



FIELD-APPLIED COMPOSITE SYSTEMS LLC
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SAFETY DATA SHEET

PowerSleeve™ Standard Resin-Part B Hardener

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: PowerSleeve™ Standard Resin-Part B Hardener
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: Hardening agent used with an epoxy resin and 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:

H302	Harmful if swallowed.	Category 4
H312	Harmful in contact with the skin.	Category 4
H314	Causes severe skin burns and eye damage.	Category 1
H317	May cause an allergic skin reaction.	Category 1
H318	Causes serious eye damage.	Category 1
H332, H335	Harmful if inhaled.	Category 4
H361	Suspected of damaging fertility and the unborn child	Category 2
H401, H411	Hazardous to the Aquatic Environment.	Category 2

Precautionary Statements:

Prevention:

- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P260: Do not breathe mists.
- 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.

Responses:

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): Immediately take off 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. Get medical attention if irritation persists.
P308+P313: If exposed or concerned, get medical attention.
P391: Collect spillage.

Storage:

P233+P403: Store in a well-ventilated place. Do not allow to freeze or expose to high temperatures. Keep containers tightly closed.
P405: Store in a secured place.

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 (%)
Tetraethylenepentamine	112-57-2	5-15%
Polyethylenepolyamine	29320-38-5	60-80%
Proprietary Ingredients	Trade Secret	<25%

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

SECTION 4: FIRST AID MEASURES

Description of necessary first aid measures:

- General** Get medical attention immediately for any person who is having trouble or not breathing, or any unconscious person. Provide oxygen or artificial respiration to a person if they have trouble breathing. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Place an unconscious person in a recovery position, maintain an open airway and loosen tight clothing.
- Inhalation** Remove victim to fresh air and keep warm and at rest in a position comfortable for breathing. 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.
- Skin Contact** Flush contaminated skin with plenty of water. Remove contaminated clothing and/or shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention immediately. In the event of any complaints or symptoms, avoid further exposure. Wash clothing and clean shoes thoroughly before reuse. Soiled or soaked clothing or shoes should be soaked with water and disposed of when material has cured.
- Eye Contact** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids and rolling eyes in a circular motion. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes, or longer if there is still indication of the material in eyes. Get medical attention immediately.
- Ingestion** 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 immediately. Give milk or water to dilute stomach contents.

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

Potential Acute Health Effects:

- Inhalation** Exposure to decomposition products may cause a health hazard. Serious effects may be delayed after exposure. Persons with sensitive airways may react to vapors.
- Skin Contact** Causes skin irritation or burns. May cause an allergic skin irritation. Pre-existing skin conditions may be aggravated.
- Eye Contact** Irritating and may cause irritation or burns.
- Ingestion** May cause discomfort if swallowed. Corrosive to mouth, throat and stomach.

Overexposure Signs/Symptoms:

- Inhalation** No specific data.
- Skin Contact** Adverse symptoms may include the following: Irritation, burns 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: FIRE FIGHTING MEASURES

Extinguishing Media Dry chemicals, foam or carbon dioxide.

Unsuitable Media Water jet.

Specific Hazards No specific fire or explosion hazards. Material is not considered a fire hazard but will burn if ignited. Closed containers may rupture due to pressure when exposed to extreme heat and should be sprayed to keep cool.

National Fire Protection Association (USA):

Labeling: Health: 2 Fire: 1 Reactivity: 0

Hazardous Thermal Decomposition Products

May include oxides of carbon and other toxic vapors. See **Section 10** for more information.

Special Protective Actions for Fire Fighters

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 Fire Fighters

Fire Fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in a positive pressure mode and appropriate protective clothing.

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**).

Environmental Precautions

Avoid dispersal of material and runoff from contact with soil, waterways, drains and/or sewers.

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

Stop leak if possible without risk. 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. If in an area with poor ventilation, personnel should wear SCBA equipment during cleanup.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling/Personal Hygiene

Use good laboratory/workplace procedures and appropriate personal protective equipment as per **Section 8**. Keep in the original container 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 and store at 15-40°C (55-110°F). Do not reuse empty containers.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Occupational Exposure Limits:

CHEMICAL NAME	CAS NUMBER	ACGIH-TWA	ACGIH-STEL
Tetraethylenepentamine	112-57-2	5.00 mg/m ³	N/A
Polyethylenepolyamine	29320-38-5	N/A	N/A

Appropriate Engineering Controls

Always provide effective general, or as required, local exhaust ventilation to prevent routine inhalation of vapors. If appropriately used, no mist or spray should be created.

Exposure controls

Respiratory Protection

If a risk assessment indicates it is necessary, a properly-fitted NIOSH approved respirator with organic vapor/HEPA filter cartridges, full face respirator or SCBA should be used.

Hand Protection

Chemical-resistant (impervious) 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, long pants and/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. Soaked footwear or clothing should be disposed of properly.

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 with a face shield.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	Color:	Clear amber
Odor:	Slight, amine	Odor Threshold:	N/A
pH:	N/A	Melting Point:	N/A
Boiling Point:	N/A	Flash Point:	>138°C (~280°F)
Evaporation Rate:	N/A	Vapor Pressure/Density:	N/A, Heavier than air.
Relative Density:	N/A	Viscosity:	N/A
Auto-Ignition Temp.:	N/A	Decomposition Temp.:	N/A
Solubility:	Moderate	% Volatile:	None

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Exothermic reactions may occur in contact with strong acids, bases and/or oxidizing agents, epoxy resins in uncontrolled conditions and contact with other unpolymerized monomer/polymers.

Chemical Stability: This product is stable under normal conditions.

Possibility of Hazardous Reactions: None under normal conditions of use. See "Reactivity" above for cautions.

Conditions to Avoid: Avoid excessive heat and ignition sources.

Incompatible Materials: Strong acids, bases, oxidizing agents and unpolymerized monomer/polymers.

Hazardous Decomposition Products: N/A-None under normal conditions of use. Thermal decomposition may produce smoke, oxides of carbon and/or nitrogen, hydrocarbons and other products of incomplete combustion.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity

CHEMICAL NAME	LC ₅₀ Inhalation (Rat)	LD ₅₀ Oral (Rat)	LD ₅₀ Dermal (Rabbit)
Tetraethylenepentamine	N/A	3,990 mg/kg	N/A
Polyethylenepolyamine	N/A	2,100 mg/kg	>2,000 mg/kg

Sensitization: No specific data. **Mutagenicity:** No specific data.

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

Teratogenicity: No specific data. **Eye Damage:** Category 1

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

Aspiration Hazard: N/A. **Information on the Likely Routes of Exposure:** N/A.

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	TEST	SPECIES	RESULT
Tetraethylenepentamine	LC ₅₀ (96 hrs)	Fish	420 mg/L
	EC ₅₀ (48 hrs)	Daphnia	24 mg/L
	IC ₅₀ (72 hrs)	Algae	2 mg/L
Polyethylenepolyamine	N/A	N/A	N/A

Persistence and Degradability:

CHEMICAL NAME	TEST	PERIOD	RESULT
Tetraethylenepentamine	N/A	N/A	N/A
Polyethylenepolyamine	N/A	N/A	N/A

Bioaccumulative Potential and Mobility in Soil:

LogPow, BCF, and Soil/Water Partition (**Koc**) information are not available for any components.

Other Adverse Effects: No other information is available. No information is available regarding classification as PBT or vPvB.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of unused contents (incineration) in accordance with national and local regulations. Dispose of containers 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.

SECTION 14: TRANSPORTATION INFORMATION

UN No's: DOT/TG: Not regulated IMDG: N/A ICAO: N/A
DOT/TDG Proper Shipping Name:
LIQUID, IRRITANT N.O.S. (Contains Amines)
Hazard Classes: DOT: N/A TDG: N/A IMDG: N/A ICAO: N/A ADR/RID: N/A
Hazard Labels: DOT: N/A TDG: N/A
Pack Groups: DOT: N/A IMDG: III AIR: III
Special Precautions for User: N/A **Marine Pollutant:** YES **Hazardous Substance (US):** NO
Transporting in Bulk according to Annex KK of MARPOL 73/78 and the IBC Code: N/A
Label for Conveyance: N/A-None

SECTION 15: REGULATORY INFORMATION

INTERNATIONAL REGULATIONS:

International Lists

Canada Inventory (DSL)	All components listed or exempt.	EU-EINECS	Not listed*
Other	Not listed.*	EU-ELINCS	Not listed.*

***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 (REACH Annex XIV and XVII): None of the components are listed.

UNITED STATES NATIONAL REGULATIONS:

TSCA 8(a) PAIR: Not listed.

TSCA 8(a) CDR Exempt/Partial Exemption: Not listed

US Inventory, TSCA 8(b): All components listed or exempted.

Clean Water Act (CWA) 307: N/A

Clean Air Act, Section 112(b), Hazardous Air Pollutants: Not listed.

Clean Air Act, Section 602, Class I Substances: Not listed.

Clean Air Act, Section 602, Class II Substances: Not listed.

SARA 302/304: No products were found.

SARA 304 RQ: Not Applicable.

SARA 311/312 Classification: Not Applicable.

SARA 313, Form R Reporting Requirements:

Product Name: 4,4'-isopropylidenediphenol CAS Number: 80-05-7 % by Weight: 30-45%

US STATE REGULATIONS:

No information is available.

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
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit (15 minute Time Weighted Average)
TDG: Canadian Transportation of Dangerous Goods Act and Regulations
TPQ: Threshold Planning Quantity
RQ: Reportable Quantity
UN: United Nations
U.S.: United States
N/A: Not available or not applicable.

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Notice:

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