

SAFETY DATA SHEET



Section 1: Identification

Product Name: GUARDIAN™ (A-Side)
PHOENIX, LLC
804 Summer Park, Suite 450
Stafford, TX 77477
888-392-3339

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

Section 2: Hazards Identification

GHS Ratings:

Inhalation Toxicity	Acute Tox. 4	Gases>2500+<=5000ppm, Vapors>10+<=20mg/l, Dusts&mists>1+<=5mg/l
Skin corrosive	2	Reversible adverse effects in dermal tissue, Draize score: >=2.3 < 4.0 or persistent inflammation
Eye corrosive	2B	Mild eye irritant: Subcategory 2B, Reversible in 7 days
Respiratory sensitizer	1	Respiratory sensitizer
Skin sensitizer	1B	Skin sensitizer
Carcinogen	2	Limited evidence of human or animal carcinogenicity
Organ toxin single exposure	3	Transient target organ effects - Narcotic effects - Respiratory tract irritation
Organ toxin repeated exposure	2	Presumed to be harmful to human health - Animal studies with significant toxic effects relevant to humans at generally moderate exposure (guidance) - Human evidence in exceptional cases

GHS Hazards:

H315	Causes skin irritation
H317	May cause an allergic skin reaction
H320	Causes eye irritation
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure

GHS Precautions:

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 / vapors / spray
P261	Avoid breathing dust / fume / gas / mist / vapors / spray
P264	Wash exposed skin thoroughly after handling

GHS Precautions (cont.):

P271	Use only outdoors or in a well-ventilated area
P280	Wear protective gloves / protective clothing / eye protection / face protection
P281	Use personal protective equipment as required
P285	In case of inadequate ventilation wear respiratory protection
P312	Call a POISON CENTER or doctor / physician if you feel unwell
P314	Get Medical advice/attention if you feel unwell
P321	Specific treatment (as described on this label)
P362	Take off contaminated clothing and wash before reuse
P302+P352	IF ON SKIN: Wash with soap and water
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P304+P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338	IF IN EYES: Rinse continuously 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
P332+P313	If skin irritation occurs: Get medical advice / attention
P337+P313	Get medical advice / attention
P342+P311	Call a POISON CENTER or doctor / physician
P405	Store locked up
P403+P233	Store in a well-ventilated place. Keep container tightly closed
P501	Dispose of contents/container in accordance with applicable regional, national, and local laws and regulations

Danger



Section 3: Composition / Information on Ingredients

Chemical Name	CAS number	Weight Concentration %
4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	30 - 60%
Isocyanate Prepolymer		10 - 30%
Homopolymer of methylenediphenyl diisocyanate	25686-28-6	10 - 30%
Diphenylmethane Diisocyanate (MDI) Mixed Isomers	26447-40-5	1 - 5%

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.

Eye Contact: Immediately flush eyes with large quantities of water for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention

without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

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.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Cholinesterase inhibition has been noted in human exposure but is not of benefit in determining exposure and is not correlated with signs of exposure. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

Section 5: Fire-fighting Measures

Flash Point: >100 C (>212 F)

Flammable Properties: Product is not considered a fire hazard, but will burn if ignited. NFPA Flammability Class: III B (Combustible liquid).

Suitable Extinguishing Media: Carbon dioxide, dry chemical, water fog or fine spray. Alcohol resistant foams are preferred, general purpose synthetic foams or protein foams may function, but will not be as effective.

Unsuitable Extinguishing Media: Do not use direct water stream, as it may spread fire.

Unusual Fire and Explosion Hazards: Product reacts with water. Reaction may produce heat and/or gases. This 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.

Products of Combustion: Thermal decomposition in the presence of air may yield carbon monoxide, carbon dioxide, phenolics, ammonia, nitrogen oxides, isocyanates, hydrogen cyanide and other unidentified toxic and/or irritating compounds.

Fire Fighting: Stay upwind and keep people away. Isolate fire and deny unnecessary entry. Keep out of low areas where gases (fumes) can accumulate. Water is not recommended, but may be applied in large quantities as a fine spray when other extinguishing agents are not available. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out. Contain fire water run-off if possible, as it may cause environmental damage. Review section 6 and section 12 of this SDS.

Protection of Firefighters: Wear positive pressure self-contained breathing apparatus (SCBA) and approved protective clothing (helmet, coat, trousers, boots and gloves). If contact is likely, use full chemical resistant fire fighting clothing with SCBA.

Section 6: Accidental Release Measures

Personal Precautions: Put on appropriate personal protective equipment (see section 8).

Environmental Precautions: Prevent spilled material from contact with soil, drains and sewers.

Methods for Containment: Contain by diking with sand, earth or other suitable material.

Methods for Clean-up: Absorb spill with an inert material, use non-sparking tools to place into labeled waste container for disposal.

Section 7: Handling and Storage

Handling: Wear appropriate personal protective equipment (see section 8). Avoid contact with skin, eyes or clothing. Do not breathe vapor or mist. Do not ingest. Avoid prolonged or repeated contact with skin. May cause allergic skin reaction, persons with a history of skin sensitization should not be employed in any process in which this product is used. Wash thoroughly with soap and water after handling. Do not handle or store near flame, heat or strong oxidants. Keep away from sources of ignition and hot metal surfaces.

Storage: Store original unopened containers in a sheltered area between 60°F and 80°F (15°C and 27°C) at atmospheric pressure. Do not store in direct sunlight. Keep containers closed when not in use.

Section 8: Exposure Controls / Personal Protection

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
4,4'-Diphenylmethane Diisocyanate (MDI) 101-68-8	Not Established	0.005 ppm TWA (listed under Methylene bisphenyl isocyanate (MDI))	NIOSH: 0.005 ppm TWA (listed under Methylene bisphenyl isocyanate); 0.05 mg/m ³ TWA 0.020 ppm Ceiling (10 min); 0.2 mg/m ³ Ceiling (10 min)
Isocyanate Prepolymer	Not Established	Not Established	Not Established
Homopolymer of methylenediphenyl diisocyanate 25686-28-6	Not Established	Not Established	Not Established
Diphenylmethane Diisocyanate (MDI) Mixed Isomers 26447-40-5	Not Established	Not Established	Not Established

Engineering Controls: General mechanical ventilation is sufficient for most conditions. Control airborne levels below the exposure guidelines, if established. Local exhaust ventilation may be necessary for some operations.

General Hygiene Considerations: Wash thoroughly after handling and before eating, drinking or smoking.

Eye/face Protection: Use chemical safety glasses, splash-proof eye goggles or goggles with full faceshield.

Skin Protection: Use neoprene, nitrile/butadiene rubber or other impermeable chemical resistant gloves to prevent skin irritation. If potential for skin contact is present, wear impervious, long-sleeved, body covering clothing and rubber boots.

Respiratory Protection: If exposure may or does exceed occupational exposure limits, respiratory irritation is experienced, or during spray application, use a properly fitted MSHA/NIOSH approved respirator fitted with organic vapor cartridges and particulate pre-filters. If the respirator is the sole means of protection, use a full-face supplied air respirator. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use an approved positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). If sanding or grinding on cured material, use above respirator fitted with HEPA filters or a dust mask.

Contaminated Gear: Remove contaminated clothing and shoes while washing. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

Section 9: Physical and Chemical Properties

Appearance: Clear to pale yellow	Lbs VOC/Gallon Less Water: 0.0
Vapor Pressure: No Data	Odor: Mild
pH: No Data	Odor threshold: No Data
Freezing point: No Data	Melting point: No Data
Evaporation rate: No Data	Flash point: 212°F / 100°C
Explosive Limits: No Data	Flammability: No Data
Vapor Density: No Data	Specific Gravity: 1.1 - 1.3
Solubility: No Data	Partition coefficient (n-octanol/water): No Data
Boiling Point: 200°C	Autoignition temperature: No Data
Decomposition Temperature: No Data	Viscosity: No Data

Section 10: Stability and Reactivity

Chemical Stability: Stable under recommended storage conditions (see Section 7).

Conditions to Avoid: Avoid temperatures above 450 deg F (230 deg C), potential violent decomposition may occur. Avoid contact with water, as material reacts with water, releasing carbon dioxide which can cause rapid pressure buildup and rupture of closed containers. Elevated temperatures accelerate this reaction.

Incompatible Materials: Strong acids, bases, or oxidizing agents. Avoid unintended contact with amines, alcohols, water, moist air and metals such as aluminum, brass, copper, tin, zinc and galvanized metals.

Products of Combustion: Thermal decomposition in the presence of air may yield carbon monoxide, carbon dioxide, phenolics, ammonia, nitrogen oxides, isocyanates, hydrogen cyanide and other unidentified toxic and/or irritating compounds.

Hazardous polymerization will not occur.

Section 11: Toxicological Information

Mixture Toxicity

Oral Toxicity LD50: 3,796mg/kg
Inhalation Toxicity LC50: 2mg/L

Component Toxicity:

101-68-8	4,4'-Diphenylmethane Diisocyanate (MDI) Oral LD50: 2,050 mg/kg (Rat) Inhalation LC50: 2 mg/L (Rat)
26447-40-5	Diphenylmethane Diisocyanate (MDI) Mixed Isomers Oral LD50: 2,050 mg/kg (Rat) Inhalation LC50: 2 mg/L (Rat)

Likely Routes of Exposure:

No data found

Target Organs

May cause damage to the following organs:

Eyes Respiratory System

Effects of Overexposure

Carcinogenicity: Rats have been exposed for their lifetime to respirable aerosol droplets of MDI/polymeric MDI which resulted in chronic pulmonary irritation at high concentrations. Only at the top level (6 mg/m³), there was a significant incidence of a benign tumor of the lung (adenoma) and one malignant tumor (adenocarcinoma). There were no lung tumors at 1 mg/m³ and no effects at 0.2 mg/m³. Overall, the tumor incidence, both benign and malignant, and the number of animals with the tumors were not different from controls. The increased incidence of lung tumors is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung, which occurred throughout the study. Tumors occurred concurrently with respiratory irritation and lung injury. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumor formation will occur. Current exposure guidelines (see section 8) are expected to protect against these effects reported for MDI.

CAS Number	Description	% Weight	Carcinogen Rating
101-68-8	4,4'-Diphenylmethane Diisocyanate (MDI)	30 to 60%	4,4'-Diphenylmethane Diisocyanate (MDI):
26447-40-5	Diphenylmethane Diisocyanate (MDI) Mixed Isomers	1 to 5%	Diphenylmethane Diisocyanate (MDI) Mixed Isomers:

Section 12: Ecological Information

Only component information is listed, if any. No testing has been performed on this mixture as it relates to ecological impact.

Component Ecotoxicity:

-None

Section 13: Disposal Considerations

Waste Disposal Methods: Dispose of in accordance with federal, state and local regulations. The preferred method for disposal of uncontaminated product is by recycling, reclaiming, incineration or other thermal destruction device using a licensed and permitted waste disposal contractor.

Section 14: Transport Information

Based on the Reportable Quantity for MDI of 5000 pounds, for DOT bulk shipments of over 10,000 pounds in a single container, the proper shipping information is:

Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (MDI)

UN number: UN3082

Packing Group: III

Class: 9

For smaller containers, such as IBC's (totes), drums, and pails; this material is Not Regulated for DOT shipping.

Agency	Proper Shipping Name	UN Number	Packing Group	Hazard Class
DOT	Not Regulated			
ICAO/IATA	Not Regulated			
IMDG	Not Regulated			
TDG	Not Regulated			

Section 15: Regulatory Information

USA Federal: This SDS has been prepared in compliance with the Occupational Safety and Health Act (OSHA) Hazard Communication Standard (29 CFR 1910.1200). This product is considered to be a hazardous chemical under that standard. The specific chemical identity and/or exact percentage of any proprietary ingredient(s) may be withheld as a trade secret, pursuant to the standard.

State of California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): To the best of our knowledge, this product contains the following chemicals which are known to the State of California to cause cancer, developmental or reproductive toxicity at levels which require warning under this statute:
- None

USA Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) - section 103 Hazardous Substances Reportable Quantities (RQs): To the best of our knowledge, this product contains the following chemicals which are listed in 40 CFR 302.4:

101-68-8 4,4'-Diphenylmethane Diisocyanate (MDI) 30 to 60 %

Massachusetts Right to Know: To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

26447-40-5 Diphenylmethane Diisocyanate (MDI) Mixed Isomers 1 to 5 %

101-68-8 4,4'-Diphenylmethane Diisocyanate (MDI) 30 to 60 %

New Jersey Right to Know: To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

26447-40-5 Diphenylmethane Diisocyanate (MDI) Mixed Isomers 1 to 5 %

Pennsylvania Right to Know: To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

101-68-8 4,4'-Diphenylmethane Diisocyanate (MDI) 30 to 60 %

USA Resource Conservation and Recovery Act (40 CFR 261): To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

- None

USA Superfund Amendments and Reauthorization Act (SARA) of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) - section 313 Toxic Release Inventory (TRI) Form R: To the best of our knowledge, this product contains the following chemicals which are listed in 40 CFR 372.65:

- None

USA Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) - section 302 Extremely Hazardous Substances Threshold Planning Quantities (TPQs): To the best of our knowledge, this product contains the following chemicals at levels which require reporting under this statute:

- None



WHMIS Symbol(s)

Section 16: Other Information

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

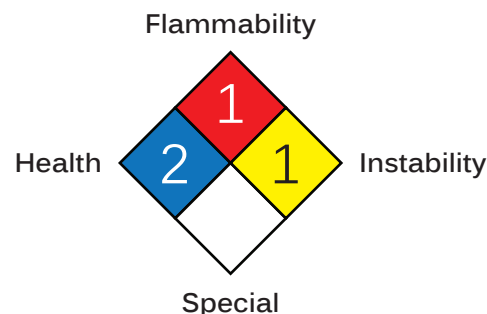
Hazardous Material Information System (HMIS)

2*	HEALTH
1	FLAMMABILITY
1	PHYSICAL HAZARD
X	PERSONAL PROTECTION

HMIS & NFPA Hazard Rating Legend

* = Chronic Health Hazard
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH

National Fire Protection Association (NFPA)



Date Prepared: 10/19/2018
Date Revised: 2018-10-19

Reviewer Revision 0

Notice to reader:

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PUPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behavior of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behavior should be determined by the user and made known to handlers, processors and end users.

Disclaimer:

PHOENIX, LLC MAKES NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO ANY INFORMATION PRESENTED HEREIN, ALL OF WHICH IS PROVIDED "AS IS". TO THE MAXIMUM EXTENT PERMITTED BY LAW, PHOENIX EXPRESSLY EXCLUDES ALL WARRANTIES, OBLIGATIONS, REPRESENTATIONS, LIABILITIES, TERMS AND CONDITIONS (WHETHER THEY ARE EXPRESS OR IMPLIED, OR ARISE IN CONTRACT, STATUTE, OR OTHERWISE, AND IRRESPECTIVE OF THE NEGLIGENCE OF PHOENIX, ITS EMPLOYEES OR AGENTS) IN CONNECTION WITH THE INFORMATION PRESENTED HEREIN. PHOENIX MAKES NO REPRESENTATIONS OR WARRANTIES AS TO MERCHANTABILITY, FITNESS FOR PURPOSE, NONINFRINGEMENT OR CONFORMITY WITH DESCRIPTION OR SAMPLE.