Section 1. Product and Company Identification

Product Name: TridentWrap
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
Skin corrosion/irritation – Category 2
Sensitization / Skin – Category 1
Eye damage/irritation – Category 2
Acute Toxicity - Inhalation – Category 4
Sensitization / Respiratory – Category 1
Carcinogenicity – Category 2
Specific target organ toxicity (Single Exposure) (Respiratory System) – Category 3
Specific target organ toxicity - Inhalation (Repeated Exposure) – Category 2

Label Elements:

Hazard Statements:
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure if inhaled.
Signal Word: DANGER
Precautionary Statement:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well - ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
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 advice/ attention.
P3 33 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P403 + P233 Store in a well - ventilated p lace. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

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 %
Fiberglass glass dust	65997-17-3	65 – 70
Isocyanates, reaction product of polyol with MDI	53862-89-8	18 – 35
4,4-methylenediphenyl diisocyanate (MDI)	101-68-8	4 – 11
Reaction mass of 4,4'-methylenediphenyl diisocyanate and 2,2'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl) phenyl isocyanate	9016-87-9	4 – 16

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

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: Use self-contained breathing apparatus, and full protective equipment. 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 ^{0}F and 86 ^{0}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 diisocyanate (101-68-8)	0.005 ppm (TWA)	ND	0.02 ppm Ceiling (STEL) 0.2 mg/m^3 Ceiling (STEL)
Fibrous glass dust	5 mg/m^3 (inhalable)	ND	5 mg/m^3 (respirable)

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:	Fiberglass cloth coated with viscous resin.
Odor:	Pungent
Odor Threshold:	No data available
pH:	No data available
Melting Point Range:	No data available
Boiling point:	No data available
Flash Point:	>230°F (>110°C)
Evaporation rate:	No data available
Method Used:	Closed Cup

Flammability Limits (vol/vol%):	**Lower:**	N/A	**Upper:** N/A
Vapor Pressure:	No data available		
Vapor Density:	No data available		
Relative Density:	No data available		
Specific Gravity:	2.5 (glass)	1.2 (resin)	
Water Solubility:	No data available		
Partition coefficient (n-octanol/water):	No data available		
Auto-ignition Temperature:	No data available		
Decomposition Temperature:	No data available		
Viscosity:	No data available		

Section 10. Stability and Reactivity

Reactivity: No dangerous reaction known under conditions of normal use.
Chemical Stability: Stable under standard use and storage conditions.
Possibility of Hazardous reactions: Reaction with water (moisture) produces CO_2-gas. Exothermic reaction with materials containing active hydrogen groups. The reaction becomes progressively more vigorous and can be violent at higher temperatures if the miscibility of the reaction partners is good or is supported by stirring or by the presence of solvents. MDI is insoluble with, and heavier than water and sinks to the bottom but reacts slowly at the interface. A solid water-insoluble layer of polyurea is formed at the interface by liberating carbon dioxide gas.
Conditions to Avoid: Extremes of temperature and direct sunlight. Exposure to air or moisture over prolonged periods.
Incompatible Materials / Chemicals: Acids. Bases. Amines. Steam.
Hazardous Decomposition Products: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke.

Section 11. Toxicological Information

Acute Toxicity:
Isocyanates, reaction product of polyol with MDI:
Acute oral: LD50 (Rat, male): > 10,000 mg/kg. Method: OECD Test Guideline 401
Acute dermal toxicity: LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: OECD Test Guideline 402

4,4'-methylenediphenyl diisocyanate:
Acute oral: LD50 (Rat, male): > 10,000 mg/kg. Method: OECD Test Guideline 401
Acute dermal toxicity : LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: OECD Test Guideline 402

Diphenylmethanediisocyanate:
Acute oral: LD50 (Rat, male): > 10,000 mg/kg. Method: OECD Test Guideline 401
Acute dermal toxicity : LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: OECD Test Guideline 402

Acute inhalation toxicity:
Acute toxicity estimate: 1.34 mg/l
Exposure time: 4 h

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

Symptoms related to the physical, chemical and toxicological characteristics:

Eye Contact: Vapours may cause irritation to the eyes, respiratory system and the skin.
Skin Contact: May cause skin irritation and/or dermatitis.
Respiratory or skin sensitization: Causes sensitisation.

Chronic Health Effects:

Mutagenicity (Effects on genetic material): 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.
Reproductive toxicity: Animal testing did not show any effects on fertility.
Numerical measures of toxicity: No specific data
Delayed and immediate effects and also chronic effects from short and long-term exposure:

STOT - single exposure: May cause respiratory irritation
Long term exposure: No specific data

Carcinogenic Categories:

NTP (National Toxicology Program): None of the ingredients is 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 (Brachydanio rerio (zebrafish)) is >1000 mg/l after 96h of exposure.
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 regislation.

Section 14. Transport Information

International Regulations

IATA: Not regulated as dangerous goods
IMDG: Not regulated as dangerous goods

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable for product as supplied.

National Regulations

DOT Classification

UN/ID/NA number: NA 3077
Proper shipping name: Other Regulated Substances, Solid, N.O.S. (Methylene Diphenyl Diisocyanate)
Class: 9
Packing group: III
Labels : CLASS 9
ERG Code : 171
Marine pollutant: no

Section 15. Regulatory Information

The components of this product are reported in the following inventories:

CH INV: The formulation contains substances listed on the Swiss Inventory, On the inventory, or in compliance with the inventory
TSCA: On the inventory, or in compliance with the inventory
DSL: All components of this product are on the Canadian DSL
AICS: On the inventory, or in compliance with the inventory
NZIoC: Not in compliance with the inventory
ENCS: On the inventory, or in compliance with the inventory
KECI: On the inventory, or in compliance with the inventory
PICCS: On the inventory, or in compliance with the inventory
IECSC: On the inventory, or in compliance with the inventory
TCSI: On the inventory, or in compliance with the inventory

TSCA - 5(a) Significant New Use Rule List of Chemicals: No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D): No substances are subject to TSCA 12(b) export notification requirements

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

The information contained herein is based on the data available to us and is believed to be accurate. The data is offered in good faith as typical values and not as product specification. The information in this data sheet was compiled from information supplied by the vendors of the components of this compound. CSNRI makes no warranty either expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. The recommended industrial hygiene and safe handling procedures are believed to be genuinely applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. CSNRI assumes no responsibility for injury from the use of the product described herein. The information is intended only to assist in the safe handling of this material. CSNRI DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR FREEDOM FROM PATENT INFRINGEMENT. CSNRI WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Date of issue: 05.18.23 **Revision date:** N/A **Supersedes:** N/A **Version:** 1.0