

## SAFETY DATA SHEET

### Section 1: Identification

**Product Name:** VULCAN 42™ (A-Side)  
**PHOENIX MCBS, LLC**  
**804 Summer Park, Suite 450**  
**Stafford, TX 77477**  
**281-627-0661**

Spill, leak, fire, exposure, or accident, call  
 CHEMTREC day or night  
 Domestic North America: **800-424-9300**  
 email: [info@phoenixliners.com](mailto:info@phoenixliners.com)

### Section 2: Hazards Identification

#### GHS Ratings:

Organ toxin single exposure	3	Transient target organ effects - Respiratory tract irritation
Skin Irritation / Skin Sensitizer	2 / 1	
Eye Irritation	2A	
Respiratory Sensitizer (Solid/Liquid)	1	
Chronic Aquatic Toxicity	2	
Acute Aquatic Toxicity	2	
Acute Toxicity: Dermal	3	
Acute Toxicity: Oral	4	

#### GHS Hazards:

May cause respiratory irritation	Toxic to aquatic life, with long lasting effects
Causes skin irritation	May cause an allergic skin reaction
Causes serious eye irritation	Toxic in contact with skin
May cause allergy or asthma symptoms or breathing difficulties if inhaled	Harmful if swallowed

#### GHS Precautions:

If medical advice is needed, have product container or label at hand
Keep out of reach of children
Read label before use
Avoid breathing dust / fume / gas / mist / vapors / spray
Use only outdoors or in a well-ventilated area
Keep container tightly closed
Wash thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Contaminated work clothing should not be allowed out of the workplace
Avoid release to the environment
In case of inadequate ventilation wear respiratory protection
Do not eat, drink, or smoke while using this product
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor / physician if you feel unwell

## GHS Precautions (cont.):

Wash contaminated clothing before reuse

IF ON SKIN: Wash with soap and water

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing

If skin irritation or a rash occurs: Get medical advice/attention

Call a POISON CENTER or doctor / physician

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Store in a well ventilated place. Keep cool

Dispose of contents/container in accordance with applicable regional, national, and local laws and regulations

## Danger



## Section 3: Hazards Identification

Chemical Name	CAS number	Weight Concentration %
Polyurethane prepolymer	0053880-05-0	38 - 71%
Isophorone Diisocyanate	0004098-71-9	22 - 40%
4-Methyl-1, 3-Dioxolan-2-One	0000108-32-7	6 - 10%
Homopolymer of HDI	0028182-81-2	1 - 4%

## Section 4: First-aid Measures

**Inhalation:** Remove to fresh air if effects occur. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Consult a physician or transport to a medical facility.

**Skin Contact:** Wash immediately and thoroughly with soap and flowing water. Remove contaminated clothing while washing. Seek medical attention if irritation persists. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water.

**Eye Contact:** Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for a duration of 15-20 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists: Get medical advice/attention.

**Ingestion:** DO NOT induce vomiting. Give 1 or 2 glasses of milk or water to drink and refer person to medical personnel. Do not give anything by mouth to an unconscious person. If vomiting occurs naturally, lie on your side, in the recovery position.

## Section 5: Fire-fighting Measures

**Suitable Extinguishing Media:** If water is used, use very large quantities of cold water.

Dry chemical, alcohol-resistant foam, carbon dioxide is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Sand or earth may be used for small fires only.

**Specific Hazards in Case of Fire:** Excessive pressure or temperature may cause explosive rupture of containers. Water contamination will produce carbon dioxide. Do not reseal contaminated containers as pressure buildup may rupture them.

**Fire Fighting:** Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Water may be ineffective but can be used to cool containers exposed to heat or flame. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot, burning liquid.

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

**Special Protective Actions:** Wear NIOSH approved self-contained breathing apparatus in positive pressure mode with full-face piece. Boots, gloves (neoprene), goggles, and full protective clothing are also required.

## Section 6: Accidental Release Measures

**Emergency Procedure:** Keep unnecessary people away; isolate hazard area and deny entry. Do not touch or walk through spilled material. Clean up immediately. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Treat the spill area with the decontamination solution, using about 10 parts of solution for each part of the spill, and allow it to react for at least 15 minutes.

**Recommended Equipment:** Positive pressure, full-face piece self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA (NIOSH approved).

**Personal Precautions:** Avoid breathing vapors. Avoid contact with skin, eyes or clothing. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing.

**Environmental Precautions:** Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers.

**Methods & Materials for Containment & Clean-up:** Soak up material with absorbent and shovel into a chemical waste container. Residues from spill cleanup may continue to be regulated under provisions of RCRA and require storage and disposal as hazardous waste. For major spills, call CHEMTREC (Chemical Transportation Emergency Center) at 800-424-9300.

## Section 7: Handling and Storage

**Handling:** Wash hands after use. Do not get in eyes, on skin or on clothing. Do not breathe vapors or mists. Use good personal hygiene practices. Eating, drinking and smoking in work areas is prohibited. Remove contaminated clothing and protective equipment before entering eating areas. Workers should shower and change to fresh clothing after each shift. A sensitized individual should not be exposed to the product that caused the sensitization. Employee education and training in safe handling of this material is required under OSHA hazard communication standard. Individuals with existing respiratory disease such as chronic bronchitis, emphysema, or asthma should not be exposed to isocyanates.

**Ventilation Requirements:** Use only with adequate ventilation to control air contaminants to their exposure limits. The use of local ventilation is recommended to control emissions near the source.

**Storage Room Requirements:** Keep container(s) tightly closed and properly labeled. Store in cool, dry, well-ventilated areas away from heat, direct sunlight and incompatibilities. Store in approved containers and protect against physical damage. Keep containers securely sealed when not in use. Indoor storage should meet OSHA standards and appropriate fire codes. Containers that have been opened must be carefully resealed to prevent leakage. Empty container retain residue and may be dangerous. Do not cut, drill, grind, weld, or perform similar operations on or near containers.

## Section 8: Exposure Controls / Personal Protection

**Eye/face Protection:** Wear eye protection with side shields or goggles. Wear indirect-vent, impact and splash resistant goggles when working with liquids. If additional protection is needed for entire face, use in combination with a face shield.

**Skin Protection:** Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Use of an apron and over-boots of chemically impervious materials such as neoprene or nitrile rubber is recommended to avoid skin sensitization. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Launder soiled clothes or properly disposed of contaminated material, which cannot be decontaminated.

**Respiratory Protection:** If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker, a respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed. Check with respiratory protective equipment suppliers.

When airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied air respirator with a full-face piece or an air supplied hood. For emergencies, use a positive pressure self-container breathing apparatus.

Air purifying (cartridge type) respirators are not approved for protection against isocyanates.

**Engineering Controls:** Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Eyewash stations and showers should be available in areas where this material is used and stored.

Chemical Name	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Isophorone Diisocyanate	Not Established	Not Established	NIOSH TWA .005 ppm   .045 mg/m <sup>3</sup>
Isophorone Diisocyanate	Not Established	.005 ppm   .045 mg/m <sup>3</sup>	NIOSH STEL .02 ppm   .180 mg/m <sup>3</sup>

## Section 9: Physical and Chemical Properties

**Appearance:** Thin pale yellow viscous liquid

**Density:** 8.67 lb/gal

**pH:** No Data

**Freezing point:** No Data

**Evaporation rate:** Slower than ether

**Explosive Limits:** No Data

**Vapor Density:** Heavier than air

**Water Solubility:** Reacts with water

**Low Boiling Point:** 316°C

**Decomposition Temperature:** No Data

**VOC (Regulatory):** 0.0 lb/gal

**Odor:** Mild chemical

**Odor threshold:** N/A

**Melting point:** No Data

**Flash point:** 200°F / 97°C

**Flammability:** No Data

**Specific Gravity:** 1.03

**Partition coefficient (n-octanol/water):** No Data

**Autoignition temperature:** No Data

**Viscosity:** No Data

## Section 10: Stability and Reactivity

**Stability:** Material is stable at standard temperature and pressure.

**Conditions to Avoid:** Heat, high temperature, open flame, sparks, and moisture.

**Hazardous Reactions/Polymerization:** May occur. High temperatures, above 204 °C (400 °F) in the presence of moisture, alkalis, tertiary amines, and metal compounds will accelerate polymerization. Possible evolution of carbon dioxide gas may rupture closed containers.

**Incompatible Materials:** Strong oxidizing agents, Strong acids, Alcohols.

**Hazardous Decomposition Products:** Carbon dioxide, carbon monoxide, nitrogen oxides.

## Section 11: Toxicological Information

**Skin Corrosion/Irritation:** Isocyanates react with skin protein and moisture and can cause irritation. Prolonged contact can cause reddening, swelling, rash, scaling, blistering, and, in some cases, skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms as a result of contact with very small amounts of liquid material or as a result of exposure to vapor. Causes skin irritation.

**Serious Eye Damage/Irritation:** Liquid, aerosols or vapors are severely irritating and can cause pain, tearing, reddening and swelling. Prolonged vapor contact may cause conjunctivitis. Any level of contact should not be left untreated. Causes serious eye irritation.

**Carcinogenicity:** No data available.

**Respiratory/Skin Sensitization:** Vapors irritate nose and respiratory passages. Severe overexposure may induce respiratory sensitization with asthma like symptoms. Symptoms include chronic cough, tightness of chest with difficulty in breathing. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

**Germ Cell Mutagenicity:** No data available.

**Reproductive Toxicity:** No data available.

**Specific Target Organ Toxicity - Single Exposure:** IPDI vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). High vapor concentrations may cause central nervous system (CNS) depression as evidenced by giddiness, headache, dizziness, and nausea. 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). May cause respiratory irritation.

**Specific Target Organ Toxicity - Repeated Exposure:** Repeated inhalation may cause lung damage.

**Aspiration Hazard:** No data available.

**Acute Toxicity:** Exposure may cause mucous membrane and respiratory tract irritation, tightness of chest, headache, shortness of breath, and a dry cough. At concentrations exceeding current occupational limits and for sensitized individuals at levels less than or greater than current occupational limits, asthma-like symptoms may occur. These symptoms may include coughing, wheezing, and shortness of breath. A hypersensitive pneumonitis may also occur if the person is sensitized. Fever, nonproductive cough, wheezing, chills, and shortness of breath characterize this syndrome. Central nervous system (CNS) depression may also result. The effects of acute exposure may be delayed in onset up to 12-24 hours.

0004098-71-9

ISOPHORONE DIISOCYANATE

LC50: 123-160 mg/m<sup>3</sup> (13.6-17.6 ppm) (4-hour exposure) (aerosol) (1,2) (Rat)

LD50 (oral, male rat): greater than 2,500 mg/kg (1)

LD50 (oral, male mouse): greater than 2,500 mg/kg (1)

LD50 (dermal, male rat): approx. 1,000 mg/kg (4-hour exposure); approx. 500 mg/kg (4-day exposure) (1)

**Potential Health Effects - Miscellaneous:**

0028182-81-2

HOMOPOLYMER OF HDI

Overexposure may cause asthma-like reactions with shortness of breath, wheezing, cough, which may be permanent; or permanent lung sensitization. This effect may be delayed for several hours after exposure. The following medical conditions may be aggravated by exposure: asthma, skin disorders, respiratory disorders. Potential skin sensitizer that may cause allergic reactions and contact dermatitis resulting in severe irritation, dryness, and cracking of the skin. Skin or eye contact may cause any of the following: irritation.

## Section 12: Ecological Information

**Toxicity:** Toxic to aquatic life with long lasting effects.

**Persistence and Degradability:** No data available.

**Bioaccumulative Potential:** No data available.

**Mobility in Soil:** No data available.

**Other Adverse Effects:** No data available.

## Section 13: Disposal Considerations

**Waste Disposal Methods:** Under RCRA, it is the responsibility of the user of the product, to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state, and local laws.

Slowly stir the isocyanate waste into the decontamination solution described in section 6. Let stand for 48 hours, allowing the evolved carbon dioxide to vent away. Residues may still be subject to RCRA storage and disposal requirements.

Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.

## Section 14: Transport Information

**Agency:** DOT  
**Proper Shipping Name:** TOXIC LIQUID, ORGANIC, N.O.S. (ISOPHORONE DIISOCYANATE)  
**UN Number:** NA 2810  
**Packing Group:** III  
**Hazard Class:** 6.1  
**Placard:** Toxic

**Agency:** IMDG  
**Proper Shipping Name:** TOXIC LIQUID, ORGANIC, N.O.S. (ISOPHORONE DIISOCYANATE)  
**UN Number:** NA 2810  
**Packing Group:** III  
**Hazard Class:** 6.1  
**Placard:** Toxic  
**Marine Pollutant:** Yes

**Agency:** IATA  
**Proper Shipping Name:** TOXIC LIQUID, ORGANIC, N.O.S. (ISOPHORONE DIISOCYANATE)  
**UN Number:** NA 2810  
**Packing Group:** III  
**Hazard Class:** 6.1  
**Placard:** Toxic

## Section 15: Regulatory Information

CAS	Chemical Name	% By Weight	Regulation List
0053880-05-0	POLYURETHANE PREPOLYMER	38-71%	DSL, SARA312, TSCA
0004098-71-9	ISOPHORONE DIISOCYANATE	22-40%	DSL, SARA312, SARA313, VOC, TSCA
0000108-32-7	4-METHYL-1,3-DIOXOLAN-2-ONE	6-10%	DSL, SARA312, TSCA
0028182-81-2	HOMOPOLYMER OF HDI	1-4%	DSL, SARA312, TSCA

## Section 16: Other Information

The customer is responsible for determining the proper PPE code for this material within their respective business / application process.

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Reviewer Revision 0

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