2-07004

2013194

Prepared: December 1997

MATERIAL SAFETY DATA SHEET

Section 1: Product and Company Information

Product Name: FRP-1 Reinforced Putty

Manufacturer: Titan Corporation of Washington
5629 208th St SW, Lynnwood, WA 98036

Emergency Contacts: Chemtrec: 1-800-424-9300 (24 hours)

Section 2: Composition and Ingredient Information

Common Name	Chemical Name	CAS No.	Wt. %
Polyester Resin	Polyester Resin	64386-66-9	35
Styrene Monomer	Vinyl Benzene	100-42-5	15
Talc	Magnesium Silicate	014807-96-6	48
Fumed Silica	Silicon Dioxide Amorphous	112945-52-5	2

NOTE: See Section 8 of MSDS for exposure limit data for these ingredients.

Section 3: Hazards Identification

Appearance and Odor: Viscous liquid with an aromatic odor.

Primary Route(s) of Exposure: inhalation, skin, eye

Potential Health Effects:

ACUTE (short term):

This product if inhaled may cause upper respiratory irritation and possible central nervous system effects including headaches, nausea vomiting, dizziness, drowsiness loss of coordination, impaired judgment, and general weakness. It may cause dryness cracking tenderness and irritation of the skin. Direct contact with this product may result in immediate irritation to the eyes

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Auto Ignition Temperature : 914°F (490°C) - Styrene

Extinguishing Media: Foam, CO_2 or dry chemical.

Unusual Fire and Explosion Hazards: Product is a NFPA Class 1C flammable liquid. Prevent static and other electrical sparking. Ambient temperatures above 77°F (25°C), or heat from fire may cause polymerization, heat generation, and vapor expansion. Excessive heat may cause closed containers to rupture. Keep cool with water spray.

Fire Fighting Instructions: Treat as a flammable liquid type fire. In a sustained fire wear self-contained breathing apparatus and full protective bunker turnout gear.

Hazardous Combustion Products: Primary combustion products are carbon monoxide, carbon dioxide, and low molecular weight hydrocarbons. Other undetermined compounds could be released in small quantities.

Section 6: Accidental Release Measures

Releases of this product to the land, water and air may require reporting to local, state and federal agencies.

Land Spill: Prevent material from entering sewers or waterways. Remove all sources of ignition (flames, hot surfaces, and electrical static or frictional sparks). Ventilate area. Absorb with inert materials (vermiculite or sand) and place in a closed container for disposal as solid waste. Wash area well with trisodium phosphate and water. Resin that may have been mixed with peroxide initiators prior to spillage should be mixed with inert material and removed to an open area. Allow time to gel and cure.

Water Spill: Material is mostly insoluble. The material will sink to the bottom leaving a styrene monomer sheen. Styrene is harmful to aquatic life in very low concentrations. Notify local environmental, health and wildlife authorities, and water intake operators. Contain with booms to minimize spread on water. Collect floating material with sorbents and vacuum/collect sunken solids. Disperse any remaining residue to reduce aquatic harm.

Air Release: Spills of this material may release styrene and volatile organic compounds into the air. Spills should be cleaned or covered to prevent volatilization of styrene.

Section 7: Handling and Storage

Storage Temperature: Store below 77°F (25°C)

Storage Pressure: N/A

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Vapor Density (Air=1): Not Available

Specific Gravity (water=1): 1.1
Solubility in Water: Insoluble

Boiling Point: >95°F (>35°C)
Viscosity: 10 - 1000 mPa·s

pH: N/A

Physical State: Liquid

Appearance: Viscous Clear

Freezing Point: Not Available

Odor Type: Aromatic

Evaporation Rate (n-Butyl Acetate=1): N/D

Section 10 - Stability and Reactivity

General: Stable below 77°F (25°C)

Incompatible Materials and Conditions to Avoid: Peroxides, oxidizers, acids and bases. Ambient temperatures over 77°F (25°C), or heat from fire situations may cause polymerization, heat generation and vapor expansion. May cause closed container to rupture.

Hazardous Decomposition Products: Oxides of carbon and low molecular weight hydrocarbons See Section 5 of MSDS for combustion products statement.

Hazardous Polymerization: May occur. Avoid excessive heat, contamination and prolonged storage above 77°F (25°C)

Section 11 - Toxicological Information

CARCINOGENICITY: The following table indicates whether or not each agency has listed each ingredient as a carcinogen:

Ingredient	ACGIH	IARC	NTP	OSHA
Polyester Resin	No	No	No	No
Styrene Monomer	No	Yes	No	No

TOXICITY:

Ingredient	LD_{50} Oral (g/kg)	LD_{50} Dermal (g/kg)	LC_{50} Inhalation (g/m^3, 4 hrs.)
Polyester Resin	Not Available	Not Available	Not Available

N/A = Not Applicable N/D = Not Determined

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Marine Pollutants: Styrene monomer, inhibited

Freight Description: Plastic liquid, NOI (NMFC)

Hazardous Material Shipping Description: Resin solution, 3, UN1866, PG III, RQ (Styrene Monomer), Marine Pollutant (Styrene monomer)

ERG Number: 26

Transportation of Dangerous Goods – Canada

Proper Shipping Name: Resin Solution

TDG Hazard Classification: (Primary): Class 3 (Secondary): None

IMO Classification: Class 3.3

ICAO/IATA Classification: 3

Product Identification Number: UN1866

Packing Group: III

Control Temperature: None

Emergency Temperature: None

Schedule XII Quantity Restriction: None

Reportable Quantity for US Shipments: 1000 lbs. (Styrene)

IATA Packing Instructions: Passenger/Cargo: 309
Cargo Only: 310
Limited Quantity: Y309

Maximum Net Quantity per Package: Passenger/Cargo: 60 liters
Cargo Only: 220 liters
Limited Quantity: 10 liters

Special Provisions: None

Section 15: Regulatory Information

TSCA Status: Each ingredient is on the inventory.

N/A = Not Applicable N/D = Not Determined