

Safety Data Sheet



1. Product and Company Identification

Product Name: **EpoPro® 911-1**
Material Uses: Potting & Encapsulating Hardener
(M)SDS#: 911-1-20200527
Validation Date: May-27-2020
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 sensitization:	Category 1, H317	Eye damage/irritation:	Category 1, H318
Acute Toxicity (dermal):	Category 3, H311	Reproductive Toxicity:	Category 1B, H360Df
Acute Toxicity (inhalation):	Category 3, H331	Germ Cell Mutagenicity:	Category 2, H341
Acute Toxicity (oral):	Category 3, H301	Flammable Liquid	Category 4, H227

GHS LABEL ELEMENTS:

HAZARD SYMBOLS:



SIGNAL WORDS:

Danger!

HAZARD STATEMENTS:

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H311 Toxic in contact with skin.

H360Df May damage the unborn child. Suspected of damaging fertility.

H331 Toxic if inhaled.

H341 Suspected of causing genetic defects.

H301 Toxic if swallowed

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, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260 Do not breathe mists.

P261 Avoid breathing 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, clothing, and eye/face protection.

RESPONSE: P301+P330+P331+P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER and/or doctor/physician.
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.
P312 Call a POISON CENTER and/or doctor if you feel unwell.
P333+P313 If skin irritation or rash occurs: Get medical attention.
P304+P340+P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER and/or doctor/physician.
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/doctor.
P308+P313 IF exposed or concerned: Get medical attention.
P370+P378 In case of fire: Use CO₂, extinguishing powder, alcohol resistant foam, or water spray to extinguish.
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	%
m-Phenylenediamine	108-45-2	40 – 80
1-ethylpyrrolidin-2-one	2687-91-4	20 – 60

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 immediate medical attention. If medical care is not promptly available, continue to irrigate.
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 immediate medical attention. If medical care is not promptly available, continue to irrigate.
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:	Treat symptomatically. Call poison control center if large quantities were ingested

5. Fire-Fighting Measures

Flash point:	> 91°C (> 196°F)
Hazardous Thermal Decomposition Products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, and hydrogen cyanide (hydrocyanic acid). Burning produces noxious and toxic fumes.
Extinguishing Media:	Carbon dioxide, foam, dry chemical, water spray as suitable for the surrounding 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.

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. Ensure good ventilation. Enclosure or extractor facilities are required. Not less than 5 – 15 air exchanges per hour. Avoid breathing vapors and/or aerosols. 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. Avoid contact with skin. Remove contaminated clothing and protective equipment before entering eating areas. Avoid repeated exposure. 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 40°C or less. Product is subject to partial crystallization at room temperature. To remove crystals warm gently to at least 65°C and maintain until all crystals have gone into solution. May discolor on exposure to light. Protect from light. Sensitive to air. 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.

8. Exposure Controls / Personal Protection

Ingredient	Exposure Control
m-Phenylenediamine	ACGIH TLV – TWA: 0.1 mg/m ³
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 butyl rubber, multilayer (Polyethylene/Ethylene Vinylalcohol-Copolymer/Polyethylene) 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 goggles. 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:	Light brown semi crystallized liquid at room temperature	Odor	ammoniacal
Boiling Point:	Not determined	Freezing Point:	Not determined
Flash Point:	>91°C (>196°F)	pH:	Not determined
Auto-ignition Temperature:	Not determined	Flammable Limits:	Not determined
Vapor Pressure:	Not determined	Water Solubility:	Miscible
Specific Gravity:	1.11	Vapor Density:	Not determined
Evaporation Rate:	Not determined	VOC:	~333 g/ L (estimated)
Viscosity:	Not determined		

10. Stability and Reactivity

Chemical Stability:	This product is stable, under normal conditions of storage and use, hazardous reactions will not occur. Product is subject to partial crystallization at room temperature. To remove crystals warm gently to at least 65°C and maintain until all crystals have gone into solution.
Hazardous Polymerization:	Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to Avoid:	High temperatures, flames, sparks, and exposure to air, strong oxidizing agents, acids, acid anhydrides, acid halides, chloroformates, and bulk epoxy resins. May discolor on exposure to light. Protect from light. Sensitive to air.
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, nitrogen oxides, and hydrogen cyanide (hydrocyanic acid). Burning produces noxious and toxic fumes.

11. Toxicological Information

Acute Toxicity

Product/Ingredient Name	Test	Endpoint	Species	Result
m-Phenylenediamine	-	LD50 Oral	-	204 mg/kg
	-	LD50 Dermal	-	300 mg/kg
1-ethylpyrrolidin-2-one	-	LD50 Oral	Rat	3,200 mg/kg
	OECD Test Guideline 403	LC50 Inhalation	Rat	5.2 mg/l (4 hour)
	OECD Test Guideline 402	LD50 Dermal	Rat	>2,000 mg/kg

Irritation / Corrosion

Product/Ingredient Name	Test	Species	Result
1-ethylpyrrolidin-2-one	-	-	Skin – No irritant effect
	-	-	Eyes – Strong irritant

Sensitizer

Product/Ingredient Name	Test	Species	Result
m-Phenylenediamine	-	-	May cause sensitization by skin contact
1-ethylpyrrolidin-2-one	-	-	No sensitizing effects known

Mutagenicity

Product/Ingredient Name	Test	Result
m-Phenylenediamine	Possible risk of irreversible effects	

Conclusion/ Summary: one or more components are suspected of causing genetic defects.

Carcinogenicity

m-Phenylenediamine is in IARC Group 3 (Unclassifiable as to carcinogenicity in humans).

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, OSHA.

Reproductive Toxicity

Product/Ingredient Name	Test	Species	Maternal Toxicity	Fertility	Developmental Effects
1-ethylpyrrolidin-2-one	May damage the unborn child. Suspected of damaging fertility.				

Teratogenicity

Product/Ingredient Name	Test	Species	Results
1-ethylpyrrolidin-2-one	May damage the unborn child. Suspected of damaging fertility.		

Potential Acute Health Effects

Inhalation: Toxic by inhalation. Irritating to mucous membranes. Irritating to respiratory system. Avoid breathing dust.

Ingestion: Toxic if swallowed. Do not take internally. Dizziness, Nausea, Gastrointestinal disturbance, Vomiting, Diarrhea, Drowsiness.

Skin Contact: Toxic in contact with skin. Irritating to skin. May cause sensitization by skin contact. Redness. May cause dermatitis. Avoid contact with skin.

Eye Contact: Irritating to eyes. May cause severe irritation. Redness. Pain. May cause corneal injury. Avoid contact with eyes.

Potential Chronic Health Effects

Product/Ingredient Name	Test	Endpoint	Species	Results
m-Phenylenediamine	Avoid repeated exposure. Target Organ Effects. Possible risk of irreversible effects.			
General:	Once sensitized, an allergic reaction may occur when subsequently exposed to very low levels			
Target Organs:	Eyes, skin, Respiratory system, Liver, Kidney, Bladder.			
Carcinogenicity:	No known significant effects or critical hazards			
Mutagenicity:	Suspected of causing genetic defects. Possible risks of irreversible effects.			
Teratogenicity:	May damage the unborn child. Suspected of damaging fertility.			
Developmental Effects:	May damage the unborn child. Suspected of damaging fertility.			
Fertility Effects:	May damage the unborn child. Suspected of damaging fertility.			

12. Ecological Information

Environmental Effects: Very 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
m-Phenylenediamine	-	Acute LC50	96 hours	Fish	1,600 mg/l
	-	Acute EC50	48 hours	Daphnia	5.9 mg/l
	-	Acute EC50	72 hours	Algae	2.4 mg/l
1-ethylpyrrolidin-2-one	OECD Test Guideline 203	Acute LC50	96 hours Static	Fish	464 - 999 mg/l
	OECD Test Guideline 202	Acute EC50	48 hours Static	Daphnia	> 100 mg/l
	OECD Test Guideline 201	Acute ErC50	72 hours Static	Algae	> 101 mg/l
	OECD Test Guideline 209	Acute EC20	30 minute Static	Bacteria	> 1000 mg/l

Persistence and Degradability

Product/Ingredient Name	Test	Period	Result
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m-Phenylenediamine	-	28 days	2 %
Product/Ingredient Name	Aquatic half-life	Photolysis	Biodegradability
m-Phenylenediamine	-	-	Not readily
1-ethylpyrrolidin-2-one	-	-	Readily

Bioaccumulative potential

Product/Ingredient Name	Log P _{ow}	BCF	Potential
m-Phenylenediamine	-0.3	-	-

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: Non-Bulk		Label:	Toxic
Proper Shipping Name:	Phenylenediamines		
Hazard Class:	6.1	ID Number:	UN1673
		Packing Group:	PGIII
IATA: Non-Bulk		Label:	Toxic
Proper Shipping Name:	Phenylenediamines		
Hazard Class:	6.1	ID Number:	UN1673
		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): 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 contains one or more toxic chemicals for routine annual Toxic Chemical Release Reporting under section 313 (40 CFR 372).

m-Phenylenediamine (CAS 108-45-2), 40 – 80%

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 contain one or more chemicals which are subject to Section 12(b) export notification.

1-ethylpyrrolidin-2-one (CAS 2687-91-4), 20 – 60%

TSCA Chemical Action Plan (40CFR721): This product contains 4-Nonylphenol which is subject to TSCA/SNUR requirements, Section 5; any use other than as an intermediate or as an epoxy cure catalyst would constitute a significant new use requiring notification to EPA.

State Regulations:

California Proposition 65: This product does not expose you to chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

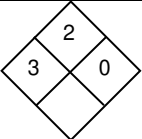
International Regulations:

WHMIS: Class D-1B: Material causing Immediate and serious toxic effects (Toxic)
Class D-2A: Material causing other toxic effects (Very Toxic)
Class D-2B: Material causing other toxic effects (Toxic)

International Lists:

Canadian Inventory (CEPA-DSL):	all components are listed or exempt	Malaysia Inventory (EHS register):	not determined
China Inventory (IECSC):	all components are listed or exempt	Philippines Inventory (PICCS):	all components are listed or exempt
Japan Inventory:	all components are listed or exempt	Taiwan Inventory (CSNN):	not determined
Korea Inventory:	all components are listed or exempt	Europe Inventory (EINECS)	all components are listed or exempt

16. OTHER INFORMATION

Hazardous Material Information System (HMIS) - USA		National Fire Protection Association (USA):	
Health	3		
Flammability	2		
Physical Hazards	0		
Personal Protection	X*		

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

Reason Issued: update
Prepared By: P. 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.