

# SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:**..... PRO-SET® LAM-237 Hardener  
**APPLICABLE PRODUCT CODES:** ..... LAM-237, LAM-237-1, LAM-237-2, LAM-237-3, LAM-237-4, LAM-237-5, LAM-237-6  
**CHEMICAL FAMILY:**..... Polyamine mixture.  
**INTENDED PRODUCT USES:**..... Curing agent for epoxy resins.  
**PRODUCT RESTRICTIONS:** ..... None identified.  
**SDS VERSION:** ..... LAM-237 -2016b

**MANUFACTURER:**  
Gougeon Brothers, Inc.  
100 Patterson Ave.  
Bay City, MI 48706, U.S.A.  
Phone: 888-377-6738 or 989-684-7286  
www.prosetepoxy.com

**EMERGENCY TELEPHONE NUMBERS (24 HRS):**  
Transportation  
CHEMTREC: ..... 800-424-9300 (U.S.)  
703-527-3887 (International)  
Non-transportation  
Poison Hotline: ..... 800-222-1222

## 2. HAZARDS IDENTIFICATION

### Classification of Substance or Mixture

Acute toxicity, Oral, Category 4  
Acute toxicity, Dermal, Category 4  
Acute toxicity, Inhalation, Category 4  
Skin corrosion/irritation, Category 1B  
Skin sensitizer, Category 1  
Eye damage/irritation, Category 1  
Specific target organ toxicity (repeated exposure - oral), Category 2  
Aspiration toxicity, Category 1  
Acute aquatic toxicity, Category 2  
Chronic aquatic toxicity, Category 2

### Label Elements

#### Hazard Pictogram(s):



**Signal Word:**  
DANGER

#### Hazard Statements:

H302 Harmful if swallowed  
H304 May be fatal if swallowed and enters airways  
H312 Harmful in contact with skin  
H332 Harmful if inhaled  
H314 Causes severe skin burns and eye damage  
H317 May cause an allergic skin reaction  
H372 May cause damage to organs through prolonged or repeated exposure  
H411 Toxic to aquatic life with long lasting effects

#### Precautionary Statements:

##### Prevention

P260 Do not breathe dust/fume/gas/mist/vapors/spray  
P264 Wash hands thoroughly after handling  
P270 Do not eat, drink or smoke when using this product  
P271 Use only outdoors or in a well ventilated area  
P272 Contaminated work clothing should not be allowed out of the workplace  
P273 Avoid release to the environment  
P280 Wear protective gloves/protective clothing/eye protection/face protection

##### Response

P301 + P330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse or wash skin with soap and water (or shower).  
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P305 + P351 + P338 + P310 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 attention/advice

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P310 Immediately call a POISON CENTER or doctor.  
P313 + P333 If irritation or rash occurs: Get medical attention/advice  
P362 + P364 Take off contaminated clothing and wash it before reuse  
P391 Collect spillage  
Storage  
P405 Store locked up.  
Disposal  
P501 Dispose of contents and container according to local, state, national and International regulations

## Other Hazards

None known.

### 3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

INGREDIENT NAME	CAS #	CONCENTRATION (%)
Polyoxypropylenediamine	9046-10-0	20-30
Isophoronediamine	2855-13-2	20-30
Trimethylolpropane polyoxypropylenetriamine	39423-51-3	5-15
Formaldehyde, polymer with benzeneamine, hydrogenated	135108-88-2	5-15
Methylenebis(cyclohexyl)amine, 4,4'-	1761-71-3	5-15
N,N'-Bis(3-aminopropyl)ethylenediamine	10563-26-5	1-5

The exact chemical identity and/or exact percentage (concentration) of each ingredient has been held as confidential business information (CBI). Refer to Section 15 for additional information regarding this CBI claim.

### 4. FIRST AID MEASURES

**FIRST AID FOR EYES:**..... SYMPTOMS: Causes eye burns and eye damage. RESPONSE: Flush immediately with water for at least 15 minutes. Remove contact lenses if present and easy to do. Immediately call a POISON CONTROL CENTER or doctor.

**FIRST AID FOR SKIN:**..... SYMPTOMS: Causes skin burns, redness and irritation. May cause allergic skin reaction and sensitization. RESPONSE: Immediately wash skin with soap and water. Immediately call a POISON CONTROL CENTER or doctor.

**FIRST AID FOR INHALATION:**..... SYMPTOMS: Can cause respiratory irritation, shortness of breath or cough. RESPONSE: Remove to fresh air if effects occur and keep comfortable for breathing. Immediately consult a physician if symptoms develop and persist.

**FIRST AID FOR INGESTION:**..... SYMPTOMS: May cause gastrointestinal irritation or ulceration. May cause burns of the mouth and throat. Aspiration hazard. Can enter the lungs and cause damage. RESPONSE: Rinse mouth with water. DO NOT induce vomiting. If vomiting should occur, keep airway clear. Immediately call POISON CONTROL CENTER or doctor.

### 5. FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA:** ..... SUITABLE: Foam, carbon dioxide (CO<sub>2</sub>), dry chemical. NON-SUITABLE: Direct water stream.

**FIRE AND EXPLOSION HAZARDS:** ..... During a fire, smoke may contain the original materials in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include, but are not limited to: oxides of nitrogen, carbon monoxide, carbon dioxide, volatile amines, ammonia, nitric acid, cyanides, aldehydes, nitrosamines. When mixed with sawdust, wood chips, or other cellulosic material, spontaneous combustion can occur under certain conditions. Heat is generated as the air oxidizes the amine. If the heat is not dissipated quickly enough, it can ignite the sawdust.

**SPECIAL FIRE FIGHTING PROCEDURES:** ..... Use full-body protective gear and a self-contained breathing apparatus. Use of water may generate toxic aqueous solutions. Do not allow water run-off from fighting fire to enter drains or other water courses.

### 6. ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS AND PROTECTIVE EQUIPMENT:** ..... Keep unnecessary and unprotected personnel from entering area. Use appropriate safety and personal protective equipment as indicated in Section 8.

**MITIGATION AND CLEAN UP PROCEDURES:** ..... Stop leak without additional risk. Isolate area. Dike and absorb with inert material (e.g., sand) and collect in a suitable, closed container. Do not use sawdust, wood chips or other cellulosic materials to absorb the spill, as the possibility for spontaneous combustion exists. Warm, soapy water may be used to clean residual.

**ENVIRONMENTAL PRECAUTIONS:**..... Prevent from entering into soil, ditches, sewers, waterways and groundwater. See Section 12 for environmental impact information.

**7. HANDLING AND STORAGE**

**STORAGE TEMPERATURE (min./max.):** ..... 40°F (4°C) / 90°F (32°C).

**STORAGE:**..... Store in cool, dry place away from high temperatures and moisture. Keep container tightly closed. Store in a secure location with restricted access or store locked up.

**HANDLING PRECAUTIONS:** ..... Use with adequate ventilation. Do not breathe vapors or mists from heated material. Avoid exposure to concentrated vapors. Avoid skin and eye contact. Wash thoroughly after handling. When mixed with epoxy resin this product causes an exothermic reaction, which in large masses, can produce enough heat to damage or ignite surrounding materials and emit fumes and vapors that vary widely in composition and toxicity.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**EYE PROTECTION GUIDELINES:** ..... Chemical splash-proof goggles or face shield.

**SKIN PROTECTION GUIDELINES:**..... Wear liquid-proof, chemical resistant gloves (nitrile-butyl rubber, neoprene, butyl rubber or natural rubber) and full body-covering clothing.

**RESPIRATORY/VENTILATION GUIDELINES:**..... Use with adequate general ventilation and/or local ventilation to keep exposures below established limits. When ventilation cannot be made adequate enough to keep exposures below established limits, use a NIOSH approved respirator with an organic vapor cartridge, organic vapor cartridge + P100, or a multi-contaminant cartridge, depending on specific workplace conditions. Consult with your respirator and cartridge supplier to ensure proper selection of respirator and cartridge based on ingredients listed in Section 3 and specific workplace conditions. Use and select a respirator according to the guidelines established in OSHA 1910.134 or other applicable respiratory protection standard.

**ADDITIONAL PROTECTIVE MEASURES:**..... Use where there is immediate access to safety shower and emergency eye wash. Wash thoroughly after use. Contact lens should not be worn when working with this material. Generally speaking, working cleanly and following basic precautionary measures will greatly minimize the potential for harmful exposure to this product under normal use conditions.

**OCCUPATIONAL EXPOSURE LIMITS:** ..... Exposure limits may not be established for this product as a whole. For established exposure limits of specific ingredients in this product, or other available exposure limit information, refer to the table below.

Ingredient Name	CAS#	Exposure Limit Information
Polyoxypropylenediamine	9046-10-0	No data available
Isophoronediamine	2855-13-2	No data available
Trimethylolpropane polyoxypropylenetriamine	39423-51-3	No data available
Formaldehyde, polymer with benzeneamine, hydrogenated	135108-88-2	No data available
Methylenebis(cyclohexanamine, 4,4'-	1761-71-3	No data available
N,N'-Bis(3-aminopropyl)ethylenediamine	10563-26-5	No data available

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**PHYSICAL FORM:** ..... Liquid.  
**COLOR:** ..... Colorless  
**ODOR:** ..... Ammonia-like  
**ODOR THRESHOLD:** ..... No data available  
**pH:** ..... 12.2  
**MELTING POINT / FREEZING POINT** ..... No data.  
**BOILING POINT (760mm/Hg):** ..... > 400°F (204°C) estimated based on similar product.  
**FLASH POINT:** ..... Estimated > 200°F (93°C) estimated based similar product.  
**AUTO IGNITION TEMPERATURE**..... No data.  
**LOWER EXPLOSIVE LIMIT (LEL)**..... No data.  
**UPPER EXPLOSIVE LIMIT (UEL)** ..... No data.  
**VAPOR PRESSURE**..... < 1 mmHg @ 20°C (estimated based on ingredient data).  
**SPECIFIC GRAVITY/DENSITY (water = 1)**..... 0.95  
**BULK DENSITY**..... 7.92 lbs./gal. (0.95 kg/L)  
**VAPOR DENSITY (air = 1)** ..... No data.  
**EVAPORATION RATE (Butyl Acetate = 1)**..... No data.  
**WATER SOLUBILITY (% BY WT.)** ..... No data.  
**PARTITION COEFFICIENT, n-OCTANOL/WATER (log Pow)**..... No data.  
**KINEMATIC VISCOSITY:** ..... 12.9 (mm<sup>2</sup>/s @ 40°C)  
**DECOMPOSITION TEMPERATURE:** ..... No data available.  
**% VOLATILE BY WEIGHT:** ..... ASTM 2369-07 was used to determine the Volatile Matter Content of mixed epoxy resin and hardener. The combined VOC content for the resin and hardener system is listed below.

Resin/Hardener	VOC Content	
	(g/L)	(lb/gal)
LAM-125 / LAM-237	3.13	0.03

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LAM-135 / LAM-237 .....	0.93	0.01
LAM-145 / LAM-237 .....	1.58	0.01

**10. STABILITY AND REACTIVITY**

**STABILITY:** ..... Product is stable at normal temperatures and pressures.

**REACTIVITY/HAZARDOUS REACTIONS:** ..... Product will not react by itself. A mass of more than one pound of product plus an epoxy resin will cause irreversible polymerization with significant heat buildup and pressure.

**INCOMPATIBILITIES:** ..... Avoid acids, oxidizing materials, halogenated organic compounds (e.g., methylene chloride). External heating or self-heating could result in rapid temperature increase and pressure build up. If such a condition were to occur in a drum, the drum could expand and rupture violently.

**CONDITIONS TO AVOID:** ..... Avoid excessive heat.

**DECOMPOSITION PRODUCTS:** ..... Very toxic fumes and gases when burned or otherwise heated to decomposition. Decomposition products may include, but not limited to: oxides of nitrogen, volatile amines, ammonia, nitric acid, cyanides, nitrosamines.

**11. TOXICOLOGICAL INFORMATION**

Ingredient Name	CAS#	LD <sub>50</sub> Oral	LD <sub>50</sub> Dermal	LC <sub>50</sub> Inhalation
Polyoxypropylenediamine	9046-10-0	2855 mg/kg	2980 mg/kg	>0.74 mg/L 8h mist
Isophoronediamine	2855-13-2	1030 mg/kg	>2000	>5.01 mg/l 4h mist
Trimethylolpropane polyoxypropylenetriamine	39423-51-3	550 mg/kg	>1000 mg/kg	No data
Formaldehyde, polymer with benzeneamine, hydrogenated	135108-88-2	No data	No data	No data
Methylenebiscyclohexanamine, 4,4'-	1761-71-3	380 mg/kg	>1000	No data
N,N'-Bis(3-aminopropyl)ethylenediamine	10563-26-5	1200 mg/kg	190-210 mg/kg	No data

**ACUTE TOXICITY:** ..... No specific toxicity data exists for this mixture. Classification is based on acute toxicity estimation methods using ingredient data.

Oral: ..... Category 4 - Harmful if swallowed . May cause gastrointestinal irritation or ulceration. May cause burns of the mouth and throat. Aspiration hazard. Can enter the lungs and cause damage.

Dermal: ..... Category 4 - Harmful in contact with skin.

Inhalation:..... Category 4 - Harmful if inhaled . Repeated or prolonged exposures to mist or aerosol, or concentrated vapors may cause lung damage.

**SKIN CORROSION / IRRITATION:**..... Category 1B - Causes severe skin burns. Effects may be immediate. May cause persistent irritation or dermatitis.

**SERIOUS EYE DAMAGE / IRRITATION:**..... Category 1 - Causes serious eye damage. May cause blurred vision. May cause corneal damage resulting in vision impairment or even blindness.

**RESPIRATORY SENSITIZATION:**..... Not classified. Based on available data does not meet classification criteria.

**SKIN SENSITIZATION:**..... Category 1 - May cause allergic skin reaction.

**REPRODUCTIVE TOXICITY:**..... Not classified. Based on available data does not meet classification criteria.

**MUTAGENICITY:**..... Not classified. Based on available data does not meet classification criteria.

**CARCINOGENICITY:**..... Not classified. Based on available data does not meet classification criteria.

**SPECIFIC TARGET ORGAN TOXICITY (Single Exposure):**..... Not classified. Based on available data does not meet classification criteria.

**SPECIFIC TARGET ORGAN TOXICITY (Repeated Exposure):** ..... STOT RE Category 2. Repeated ingestion can result in damage to the following organs/biological systems: liver, muscles, skeletal.

**ASPIRATION HAZARD:** ..... Category 1. May be fatal if swallowed and enters the airways.

**OTHER HEALTH HAZARD INFORMATON:**..... This product is classified as corrosive to skin and mucous membrane tissues. Consequently, excessive inhalation exposure to vapor/mist/aerosol may also cause be damaging to tissues in the respiratory tract.

**12. ECOLOGICAL INFORMATION**

**ACUTE AQUATIC TOXICITY:**..... No specific test data available for the mixture. Calculated Estimate: Aquatic Acute Category 2. Toxic to aquatic life. Avoid release to the environment.

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**CHRONIC AQUATIC TOXICITY:** ..... No specific test data available for the mixture. Calculated Estimate: Aquatic Chronic Category 2. Toxic to aquatic life with long lasting effects. Avoid release to the environment.

**PERSISTENCE AND BIODEGRADABILITY:** ..... No specific test data available for the mixture.

**MOBILITY IN SOIL:** ..... No specific test data available for the mixture.

**ADDITIONAL ECOTOXICITY INFORMATION:** ..... In the liquid, uncured state, this product may be harmful to aquatic life with long lasting effects. Prevent release to the environment, sewers and natural waters.

Ingredient	CAS#	Ecotoxicity Classification Information
Polyoxypropylenediamine	9046-10-0	Acute Aquatic Cat. 3; Chronic Aquatic Cat. 2
Isophoronediamine	2855-13-2	Acute Aquatic Cat. 3; Chronic Aquatic Cat. 3
Trimethylolpropane polyoxypropylenetriamine	39423-51-3	Acute Aquatic Cat. 2; Chronic Aquatic Cat. 2
Formaldehyde, polymer with benzeneamine, hydrogenated	135108-88-2	Not classified
Methylenebiscyclohexanamine, 4,4'-	1761-71-3	Acute Aquatic Cat. 2; Chronic Aquatic Cat. 2
N,N'-Bis(3-aminopropyl)ethylenediamine	10563-26-5	Not classified

**13. DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL METHOD:** ..... Evaluation of this product using RCRA criteria shows that it is not a hazardous waste, either by listing or characteristics, in its purchased form. It is the responsibility of the user to determine proper disposal methods.

Incinerate, recycle (fuel blending) or reclaim may be preferred methods when conducted in accordance with federal, state and local regulations.

**14. TRANSPORTATION INFORMATION**

**US DOT**

UN NUMBER: ..... UN 2735  
 SHIPPING NAME: ..... Polyamines, liquid, corrosive, n.o.s.  
 TECHNICAL SHIPPING NAME: ..... Polyoxypropylenediamine  
 HAZARD CLASS: ..... Class 8  
 PACKING GROUP: ..... PG II  
 MARINE POLLUTANT: ..... No

**CANADA TDG**

UN NUMBER: ..... UN 2735  
 SHIPPING NAME: ..... Polyamines, liquid, corrosive, n.o.s.  
 TECHNICAL SHIPPING NAME: ..... Polyoxypropylenediamine  
 HAZARD CLASS: ..... Class 8  
 PACKING GROUP: ..... PG II  
 MARINE POLLUTANT: ..... No

**IMDG**

UN NUMBER: ..... UN 2735  
 SHIPPING NAME: ..... Polyamines, liquid, corrosive, n.o.s.  
 TECHNICAL SHIPPING NAME: ..... Polyoxypropylenediamine  
 HAZARD CLASS: ..... Class 8  
 PACKING GROUP: ..... PG II  
 EmS Number: ..... F-A, S-B  
 MARINE POLLUTANT ..... Yes

**ICAO/IATA**

UN NUMBER: ..... UN 2735  
 SHIPPING NAME: ..... Polyamines, liquid, corrosive, n.o.s.  
 TECHNICAL SHIPPING NAME: ..... Polyoxypropylenediamine  
 HAZARD CLASS: ..... Class 8  
 PACKING GROUP: ..... PG II  
 MARINE POLLUTANT: ..... Yes

**15. REGULATORY INFORMATION**

COUNTRY	INVENTORY LIST	STATUS
United States	TSCA	All ingredients are listed or otherwise compliant.
Europe	EINECS or ELINCS	All ingredients are listed or otherwise compliant.
Canada	CEPA (DSL/NDL)	All ingredients are listed or otherwise compliant.
Australia	AICS	All ingredients are listed or otherwise compliant.

