

# SAFETY DATA SHEET

Revision: 1.1 Date: 26.08.2015

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 PLM-9  
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 UK LTD  
Stroudley Road  
Basingstoke  
Hampshire  
RG24 8FW  
United Kingdom  
Telephone +44 (0) 1256 462131  
Fax +44 (0) 1256 471441  
E-Mail (competent person) mm.uk@vishaypg.com
- 1.4 Emergency telephone number** (00-1) 703-527-3887  
CHEMTREC

## 2. SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture**
- 2.1.1 Regulation (EC) No. 1272/2008 (CLP).** Skin Irrit. 2; H315  
Skin Sens. 1; H317  
Eye Irrit. 2; H319  
Muta. 2; H341  
Carc. 2; H351  
Aquatic Chronic 2; H411
- 2.2 Label elements** According to Regulation (EC) No. 1272/2008 (CLP).  
Product Name PLM-9
- Hazard pictogram(s)
-   
- Signal word(s) Warning
- Contains: Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700), N-Butyl Glycidyl Ether, 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.  
H341: Suspected of causing genetic defects.  
H351: Suspected of causing cancer.  
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.  
P308+P313: IF exposed or concerned: Get medical advice/attention.

2.3 Other hazards

None

## 3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances Not applicable

3.2 Mixtures

EC Classification Regulation (EC) No. 1272/2008 (CLP).

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard statement(s)
Reaction product: bisphenol-A- (epichlorhydrin) epoxy resin (number average molecular weight $\leq$ 700)	<100	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
p-Tert-butylphenyl 1-(2,3- epoxy)propyl ether	< 10	3101-60-8	221-453-2	Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Chronic 2; H411
N-Butyl Glycidyl Ether	2 – 5	2426-08-6	219-376-4	Flam. Liq. 3; H226 Acute Tox. 4; H302 Skin Sens. 1; H317 Acute Tox. 4; H332 STOT SE 3; H335 Muta. 2; H341 Carc. 2; H351 Aquatic Chronic 3; H412

H226: Flammable liquid and vapour. H302+H332: Harmful if swallowed or if inhaled. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H319: Causes serious eye irritation. H335: May cause respiratory irritation. H341: Suspected of causing genetic defects. H351: Suspected of causing cancer. H411: Toxic to aquatic life with long lasting effects. H412: Harmful to aquatic life with long lasting effects. SCL: Specific Concentration Limit.

## 4. SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Self-protection of the first aider

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

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Apply artificial respiration if necessary (do not employ mouth-to-mouth method). IF exposed or concerned: Get medical advice/attention.

Skin Contact

IF ON SKIN: Remove contaminated clothing and wash affected skin with water. Contaminated clothing should be thoroughly cleaned. If skin irritation or rash

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	Eye Contact	occurs: Get medical advice/attention. IF exposed or concerned: 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.
	Ingestion	IF SWALLOWED: Get medical advice/attention if you feel unwell. Do not induce vomiting. Do not give anything by mouth to an unconscious person.
4.2	<b>Most important symptoms and effects, both acute and delayed</b>	May cause an allergic skin reaction. Causes skin irritation. Causes serious eye irritation. Suspected of causing genetic defects. Suspected of causing cancer.
4.3	<b>Indication of any immediate medical attention and special treatment needed</b>	Treat symptomatically.

## 5. SECTION 5: FIRE-FIGHTING MEASURES

5.1	<b>Extinguishing media</b> Suitable Extinguishing Media	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. May spread fire.
5.2	<b>Special hazards arising from the substance or mixture</b>	May decompose in a fire giving off toxic fumes. Phenolics, Carbon monoxide, Carbon dioxide, Acids and Aldehydes. Container may rupture from gas generation in a fire situation. Dense smoke is emitted when burned without sufficient oxygen.
5.3	<b>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.

## 6. SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1	<b>Personal precautions, protective equipment and emergency procedures</b>	Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Ensure adequate ventilation. Do not breathe vapour. Avoid contact with skin, eyes or clothing. Wear suitable respiratory protection. Use personal protective equipment as required. See Section: 8.
6.2	<b>Environmental precautions</b>	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	<b>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 container for disposal. Dispose of this material and its container as hazardous waste (2008/98/EEC). To clean the floor and all objects contaminated by this material use soap and water.
6.4	<b>Reference to other sections</b>	See Section: 8, 13

## 7. SECTION 7: HANDLING AND STORAGE

7.1	<b>Precautions for safe handling</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapour. Avoid contact with skin, eyes or clothing. 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	<b>Conditions for safe storage, including any incompatibilities</b> Storage Temperature Storage Life Incompatible materials	Keep in a cool, dry, well ventilated place. Keep away from heat and direct sunlight. Ambient. Stable under normal conditions. Keep away from: Oxidizing agents, unintended contact with amines, Strong Acids, mercaptans and Alkalis.
7.3	<b>Specific end use(s)</b>	Photostress® measurements.

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## 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 <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note
N-Butyl Glycidyl Ether*	2426-08-6	25	135	-	-	WEL

Note: WEL: Workplace Exposure Limit (UK HSE EH40)

\* The UK Advisory Committee on Toxic Substances has expressed concern that, for the OELs shown in parentheses, health may not be adequately protected because of doubts that the limit was not soundly-based. These OELs were included in the published UK 2002 list and its 2003 supplement, but are omitted from the published 2005 list.

#### 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. Use with local exhaust ventilation. 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. Use personal protective equipment as required. Keep work clothes separately. Contaminated clothing should be thoroughly cleaned. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke during work.

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). Breakthrough time of the glove material: refer to the information provided by the gloves' producer. The gloves type used must be chosen based on the work activity and duration as well as concentration/quantity of material being handled. Recommended: Butyl rubber, Nitrile rubber, Neoprene, PVC.

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	Clear - Light Coloured liquid
Odour	Faint Odour
Odour Threshold	Not available.

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pH	Not established.
Melting Point/Freezing Point	-16 °C (CAS No. 25068-38-6)
Initial boiling point and boiling range	~320 °C (CAS No. 25068-38-6)
Flash point	≥ 264 ≤ 268 °C (CAS No. 25068-38-6)
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	1.14 (H <sub>2</sub> O = 1)
Solubility(ies)	Partly soluble 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.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2 Other information None.

## 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	Reaction with some curing agents may produce considerable heat. Reacts with amines. Polymerization may occur. Contact with aliphatic amines will cause irreversible polymerization with considerable heat build-up.
10.4 Conditions to avoid	Avoid contact with heat and ignition sources and oxidizers.
10.5 Incompatible materials	The product may decompose if heated to temperatures above (°C): 300 Keep away from: Oxidizing agents, unintended contact with amines, Strong Acids mercaptans and alkalis. Polymerization may occur.
10.6 Hazardous Decomposition Product(s)	Decomposes in a fire giving off toxic fumes: Phenolics, Carbon monoxide, Carbon dioxide, Acids and Aldehydes.

## 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. LC50 > 2000 mg/kg bw/day
Inhalation	Based upon the available data, the classification criteria are not met. LC50 > 20 mg/kg bw/day
Dermal	Based upon the available data, the classification criteria are not met. 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	Muta. 2: May cause genetic defects.
Carcinogenicity	Carc. 2: Suspected of causing cancer.
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	None.

## 12. SECTION 12: ECOLOGICAL INFORMATION

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

## 13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1	<b>Waste treatment methods</b>	This material and its container must be disposed of as hazardous waste (2008/98/EEC). Dispose of contents in accordance with local, state or national legislation. Containers of this material may be hazardous when empty since they retain product residue. Do not allow to enter drains, sewers or watercourses.
13.2	<b>Additional Information</b>	Dispose of contents in accordance with local, state or national legislation.

## 14. SECTION 14: TRANSPORT INFORMATION

		<b>ADR/RID / IMDG / IATA</b>
14.1	<b>UN number</b>	UN 3082
14.2	<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 p-Tert-butylphenyl 1-(2,3-epoxy)propyl ether)
14.3	<b>Transport hazard class(es)</b>	9
14.4	<b>Packing Group</b>	III
14.5	<b>Environmental hazards</b>	Marine Pollutant / Environmentally hazardous substance
14.6	<b>Special precautions for user</b>	See Section: 2
14.7	<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
14.8	<b>Additional information</b>	None.

## 15. SECTION 15: REGULATORY INFORMATION

15.1	<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
15.1.1	<b>EU regulations</b>	
	Authorisations and/or restrictions on use	None.
	Substance(s) of Very High Concern (SVHCs)	None.
15.1.2	<b>National regulations</b>	
	Wassergefährdungsklasse (Germany)	Water hazard class: 2
15.2	<b>Chemical Safety Assessment</b>	Not available.

## 16. SECTION 16: OTHER INFORMATION

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

**References:** Existing Safety Data Sheet (SDS). Existing ECHA registration(s) for Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)(CAS# 25068-38-6) and P-Tert-butylphenyl 1-(2,3-epoxy)propyl ether (CAS# 3101-60-8), and Harmonised Classification(s) for N-Butyl Glycidyl Ether (CAS# 2426-08-6).

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Classification of the substance or mixture According to Regulation (EC) No. 1272/2008 (CLP).	Classification Procedure
Skin Irrit. 2; H315	Threshold Calculation
Skin Sens. 1; H317	Threshold Calculation
Eye Irrit. 2; H319	Threshold Calculation
Muta. 2; H341	Harmonised Classification
Carc. 2; H351	Harmonised Classification
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	vPvT: very Persistent and very Toxic

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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