



**FIELD-APPLIED COMPOSITE SYSTEMS LLC**  
925 North Todd Avenue, Azusa, CA 91702 USA  
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## **SAFETY DATA SHEET**

### **PowerSleeve™ 439 Matrix-Part A**

#### **SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** PowerSleeve™ 439 Matrix-Part A

**MFR'S NAME:** Field-Applied Composite Systems LLC, 925 North Todd Avenue, Azusa CA 91702

**EMERGENCY PHONE:** 800.424.9300 (CHEMTREC)      **GENERAL INFORMATION:** 626.633.0294

**USE OF THE SUBSTANCE:** Epoxy resin for use with fiberglass or carbon fabric for the repair of pipelines or other structures.

#### **SECTION 2: HAZARDS IDENTIFICATION**

**OSHA/HCS status:** This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**GHS Label Elements:**

**Hazard Pictograms:**



**Signal Word:**

Warning!

Dangerous to the environment.

**Hazard Statements and GHS Classifications:**

H315, H319	Causes skin and eye irritation.	Category 2
H317	May cause an allergic skin reaction.	Category 1
H411	Toxic to aquatic life with long-lasting effects.	Category 2, Chronic
H332	Harmful if inhaled.	Category 4
H312	Harmful if in contact with skin.	Category 4
H302	Harmful if swallowed.	Category 4

**Precautionary Statements:**

**Prevention:**

P261 Avoid breathing fumes, mist, vapors, and 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.  
P273 Avoid release to the environment.  
P280 Wear protective gloves, clothing, and eye/face protection.

**Responses:**

P301+P312 IF SWALLOWED: Call POISON CENTER, and/or doctor if you feel unwell.  
P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P333+P313 If skin irritation or rash occurs, get medical attention.  
P362+P364 Take off contaminated clothing, and wash it before reuse.  
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.  
P391: Collect spillage.

**Storage:** P403+P233: Store in a well-ventilated place. Keep containers tightly closed.  
P405: Store in a secured area.

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

**Other Hazards:** None known. No Physical or Chemical Hazards classified under GHS.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Substance/Mixture:** Mixture.

CHEMICAL NAME	CAS NUMBER	CONTENT
Bisphenol-A Epoxy Resin	25068-38-6	50-80%
Epoxy Phenol Novolac Resin	28064-14-4	10-30%
Aliphatic Epoxy Resin	2425-79-8	10-30%

**Occupational Exposure Limits, if available, are listed in Section 8.**

### SECTION 4: FIRST AID MEASURES

#### **Description of necessary first aid measures:**

<b>Inhalation</b>	Remove victim to fresh air, and keep warm and at rest in a position comfortable for breathing. If not breathing, if breathing is irregular, or if respiratory arrest occurs, provide artificial respiration, or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position, and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt, or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
<b>Skin Contact</b>	Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. Get medical attention if symptoms occur.
<b>Eye Contact</b>	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for, and remove any contact lenses. Continue to rinse for at least 15 minutes. Get medical attention.
<b>Ingestion</b>	Wash out mouth with water. Remove dentures, if any. Remove victim to fresh air, and keep at rest in a position comfortable for breathing. DO NOT induce vomiting. Get medical attention. If unconscious, place in recovery position, and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt, or waistband.

#### **Most Important Symptoms/Effects, Acute and Long –Term:**

##### **Potential Acute Health Effects:**

<b>Inhalation</b>	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed after exposure. Harmful if inhaled in high airborne concentrations.
<b>Skin Contact</b>	Causes skin irritation. May cause an allergic skin irritation.
<b>Eye Contact</b>	Irritating, and may cause redness and pain.
<b>Ingestion</b>	May cause discomfort if swallowed.

##### **Overexposure Signs/Symptoms:**

<b>Inhalation</b>	No specific data.
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**Skin Contact** Adverse symptoms may include the following: Irritation, and/or Redness.  
**Eye Contact** Adverse symptoms may include the following: Pain, or Irritation, Watering, Redness.  
**Ingestion** No specific data.

**Indication of Immediate Medical Attention and/or Special Treatment needed:**

**Notes to Physician** Treat symptomatically. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be under medical surveillance for up to 48 hours.

**Specific Treatments** No specific treatment(s).

**See also Toxicological Information in Section 11.**

**SECTION 5: FIREFIGHTING MEASURES**

**Extinguishing Media** Dry chemicals, water spray, foam, or carbon dioxide. Spray containers with water to keep cool, and avoid rupture due to pressure buildup.

**Unsuitable Media** None known.

**Specific Hazards** Material is not considered a fire hazard, but will burn if ignited.

**National Fire Protection Association (USA):**

**Labeling:** No data available.

**Hazardous Thermal Decomposition Products**

Irritating or toxic substances may be emitted upon burning or decomposition. See **Section 10** for additional information.

**Special Protective Actions for Firefighters**

Promptly isolate the scene by removing all persons from the vicinity of the incident, if there is a fire. No action shall be taken involving any personal risk, or without suitable training.

**Special Protective Equipment for Firefighters**

Firefighters should wear appropriate protective equipment, and self-contained breathing apparatus (SCBA) with a full-face piece operated in a positive pressure mode during the attack phase of firefighting operations. During cleanup, if area is poorly ventilated, SCBA should be used.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Personal Precautions, Protective Equipment and Emergency Procedures**

Keep unauthorized persons away. Provide adequate ventilation and avoid breathing vapors. Put on appropriate personal protective equipment (see **Section 8**). If spilled in an enclosed area, ventilate area or use SCBA. Remove potential ignition sources.

**Environmental Precautions**

Avoid dispersal of material and runoff from contact with soil, waterways, drains and/or sewers in an unmixed condition. When this material is mixed with the proper ratio of Hardener (Part B) and is fully cured, the resulting solid is non-hazardous.

**Methods and Materials for Containment and Cleaning Up (Small or Large Spill)**

Stop leak if possible without risk. Move containers from spill area. Absorb spilled material with vermiculite, dry sand or earth and put into containers and dispose of via a licensed waste disposal contractor. Clean spillage area with solvents or plenty of water. Do not allow runoff into sewers or water sources

**SECTION 7: HANDLING AND STORAGE**

**Precautions for Safe Handling/Personal Hygiene**

Use appropriate personal protective equipment as per **Section 8**. Keep in the original containers or an approved alternative; keep containers tightly closed when not in use. Do not reuse containers.

Keep away from heat, sparks and open flame. Eating, drinking and/or smoking should be prohibited where this material is being used. Workers should remove contaminated clothing/protective equipment and wash hands and face and before entering eating areas and eating, drinking and/or smoking.

**Conditions for Safe Storage, including any Incompatibilities**

Store in sealed original containers, or approved alternatives, when not in use in a dry, well-ventilated area. Protect containers from direct sunlight in a dry, cool and well ventilated area. Do not allow to freeze or exceed 40°C (~110°F). Do not reuse containers.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control Parameters**

**Occupational Exposure Limits**

Ingredient	CAS#	Exposure Limits (ACGIH-TWA or ACGIH-STEL)
Bisphenol A Epoxy Resin	25068-38-6 (US)	Not Available
Epoxy Phenol Novolac Resin	26064-14-4	
Aliphatic Epoxy Resin	2425-79-8	

**Appropriate Engineering Controls**

Good general ventilation should be sufficient to control worker exposure to any airborne contaminants. If working in enclosed spaces, provide additional local ventilation. Eyewash fountains and safety showers are recommended, as well as good laboratory procedures and care.

**Exposure controls**

**Respiratory Protection**

If necessary, a properly-fitted vapor mask/respirator complying with an approved standard or SCBA should be used.

**Hand Protection**

Chemical-resistant gloves (such as nitrile rubber of .35mm thickness or similar) should be worn when handling this material. Contaminated gloves should be disposed of properly.

**Body Protection**

Chemically resistant long-sleeved shirts and long pants or lab coats are recommended. Contaminated clothing should be washed separately from other clothes before reuse. Footwear appropriate for the work being performed should be worn and cleaned carefully if contaminated, before reuse. Heavily soiled clothing or shoes should be discarded.

**Eye/Face Protection**

Safety eyewear and face shields appropriate for the work being performed should be used. Ordinarily, this means a minimum of safety eyewear or splash goggles.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State:</b>	Liquid	<b>Color:</b>	Clear amber
<b>Odor:</b>	Mild	<b>Odor Threshold:</b>	N/A
<b>pH</b>	N/A	<b>Melting Point:</b>	N/A
<b>Boiling Point:</b>	N/A	<b>Flash Point:</b>	>110°C (~250°F)
<b>Evaporation Rate:</b>	N/A	<b>Vapor Pressure/Density:</b>	<1mm Hg at 20°C Heavier than air
<b>Relative Density</b>	1.16	<b>Viscosity:</b>	3,000 cP at 25°C
<b>Auto-Ignition Temp.</b>	N/A	<b>Decomposition Temp.</b>	N/A
<b>Solubility:</b>	Negligible	<b>VOC Content:</b>	None

## SECTION 10: STABILITY AND REACTIVITY

**Reactivity:** Exothermic reactions including polymerization may occur in contact with amines, strong acids or bases or oxidizing agents, alcohols, and excessive heat.

**Chemical Stability:** This product is stable under normal conditions.

**Possibility of Hazardous Reactions:** See "Reactivity" above for cautions.

**Conditions to Avoid:** Avoid excessive heat and ignition sources.

**Incompatible Materials:** Strong acids, bases, oxidizing agents and amines.

**Hazardous Decomposition Products:** Thermal decomposition may produce smoke, oxides of carbon, aldehydes, phenolics and other products of incomplete combustion.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Acute Toxicity

Chemical Name	LC <sub>50</sub> Inhalation	LD <sub>50</sub> Oral (Rat)	LD <sub>50</sub> Dermal (Rabbit)
Bisphenol-A Epoxy Resin	N/A	>2,000mg/kg	>2,000 mg/kg
Epoxy Phenol Novolac Resin	N/A	>2,000mg/kg	>2,000mg/kg
Aliphatic Epoxy Resin	>250 ppm (6 hours)	1,134 mg/kg	1,130 mg/kg

**Skin Corrosion/Irritation:** Skin Irritation-Category 2

**Serious Eye Damage/Irritation:** Eye Irritation-Category 2

**Respiratory or Skin Sensitization:** Skin Sensitization-Category 1

**Mutagenicity:** No specific data. **Carcinogenicity:** No specific data.

**Reproductive Toxicity:** No specific data. **Teratogenicity:** No specific data.

**Aspiration Hazard:** No specific data.

**Specific Target Organ Toxicity (Single and Repeated Exposure):** No specific data.

**Information on the Likely Routes of Exposure:** Eyes, skin, inhalation and ingestion.

### Potential Acute Health Effects and Related Symptoms:

See **Section 4**.

### Delayed, immediate and chronic effects from short and long term exposure:

Some persons may become sensitized after chronic exposure and may exhibit moderate to severe allergic reactions when exposed.

## SECTION 12: ECOLOGICAL INFORMATION

### Toxicity:

Chemical Name	LC <sub>50</sub> 96 Hours (Fish)	EC <sub>50</sub> 24 Hours (Daphnia)	IC <sub>50</sub> 96 Hours (Bacteria)
Bisphenol-A Epoxy Resin	2.4 mg/L	3.6 mg/L	>100 mg/L
Epoxy Phenol Novolac Resin	>1-10 mg/L	>1-10 mg/L	N/A
Aliphatic Epoxy Resin	24 mg/L	75 mg/L	N/A

### Persistence and Degradability:

**Chemical Name:** **OECD derived from OECD 301F (Biodegradation Test)-28 Days**

Bisphenol-A Epoxy Resin 5%-not readily biodegradable.

Epoxy Phenol Novolac Resin Not readily biodegradable.

Aliphatic Epoxy Resin Not readily biodegradable.

**Bioaccumulative Potential:**

Chemical Name	LogPow	BCF	Potential
Bisphenol-A Epoxy Resin	3.242	31	Low
Epoxy Phenol Novolac Resin	N/A	N/A	N/A
Aliphatic Epoxy Resin	-0.15	N/A	N/A

**Mobility in Soil (soil/water partition coefficient-K<sub>oc</sub>):**

Bisphenol A Epoxy Resin: 445. Mobility is expected to be low.  
N/A for other chemicals.

**Other Adverse Effects:** Other information is not available. No information is available for classification as PBT or vPvB.

**SECTION 13: DISPOSAL CONSIDERATIONS**

Dispose of unused contents (incineration) in accordance with national and local regulations. Dispose of container in accordance with national and local regulations. Ensure the use of properly authorized waste management companies, where appropriate. See **Section 8** for recommendations on the use of personal protective equipment. When combined with the proper ratio of hardener (Part B), mixed and allowed to cure, the resulting solid is non-hazardous.

**SECTION 14: TRANSPORTATION INFORMATION**

**UN No's:** DOT/TG: Not regulated. IMDG: 3082 ICAO: 3082

**IMDG/ICAO Proper Shipping Name:**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy Resin) (Air and marine shipments only)

**Hazard Classes:** DOT/TDG: Not Regulated. IMDG: 9 ICAO: 9

**Hazard Labels:** DOT/TDG: N/A-not regulated

**Pack Groups:** DOT/TDG: N/A-not regulated. IMDG: III AIR: III

**Environmental Hazards: Marine Pollutant:** Yes. **Hazardous Substance (USA):** No.

**Transporting in Bulk according to Annex II of MARPOL73/78 and the IBC Code:** N/A

**Label for Conveyance:** AIR AND MARINE SHIPMENTS ONLY.

**SECTION 15: REGULATORY INFORMATION****INTERNATIONAL REGULATIONS:****International and US Inventory Lists**

<b>Canada Inventory (DSL)</b>	All components listed or exempt.	<b>EU-ELINCS</b>	Not listed.*
<b>Canada Inventory (NDSL)</b>	Not listed.*	<b>EU-EINECS</b>	Listed or Exempt
<b>US Toxic Substances Control Act (TSCA)</b>	All components listed or exempt.	<b>REACH Annex XIV and Annex XVII</b>	Not listed*
<b>Other</b>	Not determined, no additional information is available.		

\*Note: There is no listing on the public inventory, no information is available or the component has not been reviewed.

**Substances of Very High Concern:** None of the components are listed.

## SECTION 16: OTHER INFORMATION

### ABBREVIATIONS:

ACGIH: American Conference of Governmental Industrial Hygienists  
ADR/RID: European dangerous goods transport, road and rail, regulations  
CAS: Chemical Abstract Service Registry  
DOT: Department of Transportation (U.S.)  
GHS: Globally Harmonized System of Classification and Labeling of Chemicals  
IATA: International Air Transport Association  
ICAO: International Civil Aviation Organization  
IMDG: International Maritime Dangerous Goods code  
OEL: Occupational Exposure Limits  
OSHA: Occupational Safety and Health Administration (U.S.)  
PEL: Permissible Exposure Limit  
RQ: Reportable Quantity  
SDS: Safety Data Sheet  
STEL: Short Term Exposure Limit (15 minute Time Weighted Average)  
TDG: Canadian Transportation of Dangerous Goods Act and Regulations  
UN: United Nations  
U.S.: United States

**Revision Date:** January 30, 2024  
**Revision:** 0  
**Reason for Revision:** N/A

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