Safety Data Sheet

1. Product and Company Identification

Product Name: **EpoPro® 679B**
Material Uses: Adhesive, impregnating, casting, potting and coating Hardener
(M)SDS#: 679B-20230414
Validation Date: April-14-2023
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:

Eye damage/irritation: Category 1, H318
Skin sensitization: Category 1, H317
Respiratory sensitization: Category 1, H334

GHS LABEL ELEMENTS:

HAZARD SYMBOLS:

SIGNAL WORDS: Danger

HAZARD STATEMENTS:

H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

PRECAUTIONARY STATEMENTS:

PREVENTION:
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/eye protection/face protection.
P285 In case of inadequate ventilation wear respiratory protection.

RESPONSE:
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs: Get medical attention.
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. Immediately call a POISON CENTER or doctor/physician.
P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.

STORAGE: None

DISPOSAL: P501 Dispose of contents/container to an approved facility in accordance with local, regional, national 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	%
Tetrahydro-4-methylphthalic anhydride	34090-76-1	70 – 90
1,2,3,6-tetrahydrophthalic anhydride	85-43-8	10 – 20

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 immediately. Chemical burns must be treated promptly by a physician. Continue rinsing eyes during transport to hospital.
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:	159°C (318°F) closed cup
Hazardous Thermal Decomposition Products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, and other oxides. Burning produces noxious and toxic fumes.
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. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Do not allow run-off from fire fighting to enter drains or water courses.

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 an 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. Avoid exposure – obtain special instructions before use. Avoid formation of aerosol. Do not breathe vapor/dust. Avoid contact with skin and eyes. Eating, drinking, and smoking should be prohibited in areas where chemicals are handled, stored, or processed. Workers should wash their hands and face before eating, drinking, and smoking. Provide sufficient air exchange and/or exhaust in work rooms. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems should 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 18°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. Keep container upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

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 manufacturer 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:	Clear, light yellow to amber liquid	Odor	Slight, ammoniacal
Boiling Point:	>200°C (>392°F)	Freezing Point:	Not available
Flash Point:	159°C (318°F) closed cup	pH:	ca. 3 (20°C / 68°F), concentration: 500 g/l
Auto-ignition Temperature:	Not available	Flammable Limits:	Not available
Vapor Pressure:	ca. 0.01 hPa at 20°C (68 °F)	Water Solubility:	Partly soluble (20°C / 68°F)
Specific Gravity:	1.18 – 1.24 g/cm^3 (25°C / 77°F)	Vapor Density:	Not available
Evaporation Rate:	<1 (butyl acetate =1)	VOC:	Not available
Viscosity:	50 – 80 cP (25°C / 77°F)		

10. Stability and Reactivity

Chemical Stability:	This product is stable, under normal conditions of storage and use, hazardous reactions will not occur.
Hazardous Polymerization:	Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to Avoid:	High temperatures and exposure to strong oxidizing agents, acids, and bases and bulk epoxy resins.
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, and other oxides. Burning produces noxious and toxic fumes.

11. Toxicological Information

Acute Toxicity

Product/Ingredient Name	Test	Endpoint	Species	Result
Product	-	LD50 Oral	Rat	> 2,000 mg/kg
	-	LD50 Dermal	-	2,907 mg/kg

Irritation / Corrosion

Product/Ingredient Name	Test	Species	Result
Product	-	Rabbit	Causes serious eye damage
Tetrahydro-4-methylphthalic anhydride	-	Rabbit	Skin – No irritation
	OECD Test Guideline 405	Rabbit	Risk of serious damage to eyes
1,2,3,6-tetrahydrophthalic anhydride	OECD Test Guideline 404	Rabbit	Skin – No irritation
	OECD Test Guideline 405	Rabbit	Risk of serious damage to eyes

Sensitizer

Product/Ingredient Name	Test	Species	Result
Product	-	Skin / Guinea Pig	Sensitizing
	-	Respiratory / Human	Sensitizing

Mutagenicity

Product/Ingredient Name	Test	Result
Tetrahydro-4-methylphthalic anhydride	Experiment – invitro, OECD 476, Gene mutation test, mouse lymphoma cells, metabolic activation +/-	Negative
	Experiment – invitro, OECD 473, Chromosome aberration test, Chinese hamster fibroblasts, metabolic activation +/-	Negative
	Experiment – invitro, OECD 471, Ames test, Salmonella tryphimurium and E. coli, metabolic activation +/-	Negative
1,2,3,6-tetrahydrophthalic anhydride	Experiment – invitro, OECD 473, Chromosome aberration test, Human lymphocytes, metabolic activation +/-	Negative
	Experiment – invitro, OECD 476, gene mutation test, mouse lymphoma cells, metabolic activation +/-	Negative
	Experiment – invitro, OECD 471, Ames test, Salmonella tryphimurium and E. coli, metabolic activation +/-	Negative

Conclusion/ Summary: – the weight of scientific evidence indicates that the components of this product are not genotoxic.

Carcinogenicity

No 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, ACGIH, NTP, or OSHA.

Reproductive Toxicity

Product/Ingredient Name	Test	Species	Maternal Toxicity	Fertility	Developmental Effects
Tetrahydro-4-methylphthalic anhydride	OECD Test Guideline 422 – Rat (male and female), Oral, Dose: 0,30,100, and 300 mg/kg, General Toxicity – Parent: NOAEL > 300 mg/kg body weight, General Toxicity F1: NOAEL > 300 mg/kg body weight				
1,2,3,6-tetrahydrophthalic anhydride	OECD Test Guideline 421 – Rate (male and female), Oral, General Toxicity – Parent: NOAEL 250 mg/kg body weight				

Teratogenicity

Product/Ingredient Name	Test	Species	Results

No data available			

Potential Acute Health Effects

Inhalation: May cause allergy or asthma symptoms or breathing difficulties if inhaled
Ingestion: May be harmful if swallowed
Skin Contact: May be irritating to skin. May cause an allergic skin reaction.
Eye Contact: Causes serious eye damage.

Potential Chronic Health Effects

Product/Ingredient Name	Test	Endpoint	Species	Results
Tetrahydro-4-methylphthalic anhydride	OECD Test Guideline 422, Exposure time: 49 days, Number of exposures: daily	NOAEL Oral, Dose: 0,30,100,300 mg/kg/day	Rat – male & female	100 mg/kg
1,2,3,6-tetrahydrophthalic anhydride	Regulation (EC) No. 440/2008, Annex, B.7	NOAEL Oral	Rat – male & female	600 mg/kg
	Regulation (EC) No. 440/2008, Annex, B.7	NOAEL Oral	Rat – male & female	100 mg/kg

General: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels
Target Organs: No known significant effects or critical hazards
Carcinogenicity: No known significant effects or critical hazards
Mutagenicity: No known significant effects or critical hazards
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
Tetrahydro-4-methylphthalic anhydride	OECD Test Guideline 203, flow-through test	Acute LC50	96 hours	Fish	>100 mg/l
	OECD Test Guideline 202	Acute EC50	48 hours Static	Daphnia	130 mg/l
	OECD Test Guideline 201	Acute EC50	72 hours Static	Algae	64 mg/l
	OECD Test Guideline 201	Acute NOEC	72 hours Static	Algae	32 mg/l
	OECD Test Guideline 204, flow-through test	Chronic NOEC	14 days	Fish	100 mg/l
	OECD Test Guideline 209, flow-through test	Acute EC50	3 hours	Activated Sludge	69.87 mg/l
	OECD Test Guideline 211	Chronic NOEC	21 days	Daphnia	20 mg/l
1,2,3,6-tetrahydrophthalic anhydride	OECD Test Guideline 203	Acute LC50	-	Fish	>100 mg/l
	OECD Test Guideline 202, Immobilization	Acute EC50	48 hours	Daphnia	>100 mg/l
	OECD Test Guideline 201, Growth inhibition	Acute EC50	72 hours	Algae	65.3 mg/l
	OECD Test Guideline 201	Acute NOEC	72 hours	Algae	50 mg/l

Persistence and Degradability

Product/Ingredient Name	Test	Period	Result
Tetrahydro-4-methylphthalic anhydride	OECD Test Guideline 301C	28 days	0%
1,2,3,6-tetrahydrophthalic anhydride	Regulation (EC) No. 440/2008, Annex, C.4-A	7 days	2%
	Regulation (EC) No. 440/2008, Annex, C.4-A	14 days	17%
	Regulation (EC) No. 440/2008, Annex, C.4-A	21 days	58%
	Regulation (EC) No. 440/2008, Annex, C.4-A	27 days	98%
	Regulation (EC) No. 440/2008, Annex, C.4-A	28 days	99%

Product/Ingredient Name	Aquatic half-life	Photolysis	Biodegradability
Tetrahydro-4-methylphthalic anhydride	4.3 minutes (41°F / 5°C), pH:7	-	Not readily
	3.2 minutes (68°F / 20°C), pH:7		
	2.9 minutes (77°F / 25°C), pH:7		
1,2,3,6-tetrahydrophthalic anhydride	6.92 minutes (68°F / 20°C), pH:7	-	Biodegradable, but failing 10-d window
	2.17 minutes (86°F / 30°C), pH:7		
	1.05 minutes (122°F / 50°C), pH:7		

Bioaccumulative potential

Product/Ingredient Name	Log P_{ow}	BCF	Potential
Tetrahydro-4-methylphthalic anhydride	1.88 (104°F / 40°C), pH:5.9	-	-
1,2,3,6-tetrahydrophthalic anhydride	1.29 (104°F / 40°C), pH:5.9	3.30	-

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 untreated to the sewer system unless this is compliant with all applicable laws and regulations. Incineration by an approved and licensed contractor is the most common disposal method. Packaging materials 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 as dangerous goods.

IMDG: Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code: Not applicable for product as supplied.

IATA: Not regulated as dangerous goods.

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): Per the June 13, 2016 Federal Register notice, EPA harmonized the EPCRA 311/312 hazard categories with the 2012 OSHA hazard communication standard for classifying and labeling of chemicals (i.e., GHS). Please refer to section 2 of the SDS to identify the appropriate hazard categories for reporting purposes.

SARA Title III: Section 313 Toxic Chemical List (TCL): This product does not contain any toxic chemicals 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: No ingredients requiring a warning under CA Prop 65.

International Regulations:

WHMIS: Class D-2A: Material causing other toxic effects (Very toxic Material)
Class D-2B: Material causing other toxic effects (Toxic Material)

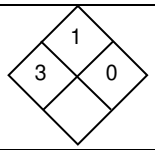
International Lists:

Australia Inventory (AICS):	all components are listed or exempt	Malaysia Inventory (EHS register):	not determined
Canadian Inventory (DSL):	all components are listed or exempt	New Zealand Inv. of Chem. (NZIoC):	Not in compliance with inventory
China Inventory (IECSC):	all components are listed or exempt	Philippines Inventory (PICCS):	all components are listed or exempt
Japan Inventory (ENCS):	all components are listed or exempt	Taiwan Inventory (TCSI):	all components are listed or exempt
Korea Inventory (ECL):	all components are listed or exempt		

16. OTHER INFORMATION

Hazardous Material Information System (HMIS) - USA	
Health	3
Flammability	1
Physical Hazards	0
Personal Protection	X*

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

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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.