Safety Data Sheet

1. Product and Company Identification

Product Name: **EpoPro® 157A**
Material Uses: Epoxy Encapsulating & Casting Resin
(M)SDS#: 157A-20220203
Validation Date: February-03-2022
Supplier/Manufacturer: Specialty Polymers & Services, Inc. (SP&S, Inc.)
27822 Fremont Court
Valencia, California (CA) 91355, U.S.A.
Non-emergency phone number: (661) 294-1790 (7AM – 5PM PST)
E-mail: msds@spolymers.com

In case of emergency: Chemtrec (800) 424-9300 or (703) 527-3887

2. Hazards Identification

GHS CLASSIFICATION OF SUBSTANCE OR MIXTURE:

Skin corrosion/irritation:	Category 2, H315	Eye damage/irritation:	Category 2, H319
Skin sensitization:	Category 1, H317	Germ cell mutagenicity:	Category 2, H341
Carcinogenicity:	Category 2, H351	Flammable liquid:	Category 4, H227
Aquatic Hazard (Chronic):	Category 2, H411		

GHS LABEL ELEMENTS:

HAZARD SYMBOLS:

SIGNAL WORDS: Warning!

HAZARD STATEMENTS:

H315 Causes skin irritation
H317 May cause an allergic skin reaction
H351 Suspected of causing cancer
H411 Toxic to aquatic life with long lasting effects
H319 Causes serious eye irritation
H341 Suspected of causing genetic defects
H227 Combustible liquid

PRECAUTIONARY STATEMENTS:

PREVENTION:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261 Avoid breathing dust/fume/mist/vapor/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, clothing, and eye/face protection.
P281 Use personal protective equipment as required.

RESPONSE:
P301+P330+P331+P312 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call POISON CENTER and/or doctor if you feel unwell.
P303+P361+P364+P353+P352 IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash before reuse. Rinse skin with water/shower. Wash with plenty of soap and water.

P333+P313 If skin irritation or rash occurs: Get medical attention.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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 attention.
P308+P313 IF exposed or concerned: Get medical attention.
P370+P378 In case of fire: Use recommended extinguishing media for extinction.
P391 Collect spillage.

STORAGE: P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

DISPOSAL: P501 Dispose of contents and containers in accordance with local, regional and international regulations.

Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS) – Annex III

See toxicological information (section 11)
General Information: Read entire MSDS for a more thorough evaluation of the hazards

3. Composition / Information on Ingredients

Name	CAS Number	%
Bisphenol A epoxy resin	25068-38-6	30 – 60
Butyl-2,3-epoxypropyl ether	2426-08-6	1 – 10

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

4. First Aid Measures

Eye Contact: Check for and remove any contact lenses. Immediately flush eyes for at least 15 minutes with running water. Hold eyelids apart to ensure rinsing of the entire eye surface and lids with water. Get medical attention if irritation occurs.

Skin Contact: In case of contact, wash affected areas with plenty of water, and soap, if available, for several minutes. Remove and clean contaminated clothing and shoes before re-use. Get medical attention if irritation occurs.

Inhalation: Move exposed person to fresh air. If not breathing, give artificial respiration or oxygen. If breathing is difficult, transport to medical care and, if available, give supplemental oxygen. Loosen tight clothing such as a collar, tie, belt, or waistband. Get immediate medical attention.

Ingestion: Wash out mouth with water. If swallowed dilute by giving two (2) glasses water to drink. Do not induce vomiting until direct to do so by medical personnel. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Note to physician: No specific treatment. Treat symptomatically. Call poison control center if large quantities were ingested

5. Fire-Fighting Measures

Flash point: > 60°C (140°F) closed cup

Hazardous Thermal Decomposition Products: Decomposition products may include the following materials: carbon dioxide, carbon monoxide, phenolics, metal oxides and other oxides. Smoke may contain particles of the original material as well. Exposure to decomposition products may be harmful to health.

Extinguishing Media: Carbon dioxide, foam, dry chemical, water spray as suitable for the surrounding fire. Do not use direct water stream which may spread fire.

Special Exposure Hazards: Promptly isolate the scene by removing all persons from the vicinity of the fire. No actions shall be taken involving any personal risk or without suitable training.

Special Protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Prevent fire-fighting waters from entering sewer or waterways.

6. Accidental Release Measures

Personal Precautions: No actions shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering area. Do not touch or walk through spilled material. Avoid breathing vapor or mist and provide adequate

ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental Precautions: Avoid dispersal of spilled material and runoff that leads to contact with soil, waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution.

Methods of Clean Up: Stop leak if without risk. Move containers from spill area. Approach spill from up wind if possible. Prevent spill from entering sewers, rivers and other water courses, basements, or confined areas. Wash into effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material (e.g. sand, earth, vermiculite, or diatomaceous earth) and place in container for disposal according to local regulations. Dispose of only using a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information.

7. Handling and Storage

Handling: Wear appropriate personal protective equipment (see Section 8) when handling. Eating, drinking, and smoking should be prohibited in areas where chemicals are handled, stored, or processed. Workers should wash hands and face before eating, drinking, and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should not be employed in processes where this material is used. Keep in the original container or a suitable alternate made from a compatible material. Keep all containers tightly closed when not in use. Empty containers retain product residue and should be disposed of properly. Do not reuse empty containers for other purposes or to hold other materials.

Storage: Store in accordance with local regulations. Store in original containers, at 15°C - 40°C. Keep away from incompatible materials (see Section 10) and food and drink. Keep all containers tightly closed when not in use and tightly re-seal after use. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Keep away from heat, sparks, open flame, and direct sunlight.

8. Exposure Controls / Personal Protection

Recommended Monitoring Procedures: If this product contains ingredients with exposure limits, personal, workplace, atmospheric, or biological monitoring may be required to determine the effectiveness of the ventilation system or other control measures and/or to determine whether it is necessary to use respiratory protective equipment. Consider European Standard EN 689 or similar industry or governmental guidelines for appropriate methods for the assessment of exposure by inhalation to chemical agents and/or hazardous substances.

Engineering measures: No special ventilation requirements are necessary for this product. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure below the recommended or statutory limits

Hygiene measures: Wash hands, forearms, and face thoroughly after handling any chemical products, before eating, smoking, and using the lavatory and at the end of the work period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protection

Respiratory: A respiratory protection program in compliance with 29CFR1910.134, or other applicable regulatory standard must be followed whenever exposure limits may be exceeded. If engineering controls are not feasible, or if inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands: Wear neoprene, nitrile rubber or other suitable impervious gloves; consider European Standard EN374 or similar industry or governmental guidelines. Consider the parameters specified by the glove manufacture and check gloves during use to ensure they are retaining their protective properties. Gloves selected must have a breakthrough rating appropriate for the work shift. If a risk assessment indicates that it is necessary, gloves should always be worn when handling chemical products.

Eyes: When a risk assessment indicates, safety eyewear complying with an approved standard, such as OSHA Standard 29CFR1910.133 or European Standard EN166, should be used to avoid exposure to liquid splashes, mists, or dusts. If contact is possible, at a minimum use chemical splash googles. If significant splash hazard may occur, consider using a full-face shield.

Skin: Personal Protective equipment for the body should be selected based on the task being performed and the risks involved. Typical protective equipment includes non-absorbent lab coats, disposable protective sleeves, coats, or whole-body suits. Consider CFR1910.132 and CFR1910.136 for OSHA approved standards on protective clothing and footwear. Consider seeing a safety specialist to determine the appropriate level of protection for your task.

Environmental Exposure Controls: Emissions from ventilation or work processes should be checked to ensure they comply with the requirements of environmental regulations. In some cases, fume scrubbers, filters, or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and Chemical Properties

Appearance:	White paste	Odor	Faint odor
Boiling Point:	Not determined	Freezing Point:	Not determined
Flash Point:	> 60°C (140°F) closed cup	pH:	Not determined
Auto-ignition Temperature:	Not determined	Flammable Limits:	Not determined
Vapor Pressure:	Not determined	Water Solubility:	<0.1%
Specific Gravity:	1.404	Vapor Density:	Not determined
Evaporation Rate:	Not determined	VOC:	Not determined
Viscosity:	~808,000 cP		

10. Stability and Reactivity

Chemical Stability: This product is stable, under normal conditions of storage and use, hazardous reactions will not occur. Upon prolonged storage the material may crystallize which is a reversible condition; crystallized material can be liquefied back by heating slowly to 50°C for 6-24 hours.

Hazardous Polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur. Reaction with peroxides may result in violent decomposition of peroxide with possible explosion hazard. Masses of more than one pound (0.5 kg) product plus an aliphatic amine will cause irreversible polymerization with considerable heat build-up.

Conditions to Avoid: High temperatures and exposure to strong oxidizing agents, strong reducing agents, acids, bases, amines, and mercaptans. Potentially violent decomposition can occur above 350°C.

Hazardous Decomposition: Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal Decomposition products may include the following materials: carbon dioxide, carbon monoxide, phenolics, metal oxides and other oxides. Smoke may contain particles of the original material as well. Exposure to decomposition products may be harmful to health.

11. Toxicological Information

Acute Toxicity

Product/Ingredient Name	Test	Endpoint	Species	Result
Bisphenol A Epoxy Resin	-	LC0 Inhalation Vapor	Rat – Male	0.00001 ppm
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rat – Male & Female	>2,000 mg/kg
	OECD 420 Acute Oral Toxicity – Fixed Dose	LD50 Oral	Rat – Female	>2,000 mg/kg
Butyl-2,3 epoxypropyl ether	-	LC0 Inhalation Vapor	Rat – Male	>3500 ppm
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rat – Male & Female	2520 mg/kg
	OECD 420 Acute Oral Toxicity	LD50 Oral	Rate – Female	>1000 mg/kg

Irritation / Corrosion

Product/Ingredient Name	Test	Species	Result
Bisphenol A Epoxy Resin	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin – Mild irritant
	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes – Mild irritant
Butyl-2,3 epoxypropyl ether	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin – Severe irritant
	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes – Severe irritant

Sensitizer

Product/Ingredient Name	Test	Species	Result
Bisphenol A Epoxy Resin	OECD 429 Skin Sensitization: local lymph node assay	Skin / Mouse	Sensitizing
Butyl-2,3 epoxypropyl ether	-	Guinea pig	Possible Skin Sensitizer
	-	Guinea pig	Possible Respiratory Sensitizer

Mutagenicity

Product/Ingredient Name	Test	Result
Bisphenol A Epoxy Resin	Experiment – invitro, bacteria, metabolic activation +/-	Positive
	Experiment – invitro, mammalian-animal, somatic cells, metabolic activation +/-	Positive
	Experiment – invivo, mammalian-animal, germ cells, metabolic activation +/-	Negative

	Experiment – invivo, mammalian-animal, somatic cells, metabolic activation +/-	Negative
Butyl-2,3 epoxypropyl ether	Ames test	Positive
	Mouse, sister chromatid exchange micronucleus test	Positive
	Unscheduled DNA synthesis	Positive
	Mouse, intraperitoneal: micronucleus test	675 mg/kg
	Hamster, lung: sister chromatid exchange	2500 µmol/l

Conclusion/ Summary: the weight of scientific evidence indicates that one or more components of this product are suspected to be genotoxic

Carcinogenicity

Crystalline Silica in the form of respirable dust is listed by IARC as a class 1 (known human carcinogen). However, in this product the silica is encapsulated in resin and therefore not available to be exposed to users as a respirable dust.

Titanium dioxide is listed by IARC as possibly carcinogenic to humans (group 2B). This listing is based on inadequate evidence of carcinogenicity in humans and sufficient evidence in experimental animals. In lifetime inhalation studies of rats, airborne respirable-size titanium dioxide particles have been shown to cause lung tumors at concentration levels associated with substantial particle lung burdens and consequential pulmonary overload and inflammation. However, other laboratory animals such as mice and hamsters did not develop lung tumors under similar testing with titanium dioxide. Furthermore, human epidemiology studies do not suggest an association between occupational exposure to titanium dioxide and risk for cancer. In this product, the titanium dioxide is encapsulated in resin and therefore not available to be exposed to users as a respirable dust.

No other component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC, NTP or OSHA; however, one or more components of this product is suspected of causing cancer.

Reproductive Toxicity

Product/Ingredient Name	Test	Species	Maternal Toxicity	Fertility	Developmental Effects
Bisphenol A Epoxy Resin	OECD 416 Two generation reproduction toxicity study	Rat	Negative	Negative	Negative

Teratogenicity

Product/Ingredient Name	Test	Species	Results
Bisphenol A Epoxy Resin	OECD 414 Prenatal developmental Toxicity Study	Rat – Female	Negative – oral
	EPA CFR	Rabbit – Female	Negative – dermal
	OECD 414 Prenatal developmental Toxicity Study	Rabbit – Female	Negative – oral

Potential Acute Health Effects

Inhalation: May be harmful by inhalation; may be irritating to the respiratory tract; may cause respiratory sensitization. There may be coughing, wheezing, nausea, vomiting, stomach pain, drowsiness.

Ingestion: May cause irritation of the digestive tract; nausea and stomach pain may occur.

Skin Contact: Causes mild skin irritation. May cause sensitization; once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Eye Contact: Causes serious eye irritation; pain, irritation, watering, redness

Potential Chronic Health Effects

Product/Ingredient Name	Test	Endpoint	Species	Results
Bisphenol A Epoxy Resin	OECD 408 Repeated Dose 90-Day Oral Toxicity Study	Sub-chronic NOAEL Oral	Rat-Male, Female	50 mg/kg
	OECD 411 Sub-chronic Dermal Toxicity: 90-day Study	Sub-chronic NOAEL Dermal	Rat-Male, Female	10 mg/kg
	OECD 411 Sub-chronic Dermal Toxicity: 90-day Study	Sub-chronic NOAEL Dermal	Mouse-Male	100 mg/kg

General: Once sensitized, an allergic reaction may occur when subsequently exposed to very low levels.

Target Organs: No known significant effects or critical hazards

Carcinogenicity: Suspected of causing cancer.

Mutagenicity: Suspected of causing genetic defects.

Teratogenicity: No known significant effects or critical hazards

Developmental Effects: No known significant effects or critical hazards

Fertility Effects: No known significant effects or critical hazards

12. Ecological Information

Environmental Effects: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Water polluting material. May be harmful to the environment if released in large quantities.

Aquatic Ecotoxicity

Product/Ingredient Name	Test	Endpoint	Exposure	Species	Result
Bisphenol A Epoxy Resin	-	Acute EC50	72 hours Static	Algae	9.4 mg/l
	OECD 202 Daphnia Sp. Acute Immobilization Test	Acute EC50	48 hours Static	Daphnia	1.7 mg/l
	-	Acute IC50	3 hours Static	Bacteria	>100 mg/l
	OECD 203 Fish, Acute toxicity test	Acute LC50	96 hours Static	Fish	1.5 mg/l
	OECD 211 Daphnia Magna Reproduction test	Chronic NOEC	21 days Semi-Static	Daphnia	0.3 mg/l
Butyl-2,3 epoxypropyl ether	-	Acute EC50	72 hours Static	Algae	35 mg/l
	OECD 202 Daphnia Sp. Acute Immobilization Test	Acute EC50	48 hours Static	Daphnia	>100 mg/l
	OECD 203 Fish, Acute toxicity test	Acute LC50	96 hours Static	Fish	65 mg/l

Persistence and Degradability

Product/Ingredient Name	Test	Period	Result
Bisphenol A Epoxy Resin	OECD derived from OECD 301F (Biodegradation test)	28 days	5%

Product/Ingredient Name	Aquatic half-life	Photolysis	Biodegradability
Bisphenol A Epoxy Resin	Fresh water 3.58 days – 7.1 days	-	Not readily

Bioaccumulative potential

Product/Ingredient Name	Log P_{ow}	BCF	Potential
Bisphenol A Epoxy Resin	3.242	31	Low

Other adverse effects: No known significant effects or critical hazards

Other information: BOD5: Not determined COD: Not Determined TOC: Not determined

13. Disposal Consideration

Waste Disposal Method: Disposal of this products, solutions, and by-products should always comply with the requirements of environmental and waste disposal legislation and any regional or local authority requirements. Dispose of surplus, non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed on untreated to the sewer system unless this is complaint with all applicable laws and regulations. Incineration by an approved and licensed contractor is the most common disposal method. Packaging materials that and absorbents containing the product can typically be landfilled or incinerated. Contact local authorities to determine the proper means of disposal in your area.

14. Transport Information

DOT (US) Classification: Not regulated for transportation purposes under 49CFR in non-bulk (less than 450L) when transported by motor vehicle, rail car, or aircraft.

TDG (Canadian) Classification: Not regulated for transportation purposes when transported by road or rail.

IATA – small package sizes: Container sizes with net contents of ≤ 5 L (for liquids) or ≤ 5 kg (for solids) are not subject to dangerous good regulations per special provision A197, provided that the packagings meet the general good quality packagings provisions of 5.0.2.4.1, 5.0.2.6.1.1., and 5.0.2.8. If special revision A197 is not applicable due to operator, state, or other variations then the same sizes can be shipped as Limited Quantity using packaging instruction Y964 as long as the shipment is complaint with all applicable operator variations. Environmentally hazardous substances markings and UN boxes are not required when shipping using the Limited Quantity exemption and packaging instruction Y964.

IMDG (Ocean Shipments) – small package sizes: under IMDG Code 2.10.2.7, Marine pollutants with the shipping names "UN 3077 Environmentally hazardous substance, solid, n.o.s." and "UN 3082 Environmentally hazardous substance, liquid, n.o.s." shipped in quantities of ≤ 5 L per package are not subject to regulation other than specific packaging provisions.

IATA & IMDG shipments of packages sizes greater than 5 Liters

ID Number: UN3082 **Label:** Marine Pollutant

Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy Resin)

Hazard Class: 9 **Packing Group:** PGIII

15. REGULATORY INFORMATION

US Federal Regulations:

Occupational Safety and Health Act (OSHA): This product is a hazardous chemical under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III: Section 304 – CERCLA: This product does not contain chemicals regulated under Section 304 as extremely hazardous substance(s) for emergency release notification ("CERCLA" List):

SARA Title III: Section 311/312 – Hazard Communication Standard (HCS): Immediate (acute) health hazard

Delayed (chronic) health hazard

SARA Title III: Section 313 Toxic Chemical List (TCL): This product does not contain a toxic chemical for routine annual Toxic Chemical Release Reporting under section 313 (40 CFR 372).

TSCA Section 8(b) – Inventory Status: All chemical(s) comprising this product are listed on the TSCA inventory.

TSCA Section 12(b) – Export Notification: This product does not contain chemicals which are subject to Section 12(b) export notification.

State Regulations:

California Proposition 65: ⚠ **WARNING:** This product can expose you to chemicals including Epichlorohydrin, which is is known to the State of California to cause cancer, and Epichlorohyrdin and Bisphenol A, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

International Regulations:

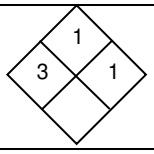
WHMIS: Class D-2A: Material causing other toxic effects.
Class D-2B: Material causing other toxic effects.

International Lists:

Australia Inventory (AICS):	all components are listed or exempt	Japan Inventory (ENCS):	all components are listed or exempt
Canadian Inventory (CEPA-DSL):	all components are listed or exempt	Korea Inventory (ECL):	all components are listed or exempt
China Inventory (IECSC):	all components are listed or exempt	Philippines Inventory (PICCS):	all components are listed or exempt

16. OTHER INFORMATION

Hazardous Material Information System (HMIS) - USA	
Health	3
Flammability	1
Physical Hazards	1
Personal Protection	C*

National Fire Protection Association (USA):	

*suggested minimum personal protection equipment. End user must determine appropriateness of these suggestions for their applications and usage conditions.

Reason Issued: update
Prepared by: Preston White **Approved by:** Chris Meyer Title: Vice President

NOTICE TO READER: While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF PRODUCTS FOR THE USER'S PARTICULAR PURPOSE(S).

THIS PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.