



VIPER-SKIN

Section 1. Product and Company Identification

Product Name: Viper Skin
Supplier: CSNRI | 621 Lockhaven Drive. Houston, TX 77073 | +1 281.590.8491
Emergency Phone Number: 800.424.9300 (CHEMTREC)
 +1 703.741.5970 (Outside the US)
Product Description: Fiberglass cloth impregnated with water activated resin.
Product Use: Intended to repair pipes or for corrosion control.
Chemical Name or Synonym: N/A

Section 2. Hazards Identification

Classification of the substance or mixture

Acute toxicity/dermal – Category 3
 Acute toxicity/inhalation – Category 3
 Skin corrosion/irritation – Category 2
 Serious eye damage/eye irritation – Category 2B
 Skin sensitization - Category 1

Label Elements:



Hazard Statements:

H311 Toxic in contact with skin
 H334 May cause allergy or asthma or breathing difficulties if inhaled
 H332 Harmful if inhaled.
 H315 Causes skin irritation.
 H320 Causes eye irritation.
Signal Word: WARNING!

Precautionary Statement:

P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P262 Do not get in eyes, on skin, or on clothing.
 P261 Avoid breathing dust/fume/gas/mist/vapours/spray
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

National Fire Protection Association Hazard Ratings – NFPA(R):

Health Hazard: 2
 Flammability: 1
 Reactivity: 0


Section 3. Composition/ Information on Ingredients

Chemical Name	CAS-No	Weight %
Carbon fiber cloth	7440-44-0	40-44
Fibrous glass	65997-17-3	16-20
Diphenylmethane diisocyanate (homopolymer)	39310-05-9	5-10
Diphenylmethane diisocyanate (MDI), containing Methylene Bisphenyl isocyanate, CAS 101-68-8	26447-40-5	25- 35

Section 4. First Aid Measures
First Aid Measures for Accidental:

Eye Exposure: Flush with copious amount of water. Preferably lukewarm, for at least 15 minutes, holding eyelids open at all times. Refer individual to a physician or ophthalmologist for immediate follow up.

Skin Exposure: Remove contaminated clothing. Wash affected skin thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. Get under safety shower after removing clothing. Seek medical attention if irritation develops after area is washed.

Inhalation: Move to an area free from risk of further exposure. Administer oxygen as needed. Obtain medical attention. Asthmatic –type symptoms may develop and may be immediate or delayed up to several hours. Consult physician should this development occur.

Ingestion: Do not induce vomiting. Give one to two cups of milk or water to drink. Do not give anything by mouth to an unconscious person, consult a physician.

Most important symptoms/effects, acute and delayed:

Acute Inhalation: MDI/ vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, and lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, nonspecific bronchial hyperactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g., fever, and chills) has also been reported. These symptoms can be delayed up to several hours after exposure.

Acute Eye: Liquid, aerosols or vapor are irritating and can cause tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. Damage, however, is usually reversible.

Acute Skin contact: Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

Acute ingestion: Irritation and corrosive action can occur in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

Over-exposure signs/symptoms: Overexposure to isocyanates has also been reported to cause lung damage, (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent. Asthma, other respiratory disorders (bronchitis, emphysema, bronchial hyperactivity), skin allergies, eczema.

Notes to Physician: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapors have produced reversible corneal epithelial edema impairing vision. This compound is a known skin and pulmonary sensitizer. Treat symptomatically for contact dermatitis or thermal burns, if burned treat as a thermal burn.

Section 5. Fire Fighting Measures



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Extinguishing Media: Use cold water spray to cool fire-exposed containers to minimize the risk rupture. Carbon dioxide, foam, dry chemical. Water spray for large fires. During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Product reacts with water. Reaction may produce heat and/or gases. Reaction may be violent. Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.

Special Fire Fighting Procedures: During a fire, MDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. At temperatures greater than 400°F, polymeric MDI can polymerize and decompose which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore, use cold water to cool fire-exposed containers.

Special Protective Equipment for Fire-fighters: Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. Wear positive pressure self-contained breathing apparatus (SCBA) and protective fire-fighting clothing (includes helmet, coat, pants, boots, and gloves). Avoid contact with this material during fire-fighting operations. If contact is likely, change to full chemical resistant clothing with SCBA. This will not provide sufficient fire protection, consider fighting fire from a remote location.

Unusual Fire and Explosion Hazards: During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Product reacts with water. Reaction may produce heat and/or gases. Reaction may be violent. Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.

Hazardous Decomposition Materials (Under Fire Conditions): Combustion produces carbon monoxide, oxides of nitrogen, and traces of HCN, MDI vapors or aerosols.

Section 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: No action shall be taken involving any personal risk or without suitable training. Keep people at a distance and stay upwind. Evacuate surrounding areas. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Cleanup and Disposal of Spill: Decontaminate floor with decontamination solution letting stand for at least 15 minutes. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste according to item 13. Ensure adequate ventilation.

Section 7. Handling and Storage

Precautions for safe handling: Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Avoid contact with skin and eyes. Do not breathe aerosols or vapors. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Ensure good ventilation/exhaustion at the workplace.

Conditions for safe storage including any incompatibilities: Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Storage at temperature between 64 °F and 86 °F. Keep away from humidity and water. Keep container tightly closed and sealed until ready for use.

Section 8. Exposure Controls / Personal Protection

Component	Exposure limits		
	ACGIH	NIOSH	OSHA-PELs
4,4'-methylenediphenyl	0.005 ppm (TWA)	ND	0.02 ppm Ceiling (STEL)



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diisocyanate (101-68-8)			0.2 mg/m ³ Ceiling(STEL)
Carbon fiber	10 mg/m ³ (inhalable) 3 mg/m ³ (respirable)	ND	5 mg/m ³ (respirable)
Glass fiber	5 mg/m ³ (inhalable) (TWA) 1 fiber/cm ³ TWA (respirable)	ND	5 mg/m ³ (respirable dust)

Appropriate Engineering Controls: Local exhaust should be used to maintain levels below the TLV whenever MDI is processed, heated or spray applied. Standard reference sources regarding industrial ventilation (i.e., ACGIH Industrial Ventilation) should be consulted for guidance about adequate ventilation.

Personal Protective Equipment:

Respiratory Protection: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Eye / Face Protection: Wear appropriate safety glasses with side shields or chemical goggles as described by OSHA's eye and face protection regulations in 29CFR 1910.133 or European Standard EN166.

Skin Protection: The glove material has to be impermeable and resistant to the product. Cover as much of the exposed area as possible, with protective clothing.

Section 9. Physical and Chemical Properties

Physical Appearance:	Carbon fiber cloth coated with viscous resin.
Odor:	Pungent
Odor Threshold:	ND
pH:	ND
Melting Point Range:	NA
Boiling point:	ND
Flash Point:	370°F (188°C)
Evaporation rate:	ND
Method Used:	Pensky-Martens Closed Cup
Flammability Limits (vol/vol%):	Lower: N/A Upper: N/A
Vapor Pressure:	ND
Vapor Density:	ND
Relative Density:	ND
Specific Gravity:	1.75 – 1.85 (carbon fiber); 1.23 (resin)
Water Solubility:	Not soluble. Reacts with water to liberate CO ₂ gases. Dangerous reactions can occur in large masses producing toxic gases, hazardous runaway polymerization, and excessive heat caused by exothermic reaction.
Partition coefficient (n-octanol/water):	ND.
Auto-ignition Temperature:	ND
Decomposition Temperature:	ND
Viscosity:	ND

Section 10. Stability and Reactivity

Reactivity: Contact with moisture, other materials which can react with isocyanates or temperatures above 400°, may cause polymerization.



Chemical Stability: Stable under standard use and storage conditions.

Possibility of Hazardous reactions: No dangerous reactions known. Hazardous polymerization can occur. Polymerization can be catalyzed by water and strong bases.

Conditions to Avoid: Contamination with water.

Incompatible Materials / Chemicals: Avoid contact with acids, water, alcohols, amines, ammonia, bases, moist air, and strong oxidizers. Avoid contact with metals such as aluminum, brass, copper, galvanized metals, tin, zinc. Avoid contact with moist organic absorbants. Reaction with water will generate carbon dioxide and heat. Avoid contact with polyols and other Isocyanates.

Hazardous Decomposition Products: Hazardous combustion products may include but are not limited to: nitrogen oxides, isocyanates, Hydrogen cyanide, carbon monoxide, and carbon dioxide.

Section 11. Toxicological Information

For 26447-40-5 Diphenylmethane diisocyanate (MDI) containing Methylene bisphenyl isocyanate (CAS No: 10168-8):

Oral LD50 (rats): >1000 mg/kg

Dermal LD50 (rabbits): >2000 mg/kg

Primary irritant effect:

On the skin: Irritant to skin and mucous membranes.

On the eye: Irritating effect.

Sensitization: Sensitization possible through inhalation. Sensitization possible through skin contact.

Symptoms:

Inhalation: MDI/ vapors or mist at concentrations above the TLV can irritate the mucous membranes in the respiratory tract causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function.

Eye Contact: Liquid, aerosols or vapor are irritating and can cause tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. Damage, however, is usually reversible.

Skin Contact: Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

Ingestion: Irritation and corrosive action can occur in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

Chronic Health Effects:

Mutagenicity (Effects on genetic material): Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in-vitro studies; other in-vitro studies were negative. Animal genetic toxicity studies were predominantly negative.

Other information (about experimental toxicology):

Cancer Information: Lung tumors have been observed in laboratory animals exposed to aerosol droplets of MDI/Polymeric MDI (6mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Teratology (Birth Defects): In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

Reproductive Effects: Contains component(s) which have been shown to interfere with reproduction in animal studies. The component(s) is/are triethyl phosphate. The dose required to produce such effects are highly unlikely with the use of this product.

Carcinogenic Categories:

IARC (International Agency for Research on Cancer): None of the ingredients is listed.

NTP (National Toxicology Program): None of the ingredients listed.



Section 12. Ecological Information

Ecotoxicity: Based largely or completely on information for MDI and polymeric MDI: the measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50 or EC50 >100 mg/l in the most sensitive species tested). The LC50 in earthworm *Eisenia foetida* is >1000 mg/kg.

Aquatic toxicity: No further relevant information available.

Persistence and degradability: Based largely or completely on information for MDI and polymeric MDI: in the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Other adverse effects: No further relevant information available.

Section 13. Disposal Considerations

Waste treatment methods: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging: Dispose of in accordance to all local, state, and/or national regulation.

Section 14. Transport Information

IMDG / RID / IATA / ADR

Shipping Name:	Not regulated
Technical shipping name:	Not Applicable
U.N. number:	Not Applicable
Hazard class:	Not Applicable
Packing group:	Not Applicable

Section 15. Regulatory Information

SARA Regulations:

Section 355: None of the ingredients is listed

Proposition 65: None of the ingredients is listed

EPA: None of the ingredients is listed

Section 16. Other Information

Key Legend Information:

N/A – Not Applicable

ND – Not Determined

ACGIH – American Conference of Governmental Industrial Hygienists

OSHA – Occupational Safety and Health Administration

PEL – Permissible Exposure Limit

NIOSH – National Institute for Occupational Safety and Health

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