

# SAFETY DATA SHEET

Revision: 1.2 Date: 28.08.2015

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 PLMH-4R  
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** mm.us@vishaypg.com  
CHEMTREC

## 2. SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture**  
**2.1.1 GHS Classification** Acute Tox. 4; H302  
Skin Irrit. 2; H315  
Skin Sens. 1; H317  
Eye Dam. 1; H318.  
STOT RE 2; H373  
Aquatic Chronic 2; H411
- 2.2 Label elements**  
Product Name PLMH-4R  
Hazard pictogram(s) 
- Signal word(s) Danger
- Contains:** 2,2'-Iminodiethanol and Reaction product: Bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)
- Hazard statement(s) H302: Harmful if swallowed.  
H315: Causes skin irritation.  
H317: May cause an allergic skin reaction.  
H318: Causes serious eye damage.  
H373: May cause damage to organs through prolonged or repeated exposure.  
H411: Toxic to aquatic life with long lasting effects.
- Precautionary statement(s) P260: Do not breathe vapour.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.

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ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),  
1272/2008 (CLP) & 2015/830

www.vishaypg.com

P302+P352: IF ON SKIN: Wash with plenty of soap and 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.  
P310: Immediately call a POISON CENTER/doctor.

## 2.3 Other hazards

None known.

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

### 3.1 Substances Not applicable

### 3.2 Mixtures

GHS Classification

Chemical identity of the substance	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard statement(s)
2,2'-Iminodiethanol	70 – 100	111-42-2	203-868-0	None assigned.	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT RE 2; H373 Aquatic Chronic 3; H412
Reaction product: Bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight $\leq$ 700)	10 - 30	25068-38-6	500-033-5	None assigned.	Eye Irrit. 2; H319 (SCL: $\geq$ 5%) Skin Sens. 1; H317 Skin Irrit. 2; H315 (SCL: $\geq$ 5%) Aquatic Chronic 2; H411

H302: Harmful if swallowed. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H318: Causes serious eye damage.  
H319: Causes serious eye irritation. H373: May cause damage to organs through prolonged or repeated exposure. 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

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.

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 breathing has ceased or shows signs of failing. Get medical advice/attention if you feel unwell.

Skin Contact

IF ON SKIN: Wash with plenty of water. Remove contaminated clothing and wash clothing before reuse. 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. Immediately call a POISON CENTER/doctor. Obtain prompt consultation, preferably from an ophthalmologist.

Ingestion

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. Make victim drink water. Do not give anything by mouth to an unconscious person.

### 4.2 Most important symptoms and effects, both acute and delayed

Causes serious eye damage. Causes skin irritation. May cause an allergic skin reaction. Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure by ingestion.

### 4.3 Indication of any immediate medical attention and

Treat symptomatically.

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Revision: 1.2 Date: 28.08.2015

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),  
1272/2008 (CLP) & 2015/830

www.vishaypg.com

special treatment needed

IF IN EYES: Obtain prompt consultation, preferably from an ophthalmologist.  
IF INHALED: Immediately administer a corticosteroid from a controlled/metered dose inhaler.

## 5. SECTION 5: FIRE-FIGHTING MEASURES

- 5.1 Extinguishing media**  
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.
- 5.2 Special hazards arising from the substance or mixture**  
Combustion or thermal decomposition will evolve toxic and irritant vapours. Phenolics, Hydrogen chloride, Carbon monoxide, Carbon dioxide and Nitrogen oxides. Sealed containers may rupture explosively if hot.
- 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** Do not breathe vapour. Ensure adequate ventilation. Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. See Section: 8.
- 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 appropriate regulatory body.
- 6.3 Methods and material for containment and cleaning up** Ensure full personal protection (including respiratory protection) during removal of 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.
- 6.4 Reference to other sections** See Section: 8, 13

## 7. SECTION 7: HANDLING AND STORAGE

- 7.1 Precautions for safe handling** 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.
- 7.2 Conditions for safe storage, including any incompatibilities**  
Storage Temperature Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, sources of ignition and direct sunlight.  
Storage Life Ambient.  
Incompatible materials Stable under normal conditions.  
Keep away from: Acids, Alkalis, Amines, Oxidizing agents, nitrosating agents, halogenated compounds, Aldehydes and Isocyanates.
- 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 <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note
2,2'-Iminodiethanol	111-42-2	3	15	-	-	NIOSH

Note: National Institute for Safety and Health

# SAFETY DATA SHEET

Revision: 1.2 Date: 28.08.2015

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),  
1272/2008 (CLP) & 2015/830

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8.1.2	<b>Biological limit value</b>	Not established.
8.1.3	<b>PNECs and DNELs</b>	Not established.
8.2	<b>Exposure controls</b>	
8.2.1	<b>Appropriate engineering controls</b>	Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. When dealing with heated material: Local exhaust required. Guarantee that the eye flushing systems and safety showers are located close to the working place.
8.2.2	<b>Individual protection measures, such as personal protective equipment (PPE)</b>	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 goggles giving complete protection to eyes to protect against liquid splashes (EN166). Recommended: Safety spectacles/goggles/full face shield.
		
	Skin protection	Hand protection: Wear impervious gloves (EN374). Gloves should be changed regularly to avoid permeation problems. 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: PVC.
		
	Respiratory protection	In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment. A self contained breathing apparatus may be appropriate.
		
	Thermal hazards	Not applicable.
8.2.3	<b>Environmental Exposure Controls</b>	Avoid release to the environment.

## 9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1	<b>Information on basic physical and chemical properties</b>	
	Appearance	Viscous liquid, Amber Colour
	Odour	Ammonia odour.
	Odour Threshold	Not available.
	pH	Not established.
	Melting Point/Freezing Point	Not available.
	Initial boiling point and boiling range	Not available.
	Flash point	138°C [Closed cup]
	Evaporation rate	< 1 (BuAC = 1)
	Flammability (solid, gas)	Not applicable - Liquid.
	Upper/lower flammability or explosive limits	Not applicable.
	Vapour pressure	0.2 mm Hg
	Vapour density	3.6 (Air = 1)
	Relative density	1.0 (H2O = 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.

# SAFETY DATA SHEET

Revision: 1.2 Date: 28.08.2015

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1272/2008 (CLP) & 2015/830

www.vishaypg.com

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	Reacts with - Acids, Strong oxidising agents and halogenated compounds.
10.4 Conditions to avoid	Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, sources of ignition and direct sunlight.
10.5 Incompatible materials	Keep away from: Acids, Alkalis, Amines, Oxidizing agents, nitrosating agents, halogenated compounds, Aldehydes and Isocyanates.
10.6 Hazardous Decomposition Product(s)	Combustion or thermal decomposition will evolve toxic and irritant vapours. Phenolics, Hydrogen chloride, Carbon monoxide, Carbon dioxide and Nitrogen oxides.

## 11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects	
Acute toxicity	
Ingestion	Acute Tox. 4: Harmful if swallowed. Acute Toxicity Estimate Mixture Calculation: LD50 Oral 500 mg/kg bw/day
Inhalation	Based upon the available data, the classification criteria are not met.
Dermal	Based upon the available data, the classification criteria are not met.
Skin corrosion/irritation	Skin Irrit. 2: Causes skin irritation.
Serious eye damage/irritation	Eye Dam. 1: Causes serious eye damage.
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	STOT RE 2: May cause damage to organs through prolonged or repeated exposure.
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	2,2'-Iminodiethanol: Group 2B – Possibly carcinogenic to humans.

## 12. SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	Aquatic Chronic 2; Toxic to aquatic life with long lasting effects. Estimated LC50 (Fish) > 1 ≤10 mg/l
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	This material and its container must be disposed of as hazardous waste. Do not allow to enter drains, sewers or watercourses. 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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1272/2008 (CLP) & 2015/830

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## 14. SECTION 14: TRANSPORT INFORMATION

	ADR/RID / IMDG / IATA
14.1 UN number	UN 3082
14.2 Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Reaction product: Bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700))
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 MARPOL73/78 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	
15.1.1 National regulations	
OSHA Occupational Safety and Health Standards	None.
15.1.2 European regulations	
Authorisations and/or Restrictions On Use	None.
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). Existing ECHA registration(s) for Reaction product: Bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) (CAS No.25068-38-6) and 2,2'-Iminodiethanol (CAS No.111-42-2).

GHS Classification of the substance or mixture	Classification Procedure
Acute Tox. 4; H302	Acute Toxicity Estimate (ATE) Calculation.
Skin Irrit. 2; H315	Threshold Calculation
Skin Sens. 1; H317	Threshold Calculation
Eye Dam. 1; H318	Threshold Calculation
STOT RE 2; H373	Threshold Calculation
Aquatic Chronic 2	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
NTP	National Toxicology Program
IARC	International Agency for Research on Cancer
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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1272/2008 (CLP) & 2015/830

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

No information available.