

Safety Data Sheet

Section 1. Identification

GHS product Identifier : IRO HD
Other means of identification : Not available

Relevant identified used of the substance or mixtures and uses advised against

Fiberglass cloth impregnated with water activated resin used for pipe coating protection.

Supplier's details Polyguard Products, Inc.
4101 South Interstate 45
Ennis, TX 75119
Tel: (214) 515-5000

Emergency telephone number) with hours of operation) CHEMTREC, US 1-800-424-9300 International 1-703-527-3887 (24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazardous Communications Standard (49CFR1910.1200) .

Classification of the substance or mixture : Sensitization/Respiratory- Category 1
Acute toxicity/Inhalation- Category 4
Skin Corrosion/Irritation- Category 2
Eye damage/Eye irritation- Category 2A
Specific target organ toxicity (single exposure) - Category 3

GHS label elements

Hazard pictogram



Signal word : Danger

Hazard statement : H 334 May cause allergy or asthma or breathing difficulties if inhaled.
H 332 Harmful if inhaled.
H 315 Causes skin irritation
H 319 Causes serious eye irritation
H 317 May cause an allergic skin reaction
H 335 May cause respiratory irritation.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves/protective clothing/eye protection/face protection. Do not get in eyes, on skin, or on clothing. Avoid breathing dust/fume/gas/mist/vapors/spray.

Response Collect spillage; IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Call a Poison Center/Doctor if you feel unwell.

Storage Store locked up. Store in a well-ventilated place. Keep cool. Keep away from water and wet locations.

Disposal Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known

Section 3. Composition/information on ingredients

Substance/Mixture	: Mixture
Other means of identification	: Not available
<u>CAS number/other identifiers</u>	
CAS number	: Not applicable
Product code	: Not applicable

Ingredient name	%	CAS Number
Fibrous glass (E-type, continuous filament)	40-65	65997-17-3
Surface sizing	< 1	N/A
Textured polyester filament yarn	< 4	N/A
Diphenylmethane diisocyanate (homopolymer)	3-8	39310-05-9
Diphenylmethane diisocyanate (MDI), containing Methylene Bisphenyl Isocyanate (CAS # 101-68-8)	10-25	26447-40-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentration applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures.

Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.
Inhalation	: Move victim to an area free from risk of further exposure. Administer oxygen as needed. Get medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Consult physician should this develop.
Skin contact	: 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.
Ingestion	: Do not induce vomiting unless directed by medical personal. If vomiting occurs, the head should be kept low so that the vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. 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

Potential acute health effects

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.
--------------------	---

Section 4. First aid measures

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, non-specific bronchial hyperactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attacks. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). These effects are usually reversible. Chemical or hypersensitivity. 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.

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.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following: Pain or irritation, watering and/or redness.

Inhalation : Adverse symptoms may include the following: Over exposure to isocyanates has also been reported to cause lung damage, (including decrease in lung function) which may be permanent. Sensitization can be either temporary or permanent. Asthma, other respiratory disorders (bronchitis, emphysema, bronchial hyperactivity).

Skin contact : Adverse symptoms may include the following: Irritation, redness, swelling, blistering scaling, rash, skin allergies and/or eczema.

Ingestion : Adverse symptoms may include the following: Nausea or vomiting.

Indication of immediate medical attention and special treatment needed, if necessary.

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.

Specific treatments : No specific treatment

Protection of first-aiders: : No action shall be taken involving any personal risk or without suitable training.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use cold water spray to cool fire-exposed containers to minimize the risk of 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. Products 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 when product burns.

Section 5. Fire-fighting measures

- Unsuitable extinguishing media** : Do not use water jets or water based fire extinguishers.
- Specific hazards arising from the chemical** : During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Products 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 when product burns.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
Carbon Monoxide, oxides of nitrogen and traces of HCN, MDI vapors and aerosols.
- Special protective equipment** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in a positive pressure mode. Wear protective firefighter clothing. 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.
- Special protective actions for fire fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in a positive pressure mode. Use old water to cool fire- exposed containers.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures.

- For non emergency personal** : Evacuate surrounding area. Keep unnecessary and unprotected personnel from entering. Keep people at a distance and stay upwind. Evacuate surrounding area. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel."
- Environmental precautions** : Avoid disposal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil, or air).
- Methods and materials for containment and cleaning up**
- Spill** : Approach release from upwind. Prevent entry into sewers, water courses, basements, or confined areas. Ensure adequate ventilation. Decontaminate floor with decontamination solution letting stand for at least 15 minutes. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, saw dust). Dispose contaminated material as waste. (see Section 13). Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Avoid contact with skins and eyes. Do not breathe aerosols or vapors. Ensure good ventilation/exhaustion at work place. Put on appropriate personal protective equipment (see Section 8). Avoid exposure-obtain special instructions before use. Do not handle until safety precautions have been read and understood. area or confined spaces. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

: Store in accordance with local regulations. Store in segregated and approved area. 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. Store locked up. Storage at temperatures between 64 F and 86 F. Keep away from humidity and water. Keep container tightly closed and sealed until ready to use. Do not store in unlabeled containers.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
4,4'-methylenediphenyl diisocyanate	OSHA PEL Z2 (United States) STEL: 0.02 ppm ceiling ACGIH TLV (United States) TWA: 0.005 ppm 8 hrs. NIOSH REL (United States) TWA: 0.005 ppm 8 hrs. Ceiling: 0.020 ppm 10 mins.
Fibrous glass	NIOSH REL (United States) TWA: 5 mg/m ³ for 8 hours (Total) OSHA PEL (United States) TWA: 5 mg/m ³ 8 hrs. (Respirable dust) TWA: 15 mg/m ³ 8 hrs. (Total) ACGIH TLV (United States) TWA: 5 mg/m ³ 8 hrs. (Inhalable) TWA: 1 fiber/cm ³ 8 hrs. (Respirable dust)

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airbornes contaminants below any recommended or statutory limits. The engineering controls also need to keep gas , vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Section 8. Exposure controls/personal protection

Hygiene measure:	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking, and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the work station location.
Eye/face protection	: Safety eyewear complying with an approved standard should be used when risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases and dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: appropriate safety glasses with side shields or chemical splash goggles.
Hand protection	: Chemical- resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Body protection	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	: Use a properly fitted, air purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance	
Physical state	: Fiberglass cloth coated with white viscous resin
Color	: White
Odor	: Pungent
Odor threshold	: Not available
pH	: Not applicable
Melting point	: Not applicable
Boiling point	: Not available
Flash Point	: 370 ° F (188 ° C) Pinsky-Martens Closed Cup
Burning time	: Not determined
Burning rate	: Not determined
Evaporation rate:	: Not determined
Lower & upper explosive (flammable) limits	: Lower: Not applicable : Upper: Not applicable
Vapor density	: Not determined
Vapor pressure	: Not determined
Relative density	: Not determined
Solubility	: No soluble. Reacts with water to generate CO ₂ gases. Dangerous reactions can occur in large masses producing toxic gases, hazardous runaway polymerizations, and excessive heat causes by exothermic reaction.
Partition coefficient: n- octanol/water	: Not determined
Auto- ignition temperature	: Not determined
Decomposition temperature	: Not determined
Viscosity	: Not determined

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
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	: Avoid contact with acids, water, alcohols, amines, bases, moist air and strong oxidizers. Avoid contact with metals such as aluminum, brass, copper, galvanized metals, tin zinc. Avoid contact with moist organic absorbents. 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

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Diphenylmethane diisocyanate	LD50 Oral	Rat	>1000 mg/m ³	-
	LD50 Dermal	Rabbit	> 2000 mg/kg	-

Irritation/Corrosion

Skin contact	: Irritant to skin and mucous membranes.
Eye contact	: Irritating effect.
Sensitization	
Skin	: Sensitization possible through skin contact.
Respiratory	: Sensitization possible through inhalation.
Carcinogenicity	
Classification	

Product/ingredient name	OSHA	IARC	NTP
Titanium Dioxide	-	2 B	-
Benzoyl chloride	-	2 A	-

Information on the likely routes of exposure	: Routes of entry anticipated: Oral, dermal, inhalation.
---	--

Potential acute health effects

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.
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.
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.

Section 11. Toxicological information

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.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following: Pain or irritation, watering and/or redness.

Inhalation : Adverse symptoms may include the following: Over exposure to isocyanates has also been reported to cause lung damage, (including decrease in lung function) which may be permanent. Sensitization can be either temporary or permanent. Asthma, other respiratory disorders (bronchitis, emphysema, bronchial hyperactivity).

Skin contact : Adverse symptoms may include the following: Irritation, redness, swelling, blistering scaling, rash, skin allergies and/or eczema.

Ingestion : Adverse symptoms may include the following: Nausea or vomiting.

Delayed and immediate effects and also chronic effects from short and long term exposure

Potential chronic health effects

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

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

Teratogenicity : 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.

Developmental effects : No known significant effects or critical hazards

Fertility effects : No known significant effects or critical hazards

Cancer information: lung tumors have been observed in laboratory animals exposed to aerosols droplets of MDI/Polymeric MDI (6 mg/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.

Numerical measures of toxicity

Acute toxicity estimates : There is no data available

Section 12. Ecological information

Toxicity

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 (LC 50 or EC 50 > 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 predominately insoluble polyureas which appear to be stable. In the atmosphere environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

Bio accumulative potential : There is no data available

Section 12. Ecological information

Mobility in soil

Soil/water partition coefficient (K_{oc}) : No further relevant information available.

Other adverse effects : No known significant effects or critical hazards

Section 13. Disposal Considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recycled products via a licensed waste disposal contractor. Waste should not be disposed of to a sewer. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, water ways, drains and sewers.

Section 14. Transportation information

DOT/IATA/IMDG : Not regulated

Section 15. Regulatory information

U.S. Federal regulations: **United States inventory (TSCA):** All components are listed.

State regulations

California Prop 65 : None of the ingredients are listed.

16. Other information

National Fire Protection Association (USA) NFPA 704

Health -2

Flammability-1

Instability-0

NFPA-704 was copyrighted by the National Fire Protection Association of Quincy, MA. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactive hazards of chemicals. The user is referred to certain limited number of with recommended classifications in NFPA 49 and NFPA 325, which would be used as guidelines only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Date of revision: 6/7/18
Date of previous issue N/A
Revisions: New product
Version 1
Prepared by C. Rogalski

Notice to reader: To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.