

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:..... PRO-SET® TLG-616-H Hardener
APPLICABLE PRODUCT CODES: TLG-616-H, TLG-616-H-4
CHEMICAL FAMILY:..... Thixotropic polyamine mixture.
INTENDED PRODUCT USES:..... Curing agent for epoxy resins.
PRODUCT RESTRICTIONS:..... None identified.
SDS VERSION: TLG-616-H-2018a

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

Label Elements

Hazard Pictogram(s):



Signal Word:
DANGER

Hazard Statements:

H302 Harmful if swallowed
H315 Causes skin irritation
H317 May cause an allergic skin reaction
H372 May cause damage to organs through prolonged or repeated exposure if swallowed
H411 Toxic to aquatic life with long lasting effects

Precautionary Statements:

Prevention

P260 Do not breathe dusts/fumes/gas/mists/vapors/spray
P264 Wash hands thoroughly after handling
P270 Do not eat, drink or smoke when using this product
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 + P312 IF SWALLOWED: Call a POISON CENTER if you feel unwell.
P302 + P352 IF ON SKIN: Wash with plenty of water.
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 CONTROL CENTER or doctor
P314 Get medical advice/attention if you feel unwell.
P330 Rinse mouth
P333 + P313 If skin irritation or rash occurs: Get medical attention/advice
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage

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 (%)
Talc	14807-96-6	10-40
Trimethylolpropane polyoxypropylenetriamine	39423-51-3	10-30
Tall oil fatty acids, reaction products with tetraethylenepentamine	68953-36-6	1-10
Isophoronediamine	2855-13-2	1-10
Methylenebiscyclohexanamine, 4,4'-	1761-71-3	1-5
Polymer of epichlorohydrin / bisphenol A and diethylenetriamine	31326-29-1	1-5
Tetraethylenepentamine	112-57-2	0.1-5

The exact chemical identity and/or exact percentage (concentration) of each ingredient may be held as confidential business information (CBI). Any ingredient not disclosed in this section may have been determined not to be hazardous to health or the environment, or it may be present at a level below its disclosure threshold. Refer to Section 15 for any additional information regarding a 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 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 call a physician/doctor if symptoms develop and persist.

FIRST AID FOR INGESTION:..... SYMPTOMS: May cause gastrointestinal irritation or ulceration. May cause burns of the mouth and throat. 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 (CO₂), dry chemical. NON-SUITABLE: Direct, high-pressure 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, 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

EMERGENCY PROCEDURES: 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: DO NOT breathe vapors/aerosol/mists from heated material. Use only outdoors or with adequate ventilation. If ventilation cannot be made adequate, refer to respiratory protection in Section 8. Do not breathe 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. Do not breathe vapors or fumes from uncontrolled exotherming masses.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use with adequate general ventilation and/or local ventilation to keep exposures below established limits.

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 PROTECTION GUIDELINES: 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 the guidelines established in OSHA 1910.134 or other applicable respiratory protection standard.

This product contains may contain trace amounts of crystalline silica, which is listed by IARC as a Group 1A –carcinogenic to humans, by NTP – known to be a human carcinogen, and by ACGIH as an A2 suspected human carcinogen. No significant inhalation exposure is expected to occur during use of products in which crystalline silica is present in a liquid dispersion or when bound to other materials, such as in cured epoxies. Risk of overexposure depends on actual concentration in the formula and duration and level of exposure to dust from sanding or similar machining operations of solidified product. When sanding or machining solidified product and creating an airborne dust that may contain crystalline silica, consider the use of appropriate respiratory protection, such as a N95 particulate filter or greater.

This product contains talc, which is listed by IARC as a Group 3 – not classifiable as to its carcinogenicity to humans. No significant inhalation exposure is expected to occur during use of products in which talc is present in a liquid dispersion or when bound to other materials, such as in cured epoxies. Risk of overexposure depends on actual concentration in the formula and duration and level of exposure to dust from sanding or similar machining operations of solidified product. When sanding or machining solidified product and creating an airborne dust that may contain talc, consider the use of appropriate respiratory protection, such as a N95 particulate filter or greater.

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
Talc	14807-96-6	ACGIH TWA 2 mg/ m ³ Respirable Fraction OSHA PEL TWA 2 mg/ m ³ ; Reference Table Z-3
Trimethylolpropane polyoxypropylenetriamine	39423-51-3	No data available
Tall oil fatty acids, reaction products with tetraethylenepentamine	68953-36-6	No data available
Isophoronediamine	2855-13-2	No data available
Methylenedicyclohexanamine, 4,4'-	1761-71-3	No data available
Polymer of epichlorohydrin / bisphenol A and diethylenetriamine	31326-29-1	No data available
Tetraethylenepentamine	112-57-2	AIHA WEEL: 1 ppm; 5 mg/kg; SKIN

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM: Paste.
COLOR: Blue.
ODOR: Slight ammonia-like
ODOR THRESHOLD: No data available
pH: 12.28.
MELTING POINT / FREEZING POINT No data.
BOILING POINT (760mm/Hg): > 400°F (204°C) estimated based on similar product.
FLASH POINT: Estimated > 300°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) 1.50
BULK DENSITY 12.52 lbs./gal. (1.50 kg/L)
VAPOR DENSITY (air = 1) No data.
EVAPORATION RATE (Butyl Acetate = 1) No data.
WATER SOLUBILITY (% BY WT.) No data.

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PARTITION COEFFICIENT, n-OCTANOL/WATER (log Pow)..... No data.
KINEMATIC VISCOSITY: Paste. (mm²/s @ 20°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)
TLG-616-H / TLG-616-R	8.2	0.07

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, nitrosamines.

11. TOXICOLOGICAL INFORMATION

Ingredient Name	CAS#	LD ₅₀ Oral	LD ₅₀ Dermal	LC ₅₀ Inhalation
Talc	14807-96-6	No data available	No data available	No data available
Trimethylolpropane polyoxypropylenetriamine	39423-51-3	550 mg/kg	>1000 mg/kg	No data available
Tall oil fatty acids, reaction products with tetraethylenepentamine	68953-36-6	No data available	No data available	No data available
Isophoronediamine	2855-13-2	1030 mg/kg	>2000 mg/kg	>5.01 mg/l dust/mist 4h
Methylenebiscyclohexanamine, 4,4'-	1761-71-3	380 mg/kg	>1000	No data
Polymer of epichlorohydrin / bisphenol A and diethylenetriamine	31326-29-1	1620 mg/kg	No data available	No data available
Tetraethylenepentamine	112-57-2	1600 mg/kg	1260 mg/kg	No data available

Note: Results in this table were derived using the appropriate rat and rabbit species unless otherwise noted.

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 .

Dermal: Not classified. Based on available data this product does not meet classification criteria.

Inhalation: Not classified. Based on available data this product does not meet classification criteria.

SKIN CORROSION / IRRITATION: Category 2. Causes skin irritation. Prolonged skin contact may result in severe Irritation due to high alkalinity. 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 this product does not meet classification criteria.

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

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

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

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

This product contains may contain trace amounts of crystalline silica, which is listed by IARC as a Group 1A –carcinogenic to humans, by NTP – known to be a human carcinogen, and by ACGIH as an A2 suspected human carcinogen. No significant inhalation exposure is expected to occur during use of products in which crystalline silica is present in a liquid dispersion or when bound to other materials, such as in cured epoxies. Risk

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of overexposure depends on actual concentration in the formula and duration and level of exposure to dust from sanding or similar machining operations of solidified product. When sanding or machining solidified product and creating an airborne dust that may contain crystalline silica, consider the use of appropriate respiratory protection, such as a N95 particulate filter or greater.

This product contains talc, which is listed by IARC as a Group 3 – not classifiable as to its carcinogenicity to humans. No significant inhalation exposure is expected to occur during use of products in which talc is present in a liquid dispersion or when bound to other materials, such as in cured epoxies. Risk of overexposure depends on actual concentration in the formula and duration and level of exposure to dust from sanding or similar machining operations of solidified product. When sanding or machining solidified product and creating an airborne dust that may contain talc, consider the use of appropriate respiratory protection, such as a N95 particulate filter or greater.

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

SPECIFIC TARGET ORGAN TOXICITY (Repeated Exposure): STOT RE Category 2. May cause damage to organs through prolonged or repeated exposure if swallowed. Repeated ingestion can result in damage to the following organs/biological systems: liver, muscles, skeletal.

ASPIRATION HAZARD: Not classified. Based on available data this product does not meet classification criteria.

OTHER HEALTH HAZARD INFORMATION:..... None known.

12. ECOLOGICAL INFORMATION

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

CHRONIC AQUATIC TOXICITY: Aquatic Chronic Category 2. Calculated Estimate. No specific test data available for the mixture. 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 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
Talc	14807-96-6	No data available
Trimethylolpropane polyoxypropylenetriamine	39423-51-3	Acute Aquatic Cat. 2; Chronic Aquatic Cat. 2
Tall oil fatty acids, reaction products with tetraethylenepentamine	68953-36-6	No data available
Isophoronediamine	2855-13-2	Acute Aquatic Cat. 3; Chronic Aquatic Cat. 3
Methylenebis(cyclohexanamine, 4,4'-	1761-71-3	Acute Aquatic Cat. 2; Chronic Aquatic Cat. 2
Polymer of epichlorohydrin / bisphenol A and diethylenetriamine	31326-29-1	No data available
Tetraethylenepentamine	112-57-2	Acute Aquatic Cat. 2; Chronic Aquatic Cat. 2

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: Not regulated.
SHIPPING NAME:..... Not applicable.
TECHNICAL SHIPPING NAME:..... Not applicable.
HAZARD CLASS:..... Not applicable.
PACKING GROUP:..... Not applicable.
MARINE POLLUTANT: Not applicable.

CANADA TDG

UN NUMBER: Not regulated.
SHIPPING NAME:..... Not applicable.
TECHNICAL SHIPPING NAME:..... Not applicable.
HAZARD CLASS:..... Not applicable.
PACKING GROUP:..... Not applicable.
MARINE POLLUTANT: Not applicable.

IMDG

UN NUMBER:..... UN 3077
 SHIPPING NAME:..... Environmentally hazardous substance, solid, n.o.s.
 TECHNICAL SHIPPING NAME:..... Trimethylolpropane polyoxypropylenetriamine
 HAZARD CLASS:..... Class 9
 PACKING GROUP:..... PG III
 EmS Number:..... F-A, S-F
 MARINE POLLUTANT Yes

ICAO/IATA

UN NUMBER:..... UN 3077
 SHIPPING NAME:..... Environmentally hazardous substance, solid, n.o.s.
 TECHNICAL SHIPPING NAME:..... Trimethylolpropane polyoxypropylenetriamine
 HAZARD CLASS:..... Class 9
 PACKING GROUP:..... PG III
 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/NDSL)	All ingredients are listed or otherwise compliant.
Australia	AICS	All ingredients are listed or otherwise compliant.
Japan	ENCS	All ingredients are listed or otherwise compliant.
South Korea	KECI	All ingredients are listed or otherwise compliant.
China	IECSC	All ingredients are listed or otherwise compliant.
Philippines	PICCS	All ingredients are listed or otherwise compliant.

US EPA TSCA Requirements:..... No data available.

Canada WHMIS Confidential Business Information (CBI):..... No data available.

US EPA SARA TITTLE III Reporting and Notification Requirements:

Subject to Section 302 (TPQ)..... No data available.
 Subject to Section 304 (RQ)..... No data available.
 Subject to Section 311 or 312 Refer to health and physical classifications in Section 2.
 Subject to Section 313 No data available.

US STATE REGULATORY INFORMATION:

The following chemicals may be specifically regulated by individual states. For details on state regulatory requirements you should contact the appropriate state agency.

<u>COMPONENT NAME</u> <u>/CAS NUMBER</u>	<u>CONCENTRATION</u>	<u>STATE CODE</u>
Amorphous silica 7631-86-9 or 112945-52-5		PA, NJ, MA
Talc 14807-96-6		PA, NJ, MA
Crystalline silica 14808-60-7	< 0.35%	^{1,2} CA, PA, NJ, MA
Tetraethylenepentamine 112-57-2		PA

¹. These substances are known to the state of California to cause cancer or reproductive harm, or both.
². Crystalline silica, (airborne, unbound particles of respirable size) is a substance listed under California Proposition 65. As present in this product, crystalline silica does not meet that listing criteria, as it is both bound in a liquid dispersion and therefore not respirable.

16. OTHER INFORMATION

REASON FOR ISSUE:..... New product.
PREPARED BY:..... Gougeon Brothers, Inc.
APPROVED BY:..... G. House
TITLE:..... Health, Safety & Environmental Manager
APPROVAL DATE:..... April 9, 2018
SUPERSEDES DATE:..... Not applicable.
SDS VERSION:..... TLG-616-H-2018a

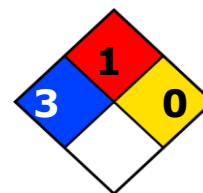
OTHER HAZARD INFORMATION AND RATING SYSTEMS:

HMIS® RATING

NFPA® 704 CODES

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HEALTH:	3
FLAMMABILITY:	1
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	



Approximate HMIS and NFPA Risk Ratings Legend:
0 = Low or None; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe

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