety & Health Administration
NIOSH	National Institute for Occupational Safety and Health

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.