Safety Data Sheet

1. Product and Company Identification

Product Name: **FPR-1 Primer**
Material Uses: Silicone Primer
(M)SDS#: FPR-1-20200821
Validation Date: August-11-2023
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:

Flammable Liquid	Category 2	Skin Corrosion/irritation	Category 2
Serious Eye dame/eye irritation	Category 1	Specific Target Organ toxicity, single exposure	Category 3
Aspiration Hazard	Category 1	Hazardous to the aquatic Environment, long term hazard	Category 1

GHS LABEL ELEMENTS:

HAZARD SYMBOLS:

SIGNAL WORDS: DANGER

HAZARD STATEMENTS:

Highly Flammable liquid & vapor. Causes skin irritation. Cause Serious eye damage. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways. Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

PREVENTION:
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
P233 Keep container tightly closed
P240 Ground/bond container and receiving equipment
P243 Take precautionary measures against static discharge
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
P280 Wear protective gloves, clothing, and eye/face protection.

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+P634+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.
P308+P313 IF exposed or concerned: Get medical attention.
P391 Collect spillage.

STORAGE: P403+P235 Store in a well-ventilated place. Keep cool.

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	%
N-Heptane	142-82-5	80% - 90%
Tetraethoxysilane	78-10-4	3% – 10%
Alkoxide	5593-70-4	3% - 10%
Alkoxysilane (A)	137787-41-8	1 – 3%
Alkoxysilane (B)	2530-83-8	1 – 3%
Methanol (impurity)	67-56-1	0.0052%

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.
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:	-7°C (19.4°F) Pensky-Martin closed cup
Hazardous Thermal Decomposition Products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, methanol, ethanol, 1-Butanol
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 spills 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 all equipment is electrically grounded before beginning transfer operations. This material can accumulate static charge due to its inherent physical properties and can therefore cause an electrical ignition source to vapors. In order to prevent a fire hazard, as bonding and grounding may be insufficient to remove static electricity, it is necessary to provide an inert gas purge before transfer operations. Restrict flow velocity in order to reduce the accumulations of static electricity. Non-sparking tools should be used. 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 10°C - 30°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 away from moisture. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment. Non-sparking tools should be used. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure Controls / Personal Protection

N-Heptane	ACGIH – TLV-TWA: 400ppm; STEL 500ppm OSHA – PEL: 8hour, TWA: 500 ppm
Tetraethoxysilane	OSHA – PEL: 8hour, TWA: 100 ppm ACGIH – TLV-TWA: 10 ppm
Methanol (impurity)	OSAH – PELL 260mg/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:	Local exhaust and/or an adequate ventilation system is required for this product. Good general ventilation should be sufficient to control worker exposure to airborne contaminants in most applications, but if large volumes of material or spraying applications are in use the system should be suitable to keep worker exposure below the recommended limits shown above and any other 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. Protective gloves suitable to prevent exposure are required. 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 brown liquid	Odor	solvent
Boiling Point:	>98.4°C (initial)	Freezing Point:	Not available
Flash Point:	-7°C (19.4°F) close cup	pH:	Not available
Auto-ignition Temperature:	Not available	Flammable Limits:	Lower – 1.1% v/v (n-heptane) Upper – 6.7% v/v (n-heptane)
Vapor Pressure:	40 mmHg at 20°C (n-heptane)	Water Solubility:	Not soluble
Specific Gravity:	0.67	Vapor Density:	7.2 (tetraethoxysilane)
Evaporation Rate:	>1 (butyl acetate =1)	VOC:	<10 g/L (estimated)
Viscosity:	~ 1 centipoise		

10. Stability and Reactivity

Chemical Stability: This product is stable, under normal conditions of storage and use, hazardous reactions will not occur.

Hazardous Polymerization: Active ingredients will hydrolyze if exposed to water, but without the generation of heat or other hazards.

Conditions to Avoid: Flames, sparks, heat, and exposure to strong oxidizing agents, organic peroxides, flammable solids, pyrophoric liquids, pyrophoric solids, self-heating substances and mixtures, substances and mixtures which in contact with water emit flammable gases, explosives, and gases.

Hazardous Decomposition: Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition products may include the following materials: ethanol, methanol, 1-butanol, carbon dioxide, carbon monoxide, other oxides, and formaldehyde.

11. Toxicological Information

Acute Toxicity

Product/Ingredient Name	Test	Endpoint	Species	Result
Octamethyltrisoloxane	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rat	>2000 mg/kg
	OECD 420 Acute Oral Toxicity – Fixed Dose	LD50 Oral	Rat	>2000 mg/kg

Irritation / Corrosion

Product/Ingredient Name	Test	Species	Result
tetraethoxysilane		Rabbit	Skin – moderate irritant
		Rabbit	Eye – mild irritant
N-Heptane		Rabbit	Skin – moderate irritant
		Rabbit	Eye – moderate irritant

Sensitizer

Product/Ingredient Name	Test	Species	Result
Product			No data available

Mutagenicity

Product/Ingredient Name	Test	Result
All available data shows negative results for mutagenicity / genotoxicity		

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, NTP or OSHA.

Reproductive Toxicity

Product/Ingredient Name	Test	Species	Maternal Toxicity	Fertility	Developmental Effects
Not available					

Teratogenicity

Product/Ingredient Name	Test	Species	Results
Not available			

Potential Acute Health Effects

Inhalation: May cause irritation to respiratory system and exacerbate asthma and other existing respiratory conditions

Ingestion: May cause skin irritation

Skin Contact: Moderately irritating. May cause drying and exacerbate eczema and other existing skin conditions.

Eye Contact: May cause eye irritation

Potential Chronic Health Effects

Product/Ingredient Name	Test	Endpoint	Species	Results
No available				

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: 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: No known significant effects or critical hazards.

Aquatic Ecotoxicity

Product/Ingredient Name	Test	Endpoint	Exposure	Species	Result
No data is available					

Persistence and Degradability

Product/Ingredient Name	Test	Period	Result
No data is available			

Product/Ingredient Name	Aquatic half-life	Photolysis	Biodegradability
Not available		-	

Bioaccumulative potential

Product/Ingredient Name	Log P_{ow}	BCF	Potential
Not available			

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 of 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 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, 49CFR: Non-Bulk **Label:** Flammable liquid
Proper Shipping Name: Adhesives, containing a flammable liquid
Hazard Class: 3 **ID Number:** UN1133 **Packing Group:** PGII

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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 contains chemicals regulated under Section 304 as extremely hazardous substance(s) for emergency release notification ("CERCLA" List).

Methanol (impurity) CAS# 67-56-1

N-heptane CAS#142-82-5

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 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 in 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: This product contains a chemical known to the state of California to cause birth defect or other reproductive harm.
Methanol (impurity)

International Regulations:

WHMIS: Class B2: Flammable Liquids: Flashpoint of < 37.8°C (100°F).
Class D2A: Material causing other toxic effects (Toxic).

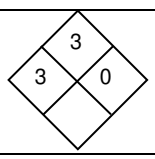
International Lists:

Australia Inventory (AICS): all components are listed or exempt China Inventory (IECSC): all components are listed or exempt

16. OTHER INFORMATION

Hazardous Material Information System (HMIS) - USA	
Health	3
Flammability	3
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: P. White **Approved By:** C. Meyer Title: Vice President

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