

Material Safety Data Sheet

Name of the Product: SMARTCARE HYPERTRON HYBRID CGGREY-BASE

Version No & date: CG/MSDS/758 / DEC 2024

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Product Name	SMARTCARE HYPERTRON HYBRID CGGREY-BASE
Chemical Name/Synonyms	Poly urea coating
Product description	Waterproofing Coat Base
CAS No.:	Mixture
Company Details:	
Manufacturer /Supplier:	Chemische Global Private Limited
Address:	Gat No 134/2, village Mahalunge, Talegaon Chakan road, Tal. Khed, Pune 410501
Tel:	+ 91 – 2135 - 662530
Fax:	+ 91 – 2135 – 662535
E mail :	cgpl.pune@gmail.com

2. HAZARDS IDENTIFICATION

Classification of the mixture

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Warning

Hazard statement(s)

H302

Harmful if swallowed.

H336

May cause drowsiness or dizziness.

H312

Harmful in contact with skin.

H319

Causes serious eye irritation.

H373

May cause damage to organs through prolonged or repeated exposure.

H410

Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P260

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P273

Avoid release to the environment.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P312 + P330

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

P302 + P352

IF ON SKIN: Wash with plenty of soap and 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.

Supplemental Hazard Statements

none

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2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Material Formal Name : Mixer

CAS No. : NA

Hazardous Components

Chemical Name	CAS	Classification	Conc.
Polyoxyalkylene Triol	9082-00-2		60-80
1,4- Butanediol	110-63-4	Acute Tox. 4; STOT SE 3; H302, H336	2-6
Diethylmethyl benzene diamine	68479-98-1	Acute Tox. 4; H302 Acute Tox. 4; H312 Eye Irrit. 2; H319 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	10-20

4. FIRST AID MEASURES

General Information : Not expected to be a health hazard when used under normal conditions.
First Aid responders should pay attention to self-protection and use the recommended protective clothing.
Ensure that eyewash stations and safety showers are close to the workstation location.

Inhalation : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

Skin Contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.

Eye Contact : Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.

Ingestion : Wash out mouth with water and obtain medical attention.

Advice to Physician : Treat symptomatically. Following cases of gross over-exposure, investigation of liver, kidney and eye function may be advisable. Records of such incidents should be maintained for future reference.

5. FIRE FIGHTING MEASURES

Specific Hazards : Clear fire area of all non-emergency personnel. Will only burn if enveloped in a pre-existing fire. Hazardous combustion products may include: Carbon dioxide. Unidentified organic and inorganic compounds. Toxic products. Carbon monoxide.

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- Extinguishing Media** : Large fires should only be fought by properly trained fire fighters. Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable Extinguishing Media** : Do not use water in a jet.
- Protective Equipment for Firefighters** : Wear full protective clothing and self-contained breathing apparatus.
- Additional Advice** : All storage areas should be provided with adequate fire fighting facilities. Keep adjacent containers cool by spraying with water.

6. ACCIDENTAL RELEASE MEASURES

Observe all relevant local and international regulations.

- Protective measures** : Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. Avoid inhaling vapour and/or mists. Avoid contact with the skin. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Remove all possible sources of ignition in the surrounding area. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers. Use appropriate containment to avoid environmental contamination. Ventilate contaminated area thoroughly.
- Clean Up Methods** : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
- Additional Advice** : Proper disposal should be evaluated based on regulatory status of this material (refer to Section 13), potential contamination from subsequent use and spillage, and regulations governing disposal in the local area. Observe all relevant local regulations.

7. HANDLING AND STORAGE

- General Precautions** : Avoid breathing vapours or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. On guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For comprehensive advice on handling, product transfer, storage and tank cleaning refer to the product supplier.

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Handling	: In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. Use local exhaust extraction over processing area. Avoid unintentional contact with isocyanates to prevent uncontrolled polymerisation. Avoid contact with skin, eyes, and clothing. Air-dry contaminated clothing in a well-ventilated area before laundering. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Do not empty into drains. Handling Temperature: Ambient. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Storage	: Prevent all contact with water and with moist atmosphere. Tanks must be clean, dry and rust-free. Prevent ingress of water. Must be stored in a diked (bunded) well-ventilated area, away from sunlight, ignition sources and other sources of heat. Nitrogen blanket recommended for large tanks (capacity 100 m ³ or higher). Drums should be stacked to a maximum of 3 high. Maximum storage time: 12 months. Storage Temperature: Ambient. Storage should be handled at temperatures such that viscosities are less than 2000 cSt; typically at 25-50 °C. Tanks should be fitted with heating coils in areas where the ambient temperatures are below the recommended product handling temperatures. Heating coil skin temperatures should not exceed 100 °C.
Product Transfer	: Lines should be purged with nitrogen before and after product transfer. Keep containers closed when not in use.
Unsuitable Materials	: Copper. Copper alloys.
Additional Information	: Ensure that all local regulations regarding handling and storage facilities are followed. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

Occupational Exposure Limits None established.

Biological Exposure Index (BEI)

No biological limit allocated.

Exposure Controls	: Exhaust emission systems should be designed in accordance with local conditions; the air should always be moved away from the source of vapour generation and the person working at this point. Adequate ventilation to control airborne concentrations.
Personal Protective Equipment	: Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
Respiratory Protection	: No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.

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- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739, AS/NZS:2161) made from the following materials may provide suitable chemical protection: Incidental contact/Splash protection: PVC. Neoprene rubber. Nitrile rubber. 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. Thin disposable gloves should be avoided for long term use. When worn, use once and dispose. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
- Eye Protection** : Chemical splash goggles (chemical monogoggles). Approved to EU Standard EN166, AS/NZS:1337.
- Protective Clothing** : Chemical and cold resistant gloves/gauntlets, boots, and apron.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Examples of sources of recommended air monitoring methods are given below or contact supplier. Further national methods may be available. National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods, <http://www.cdc.gov/niosh/nmam/nmammenu.html>. Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/dts/sltc/methods/toc.html> Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances, <http://www.hsl.gov.uk/publications/mdhs.aspx>. Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung (IFA), <http://www.dguv.de/ifa/de/index.jsp> L'Institut National de Recherche et de Sécurité, (INRS), France http://www.inrs.fr/securite/hygiene_securite_travail.html.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Black, Grey Liquid.
- Odour : Odourless
- Odour threshold : Data not available.
- pH : Data not available.
- Boiling point : Data not available.
- Melting / freezing point : Data not available.
- Flash point : > 130 °C / 266 °F
- Explosion / Flammability limits in air : Data not available.
- Vapour pressure : < 10 hPa
- Specific gravity : 1.03
- Density : 1.031 g/cm³ at 25 °C / 77 °F
- Water solubility : Slightly soluble.
- Solubility in other solvents : Data not available.

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n-octanol/water partition coefficient (log Pow)	: Data not available.
Dynamic viscosity	: 1,700 mPa.s at 25 °C / 77 °F
Kinematic viscosity	: Data not available.
Vapour density (air=1)	: Data not available.
Evaporation rate (nBuAc=1)	: Data not available.
Decomposition temperature	: Data not available.

10. STABILITY AND REACTIVITY

Stability	: Stable. Hygroscopic. Polymerises exothermically with di-isocyanates at ambient temperatures. The reaction becomes progressively more vigorous and can be violent at higher temperatures if the miscibility of reaction partners is good or is supported by stirring or by the presence of solvents. Reacts with strong oxidising agents.
Conditions to Avoid	: Heat, flames, and sparks.
Materials to Avoid	: Avoid contact with isocyanates, copper and copper alloys, zinc, strong oxidizing agents, and water., Acid chlorides, Acid anhydrides, Reducing agents
Hazardous Decomposition Products	: Unknown toxic products may be formed.
Hazardous Reactions	: Data not available.
Sensitivity to Static Discharge	: Not applicable

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on product testing, and/or similar products, and/or components.
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Polyoxyalkylene Triol :

Acute Oral Toxicity	: Not expected to be a hazard. LD50 >2000 mg/kg
Acute Dermal Toxicity	: Not expected to be a hazard. LD50 >2000 mg/kg
Acute Inhalation Toxicity	: Not expected to be a hazard.
Skin Irritation	: Expected to be non-irritating to skin.
Eye Irritation	: Expected to be non-irritating to eyes.
Respiratory Irritation	: Not expected to be a respiratory irritant.
Sensitisation	: Not expected to be a skin sensitiser.

Repeated Dose Toxicity	: Not expected to be a hazard.
Mutagenicity	: Not expected to be mutagenic.
Carcinogenicity	: Not expected to be carcinogenic.

1,4- Butanediol :

Acute Oral Toxicity	: LD50 Oral - Rat - male and female - 1,500 mg/kg(Butane-1,4-diol)
Acute Dermal Toxicity	: LD50 Dermal - Rat - male and female - > 5,000 mg/kg(Butane-1,4-diol)
Acute Inhalation Toxicity	: LC50 Inhalation - Rat - male and female - 4 h - > 5.1 mg/l(Butane-1,4-diol) (OECD Test Guideline 403)
Skin Irritation	: Skin - Rabbit(Butane-1,4-diol) Result: No skin irritation - 24 h

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Eye Irritation	:	Eyes - Rabbit(Butane-1,4-diol) Result: No eye irritation.
Respiratory Irritation	:	Maximisation Test - Guinea pig(Butane-1,4-diol) Result: Does not cause skin sensitisation..
Repeated Dose Toxicity	:	Rat - male and female - Oral - No observed adverse effect level - 50 mg/kg -Lowest observed adverse effect level - 500 mg/kg(Butane-1,4-diol) RTECS: Not available
Mutagenicity	:	In vitro mammalian cell gene mutation test(Butane-1,4-diol) Chinese hamster ovary cells Result: negative
Carcinogenicity	:	Not expected to be carcinogenic.
Diethylmethyl benzene diamine:		
Acute Oral Toxicity	:	LD50 (Rat male and female):ca 738 mg/kg Method: OECD Test Guideline 401
Acute Dermal Toxicity	:	Remarks: Regulation (EC) 1272/2008, Annex VI
Acute Inhalation Toxicity	:	Remarks: study scientifically unjustified
Skin Irritation	:	Species : Rabbit Method : OECD Test Guideline 404 Result : No skin Irritation
Eye Irritation	:	Species : Rabbit Method : According to a Standard Method Result : No skin Irritation
Respiratory Irritation	:	Test Type : Maximisation Test Exposure Routes : Skin Contact Species : Guinea pig Result : Did not cause sensitisation on laboratory animals.
Repeated dose toxicity	:	No significant adverse effects were reported
Mutagenicity	:	Not classified due to data which are conclusive although insufficient for classification
Carcinogenicity	:	Not classified due to data which are conclusive although insufficient for classification.

12. ECOLOGICAL INFORMATION

Incomplete ecotoxicological data are available for this product. The information given below is based partly on a knowledge of the components and the ecotoxicology of similar products.

Polyoxyalkylene Triol

Acute Toxicity

Fish	:	Expected to have low toxicity: LC/EC/IC50 > 100 mg/l
Aquatic crustacea	:	Expected to have low toxicity: LC/EC/IC50 > 100 mg/l
Algae/aquatic plants	:	Expected to have low toxicity: LC/EC/IC50 > 100 mg/l
Microorganisms	:	Expected to have low toxicity: LC/EC/IC50 > 100 mg/l

Chronic Toxicity

Fish	:	Data not available.
Aquatic crustacea	:	Data not available.
Mobility	:	If product enters soil, one or more constituents will be highly mobile and may contaminate groundwater. Sinks in fresh water; may float or sink in seawater.

Persistence/degradability : Expected to be not readily biodegradable.

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Bioaccumulation	Oxidises rapidly by photo-chemical reactions in air. : Does not bioaccumulate significantly, MW > 1000.
1,4- Butanediol	
Toxicity	
Fish	: static test LC50 - Pimephales promelas (fathead minnow) - > 30,000 mg/l - 96h(Butane-1,4-diol)(OECD Test Guideline 203)
Aquatic crustacea	: static test EC50 - Daphnia magna (Water flea) - 813 mg/l - 48h (Butane-1,4-diol)(OECD Test Guideline 202)
Algae/aquatic plants	: static test EC50 - Desmodesmus subspicatus (Scenedesmus subspicatus) - >500 mg/l - 72 h(Butane-1,4-diol)
Microorganisms	: Expected to have low toxicity: LC/EC/IC50 > 100 mg/l
Mobility	: No data available(Butane-1,4-diol). Result: 90 - 100 % - Readily biodegradable
Bioaccumulation	: No data available
Diethylmethyl benzene diamine :	
Toxicity	
Fish	: LC50 (Pimephales promelas (fathead minnow)): > 106 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203
Aquatic crustacea	: EC50 (Daphnia magna (Water flea)): 0.5 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Analytical monitoring: no Method: OECD Test Guideline 202
Algae/aquatic plants	: EC50 (Desmodesmus subspicatus (green algae)): ca. 104 mg/l End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 EC10 (Desmodesmus subspicatus (green algae)): ca. 54 mg/l End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201
Microorganisms	: EC10 (Pseudomonas putida): 170 mg/l End point: Growth rate Exposure time: 24 h Test Type: static test Analytical monitoring: no Method: According to a standard method
Mobility	: Will be likely mobile in the environment.
Persistence/degradability	: Not biodegradable
Bioaccumulation	: No bioaccumulation is to be expected

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Other adverse effects : No data available

13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Waste product should not be allowed to contaminate soil or water.
- Container Disposal** : Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Send to drum recoverer or metal reclaimer.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

14. TRANSPORT INFORMATION

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S (diethylmethylbenzenediamine)

UN NUMBER:

UN No. (ADR/RID/ADN): 3082

UN No. (IMDG): 3082

UN No. (ICAO): 3082

TRANSPORT HAZARD CLASS(ES)

ADR/RID/ADN Class 9

ADR/RID/ADN Class 9: Miscellaneous dangerous substances and articles.

ADR Label No. 9

IMDG Class 9

ICAO Class/Division 9

TRANSPORT LABEL



PACKING GROUP

ADR/RID/ADN Packing group III

IMDG Packing group III

ICAO Packing group III

ENVIRONMENTAL HAZARDS

Environmentally Hazardous Substance/Marine Pollutant

SPECIAL PRECAUTIONS FOR USER

EMS F-A, S-F

Emergency Action Code 2Z

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Classification code M6

Hazard No. (ADR) 90

Tunnel Restriction Code (-)

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

UN proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(diethylmethybenzenediamine)

Chemical Inventory Status

AICS	:	Listed.	
DSL	:	Listed.	
INV (CN)	:	Listed.	
TSCA	:	Listed.	
KECI (KR)	:	Listed.	KE-24605
PICCS (PH)	:	Listed.	
EINECS	:		All components listed or polymer exempt.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H336	:	Harmful if swallowed.
H302	:	May cause drowsiness or dizziness.
H312	:	Harmful in contact with skin.
H319	:	Causes serious eye irritation.
H373	:	May cause damage to organs through prolonged or repeated exposure.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Irrit.	:	Eye irritation
STOT RE	:	Specific target organ toxicity - repeated exposure

Disclaimer : These data are offered in good faith as typical values and not as a product specification. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific content of the intended use and determine whether they are appropriate

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1. PRODUCT IDENTIFICATION

Product Name	SMARTCARE HYPERTRON HYBRID CGGREYCLEAR-HARDNER
Chemical Name/Synonyms	Poly urea coating
Product description	Waterproofing Coating Hardner
CAS No.:	Mixture
Company Details:	
Manufacturer /Supplier:	Chemische Global Private Limited
Address:	Gat No 134/2, village Mahalunge,Talegaon Chakan road,Tal. Khed, Pune 410501
Tel:	+ 91 – 2135 - 662530
Fax:	+ 91 – 2135 – 662535
E mail :	cgpl.pune@gmail.com

2.HAZRD IDENTIFICATION

Acute toxicity (Inhalation):	Category 4
Skin irritation:	Category 2
Eye irritation:	Category 2B
Respiratory sensitisation:	Category 1
Skin sensitisation:	Category 1
Specific target organ toxicity – single exposure:	Category 3 (Respiratory system)
Specific target organ toxicity – repeated exposure (Inhalation):	Category 1 (Respiratory tract)

GHS Classification

Hazard pictograms:



Signal word: Danger

Hazard statements:

- Causes skin and eye irritation.
- May cause an allergic skin reaction. Harmful if inhaled.
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- May cause respiratory irritation.
- Causes damage to organs (Respiratory tract) through prolonged or repeated exposure if inhaled.

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Precautionary statements:

Prevention:

Wear protective gloves.

Wash skin and face thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Do not breathe dust, mist, gas, vapors or spray.

In case of inadequate ventilation wear respiratory protection. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134) or regional standards. For additional details, see section 8 of the SDS.

Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area.

Response:

IF ON SKIN: Wash with plenty of soap and water.

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

Call a doctor or emergency medical facility (i.e. 911) if you feel unwell.

If skin irritation or rash occurs: Get medical attention. If

eye irritation persists: Get medical attention.

If experiencing respiratory symptoms: Call a doctor or emergency medical facility (i.e. 911).

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Take off contaminated clothing and wash before reuse.

Storage:

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

Disposal:

Dispose of contents and container in accordance with existing federal, state, and local environmental control laws.

3.PRODUCT COMPOSITION / INFORMATION ON INGREDIENTS**Hazardous Components**

Concentration	Components	CAS-No.
59%	Polyurethane Prepolymer	39420-98-9
23%	2,4'-Diphenylmethane Diisocyanate (MDI)	5873-54-1
17%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8
0.1%	MDI dimer	17589-24-1

Values in the table above represent approximate percentages

4. FIRST AID MEASURES**Most Important Symptom(s)/Effect(s)**

Acute: Diisocyanate vapors or mist at concentrations above the TLV or PEL 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). Persons with a preexisting,

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nonspecific bronchial hyper reactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the TLV or PEL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g., fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible

Causes skin irritation with symptoms of reddening, itching, and swelling. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove. Contact with MDI can cause discoloration.

Causes eye irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing.

May cause irritation of the digestive tract. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Delayed: Symptoms affecting the respiratory tract can also occur several hours after overexposure.

Eye Contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use lukewarm water if possible. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Get medical attention.

Skin Contact

If direct skin contact with isocyanates occurs, immediately remove contaminated clothing and shoes. Wipe off the isocyanate product from the skin using dry towels or other similar absorbent fabric. If readily available, apply a polyglycol-based cleanser (e.g. SKC, Inc. (SKC) D-TAM Skin Cleanser) or corn oil. Wash with soap and warm water and pat dry. If a polyglycol-based cleanser is not available, wash with soap and warm water for 15 minutes. If available, use a wipe test pad to verify decontamination is complete (e.g. SKC SWYPE). Get medical attention if irritation develops. Discard or wash contaminated clothing before reuse.

Inhalation

Move to an area free from further exposure. Extreme asthmatic reactions that may occur in sensitized persons can be life threatening. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours.

Ingestion

Do NOT induce vomiting. Wash mouth out with water. Do not give anything by mouth to an unconscious person. Get medical attention.

Notes to Physician

Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision. Skin: This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn. Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound. Inhalation: Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

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5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical, Carbon dioxide (CO₂), Foam, water spray for large fires.

Unsuitable Extinguishing Media: High volume water jet

Fire Fighting Procedure

Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous.

Hazardous Decomposition Products

By Fire and High Heat: Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke., Isocyanate, Isocyanic Acid, Other undetermined compounds

Unusual Fire/Explosion Hazards

Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO₂ formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

6. ACCIDENTAL RELEASE MEASURE**Spill and Leak Procedures**

Implement site emergency response plan. Evacuate non-emergency personnel. The magnitude of the evacuation depends upon the quantity released, site conditions, and the ambient temperature. Isolate the area and prevent access of unauthorized personnel. Notify management.

Wear necessary personal protective equipment (PPE) as specified in the SDS or the site emergency response plan. Ventilate and remove ignition sources. Control the source of the leak. Contain the released material by damming, diking, retaining, or diverting into an appropriate containment area. Absorb or pump off as much of the spilled material as possible. When using absorbent, completely cover the spill area with suitable absorbent material (e.g., vermiculite, kitty litter, Oil-Dri, etc. Allow for the absorbent material to absorb the spilled liquid. Shovel the absorbent material into an approved metal container (i.e., 55-gallon salvage drum). Do not fill the container more than 2/3 full to allow for expansion, and do not tighten the lid on the container. Repeat application of absorbent material until all liquid has been removed from the surface. For spills involving a solid product, remove mechanically (sweep up, vacuum, shovel etc.) and collect and place into an approved metal container.

Decontaminate the spill surface area using a neutralization solution (see list of solutions on the SDS); scrubbing the surface with a broom or brush helps the decontamination solution to penetrate into porous surfaces. Wait at least 15 minutes after first application of the neutralization solution. Cover the area with absorbent material and shovel this into an approved metal container. Residual surface contamination can be checked using a wipe test pad to verify decontamination is complete (e.g. SKC Surface Swipe). If the wipe test pad demonstrates that isocyanate remains on the surface (red color on pad), repeat applications of neutralization solution, with scrubbing, followed by absorbent until the surface is decontaminated (no color change on wipe pad). Apply lid loosely to metal waste container (do not tighten the lid because carbon dioxide gas and heat can be generated from the neutralization process). With the lid still loosely in place, move the container to an isolated, well-ventilated area to allow release of carbon dioxide. After 72 hours, seal the container, and properly dispose of the waste material and any contaminated equipment (i.e., broom or brush) in accordance with existing federal, state and local regulations

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Additional Spill Procedures/Neutralization

Products or product mixtures that have been shown to be effective neutralization solutions for decontaminating surfaces, tools, or equipment that have been in contact with an isocyanate include, but are not limited to:

- SKC, Inc. (SKC): 1-800-752-8472
 - o Isocyanate Decontamination Solution
- Spartan Chemical Company: 1-800-537-8990
 - o Spartan® ShineLine Emulsifier Plus (stripping solution)
 - o Spartan® SC-200 Heavy Duty Cleaner
- ZEP Commercial Heavy Duty Floor Stripper
- A mixture of 90% water, 10% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10)
- A mixture of 75% water, 20% non-ionic surfactant, and 5% n-propanol
- A mixture of 80% water, 10% non-ionic surfactant, 5% isopropanol, 5% ammonium hydroxide (household ammonia)

Note: Always wear proper PPE when cleaning up an isocyanate spill or when decontaminating surfaces, tools, or equipment using a neutralization solution. It may take two or more applications of the neutralization solution to decontaminate the surface. Residual surface contamination can be checked using a surface wipe method such as the skype pad

7. HANDLING AND STORAGE**Handling/Storage Precautions**

Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Note: The use of aprotic polar solvents (e.g., dimethyl sulfoxide (DMSO), n-methyl-pyrrolidone (NMP), dimethyl acetamide (DMAC)) in combination with polymeric MDI / MDI may result in the formation of low concentrations of primary aromatic amines such as 4,4'-methylenedianiline (MDA).

Storage Period:

12 Months: after Manufacturing date.

Storage Temperature

Minimum: 18 °C (64.4 °F)
Maximum: 30 °C (86 °F)

Storage Conditions

Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Substances to Avoid

Water, Amines, Strong bases, Alcohols, Copper alloys

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8. EXPOSURE CONTROL & PERSONAL PROTECTION

The recommendations in this section should not be a substitute for a personal protective equipment (PPE) assessment performed by the employer as required by 29 CFR 1910 Subpart I

Exposure Limits

4,4'-Diphenylmethane Diisocyanate (MDI) (101-68-8)

US. ACGIH Threshold Limit Values, as amended Time weighted average 0.005 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended Ceiling Limit Value 0.02 ppm, 0.2 mg/m³

Any component which is listed in section 3 and is not listed in this section does not have a known ACGIH TLV, OSHA PEL or supplier recommended occupational exposure limit.

Industrial Hygiene/Ventilation Measures

Local exhaust should be used to maintain levels below the TLV whenever MDI is heated, sprayed, or aerosolized. Standard reference sources regarding industrial ventilation (e.g., ACGIH Industrial Ventilation Manual) should be consulted for guidance about adequate ventilation. To ensure that published exposure limits have not been exceeded, monitoring for airborne diisocyanate should become part of the overall employee exposure characterization program. NIOSH, OSHA, and others have developed sampling and analytical methods.

Respiratory Protection

Airborne MDI concentrations greater than the ACGIH TLV-TWA (TLV) or OSHA PEL-C (PEL) can occur in inadequately ventilated environments when MDI is sprayed, aerosolized, or heated. In

such cases, respiratory protection must be worn. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). The type of respiratory protection available includes (1) an atmosphere-supplying respirator such as a self-contained breathing apparatus (SCBA) or a supplied air respirator (SAR) in the positive pressure or continuous flow mode, or (2) an air-purifying respirator (APR). If an APR is selected then a change out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. The basis for the change out schedule must be described in the written respirator program. Further, if an APR is selected, the airborne diisocyanate concentration must be no greater than 10 times the TLV or PEL. The recommended APR cartridge is an organic vapor/particulate filter combination cartridge (OV/P100).

Hand Protection

Ensure gloves remain in good condition during use and replace if any deterioration is observed.

Gloves should be worn., Nitrile rubber showed excellent resistance., Butyl rubber, neoprene and PVC are also effective.

Eye Protection

When directly handling liquid product, eye protection is required. Examples of eye protection include a chemical safety goggle, or chemical safety goggle in combination with a full face shield when there is a greater risk of splash

Skin Protection

Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact., Animal tests and other research indicate that skin contact with MDI can play a role in causing isocyanate sensitization and respiratory reaction., This data reinforces the need to prevent direct skin contact with isocyanates.

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Medical Surveillance

All applicants who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation. A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas. Applicants who have a history of adult asthma should be restricted from work with isocyanates. Applicants with a history of prior isocyanate sensitization should be excluded from further work with isocyanates. A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates. Once a worker has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted.

Additional Protective Measures

Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions

9. PHYSICAL AND CHEMICAL PROPERTIES

State of Matter:	liquid
Color:	Brown
Odor:	slight inherent odour
Odor Threshold:	No Data Available
pH:	not applicable
Boiling Point:	> 300 °C (> 572 °F) @ 1,013 hPa (DIN 53171)
Flash Point:	ca. 223 °C (433.4 °F) @ 1,013 hPa (DIN EN ISO 2719)
Evaporation Rate:	No Data Available
Lower explosion limit:	No Data Available
Upper Explosion Limit:	No Data Available
Vapor Pressure:	No Data Available
Vapor Density:	No Data Available
Density:	ca.1.12 g/cm ³ @ 20°C (68 °F) (DIN 51757)
Relative Vapor Density:	No Data Available
Specific Gravity:	No Data Available
Solubility in Water:	No Data Available
Partition Coefficient: n-octanol/water:	No Data Available
Autolgnition Temperature:	ca. 480 °C (896 °F) (DIN 51794)
Decomposition Temperature:	Polymerises at about 200 °C with evolution of CO ₂ .
Unblocking Temperature:	No Data Available
Dynamic Viscosity:	ca. 800 mPa.s @ 23 °C (73.4 °F) (DIN EN ISO 3219/A.3)
Kinematic Viscosity:	No Data Available
Bulk Density:	No Data Available
Molecular Weight:	No Data Available
Pour point:	ca. -27 °C (-16.6 °F) (ISO 3016)
Self Ignition:	not applicable

10. STABILITY & REACTIVITY DATA**Hazardous Reactions**

Contact with moisture, other materials that react with isocyanates, or temperatures above 350 F (177 C), may cause polymerization, Moisture (water and high humidity) or high heat (temperatures greater than

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350 F (177C)) can cause pressure build-up with possible explosive rupture.

Materials to Avoid

Water, Amines, Strong bases, Alcohols, Copper alloys

Hazardous Decomposition Products

By Fire and High Heat: Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke., Isocyanate, Isocyanic Acid, Other undetermined compounds

11. TOXICOLOGICAL INFORMATION**Likely Routes of Exposure:**

Skin Contact
Inhalation Eye
Contact

Health Effects and Symptoms

Acute: Diisocyanate vapors or mist at concentrations above the TLV or PEL 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). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the TLV or PEL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g., fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

Causes skin irritation with symptoms of reddening, itching, and swelling. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove. Contact with MDI can cause discoloration.

Causes eye irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing.

May cause irritation of the digestive tract. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Chronic: As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to isocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to isocyanates at levels well below the TLV or PEL. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can be permanent. Chronic overexposure to isocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.,

Prolonged contact with skin can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests and other research indicate that skin contact with MDI can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates

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Prolonged vapor contact with the eyes may cause conjunctivitis.

Delayed: Symptoms affecting the respiratory tract can also occur several hours after overexposure.

Toxicity Data :

Toxicity data based on polymeric MDI (a mixture of monomers and higher molecular weight oligomers).

Acute Oral Toxicity

LD50: > 2,000 mg/kg (rat, male/female)

Acute Inhalation Toxicity

LC50: 0.49 mg/l, 490 mg/m³, 4 h, aerosol (rat)

The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on expert judgment and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

Acute Dermal Toxicity

LD50: > 9,400 mg/kg (rabbit, male/female) (OECD Test Guideline 402)

Skin Irritation

rabbit, Slightly irritating

Repeated Dose Toxicity

90 Days, inhalation: NOAEL: 1 mg/m³, (rat, Male/Female, 6 hrs/day 5 days/week)
Irritation to lungs and nasal cavity.

2 years, inhalation: NOAEL: 0.2, (rat, Male/Female, 6 hrs/day 5 days/week)
Irritation to lungs and nasal cavity.

Mutagenicity

Genetic Toxicity in Vitro:

Bacterial - gene mutation assay: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Carcinogenicity

rat, Male/Female, inhalation, 2 Years, 6 hrs/day 5 days/week

LOAEL: 6mg/l

Polymeric MDI has been classified as IARC Group 3 (Not classified to its carcinogenicity to humans) (1999) indicating there is inadequate evidence available to describe the carcinogenic potential.

Epidemiological studies found no association between isocyanates and cancer. In chronic exposure studies in rodents, pMDI produced tumors only at the highest exposure level of 6 mg/m³. This exposure level is significantly above the TLV for MDI (0.051 mg/m³). Based on the weight of the evidence, a determination of not classified for carcinogenicity is justified.

Developmental Toxicity/Teratogenicity

rat, female, inhalation, gestation days 6-15, 6 hrs/day, NOAEL (teratogenicity): 12 mg/m³, NOAEL (maternal): 4 mg/m³

No Teratogenic effects observed at doses tested., Fe to toxicity seen only with maternal toxicity.

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Toxicity Data for: 4,4'-Diphenylmethane Diisocyanate (MDI)

Acute Oral Toxicity

LD50: > 7,616 mg/kg (rat) (OECD Test Guideline 401)

Acute Inhalation Toxicity

LC50: 0.368 mg/l, 4 h, dust/mist (rat, male) (OECD Test Guideline 403)

The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the test result cannot be directly applied for the purpose of assessing hazard. Based on expert judgment and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

Acute Dermal Toxicity

LD50: > 9,400 mg/kg (rabbit, male/female) (OECD Test Guideline 402)

Studies of a comparable product.

Skin Irritation

rabbit, Draize Test, Slightly irritating

Human, irritating

Eye Irritation

rabbit, Draize, Moderately irritating

Human, irritating

Sensitization

Skin sensitization (local lymph node assay (LLNA)):: positive (Mouse, OECD Test Guideline 429)

Respiratory sensitization: positive (Guinea pig)

Repeated Dose Toxicity

90 Days, inhalation: NOAEL: 0.3 mg/m³, (rat, Male/Female, 18 hrs/day, 5 days/week)

Irritation to lungs and nasal cavity.

(Human)

Irritation to lungs and nasal cavity.

Mutagenicity

Genetic Toxicity in Vitro:

Ames: (Salmonella typhimurium, Metabolic Activation: with/without)

Positive and negative results were reported. The use of certain solvents which rapidly hydrolyze diisocyanates is suspected of producing the positive mutagenicity results.

Genetic Toxicity in Vivo:

Micronucleus Assay: (Mouse) negative

Micronucleus test: negative (rat, male, Inhalative (exposure period: 3x1h/day over 3 weeks))

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negative

Carcinogenicity

rat, Female, inhalation, 2 Years, 17 hrs/day, 5 days/week negative

Other Relevant Toxicity Information

May cause irritation of respiratory tract

Carcinogenicity:

No carcinogenic substances as defined by IARC, NTP and/or OSHA

12. ECOLOGICAL INFORMATION

Ecological Data :

Ecotoxicity data based on polymeric MDI (a mixture of monomers and higher molecular weight oligomers).Data is based on the product.

Biodegradation

0 %, Exposure time: 28 d, i.e. not degradable

Bioaccumulation

Oncorhynchus mykiss (rainbow trout), Exposure time: 112 d, < 1 BCF
Does not bioaccumulate.

Acute and Prolonged Toxicity to Fish

LC0: > 1,000 mg/l (Danio rerio (zebra fish), 96 h)

LC0: > 3,000 mg/l (Oryzias latipes (Orange-red killifish), 96 h)

Acute Toxicity to Aquatic Invertebrates

EC50: 16 mg/l (Daphnia magna (Water flea), 48 h) Studies at the product.

Toxicity to Aquatic Plants

NOEC: 1,640 mg/l, End Point: growth (Green algae (Scenedesmus subspicatus), 72 h)

Toxicity to Microorganisms

EC50: > 100 mg/l, (activated sludge, 3 h)

Ecological Data for 4,4'-Diphenylmethane Diisocyanate (MDI) Acute and Prolonged Toxicity to Fish

LC50: > 500 mg/l (Zebra fish (Brachydanio rerio), 24 h)

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Acute Toxicity to Aquatic Invertebrates

EC50: > 500 mg/l (Water flea (Daphnia magna), 24 h)

Waste Disposal Method

Waste disposal should be in accordance with existing federal, state and local environmental control laws. The preferred method for disposal of unused product is incineration. Contact and follow the guidance of a licensed disposal facility to properly dispose of unused product or chemical waste.

Empty Container Precautions

Containers that are empty as defined by RCRA (40 CFR part 261.7), may retain product residue; observe all precautions for product. Do not grind, torch cut, weld or heat an empty container that once held an isocyanate-containing product; highly toxic vapors or gases are formed.

Drums

One method for disposing of empty drums is to contract with an approved drum re-conditioner. A state by state listing of drum re-conditioners can be obtained from the Reusable Industrial Packaging Association (RIPA) at www.reusablepackaging.org.

If not sent to a re-conditioner, it is important that the company contacted to dispose of the drums be notified of the hazards associated with the isocyanate-containing product. Metal recycling firms may require that the drum be thoroughly decontaminated with a neutralizing agent prior to disposal. If not recycled, empty drums should be crushed by mechanical means, such that reuse is impossible. Consult federal, state and local regulations, as well as a licensed waste disposal facility to determine proper disposition of crushed drums.

13. DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH

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14. TRANSPORT REGULATIONS**Land transport (DOT)**

Proper Shipping Name: Other regulated substances, liquid, n.o.s. (contains 4,4'-Diphenylmethane Diisocyanate (MDI))
Hazard Class or Division: 9
UN/NA Number: NA 3082
Packaging Group: III
Hazard Label(s): CLASS 9

RSPA/DOT Regulated Components:

4,4'-Diphenylmethane Diisocyanate (MDI)
Reportable Quantity: 13186 kg (29070 lb)

Sea transport (IMDG): Non-Regulated

Air transport (ICAO/IATA): Non-Regulated

Additional Transportation Information

When in individual containers of less than the Product RQ, this material ships as non-regulated.

15. REGULATORY INFORMATION**United States Federal Regulations**

US. Toxic Substances Control Act: Listed on the Active Portion of the TSCA Inventory.

No substances are subject to TSCA 12(b) export notification requirements.

US. EPA CERCLA Hazardous Substances (40 CFR 302) Components:

4,4'-Diphenylmethane Diisocyanate (MDI) Reportable quantity: 5000 lbs

ARA Section 311/312 Hazard Categories:

Refer to hazard classification information in Section 2.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) Components:

None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required Components:

4,4'-Diphenylmethane Diisocyanate (MDI)

US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):

Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

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State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the SDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

This product contains a trace (ppm) amount of phenyl isocyanate (CAS# 103-71-9) and monochlorobenzene (CAS# 108-90-7) as impurities.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

<u>Concentration</u>	<u>Components</u>	<u>CAS-No.</u>
30 - 60%	Polyurethane Prepolymer	39420-98-9
15 - 40%	2,4'-Diphenylmethane Diisocyanate (MDI)	5873-54-1
10 - 30%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8

New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:

<u>Concentration</u>	<u>Components</u>	<u>CAS-No.</u>
10 - 30%	4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8

Massachusetts Right to Know Extraordinarily Hazardous Substance List:

<u>Concentration</u>	<u>Components</u>	<u>CAS-No.</u>
<100 ppm	p-Dichlorobenzene	106-46-7

California Proposition 65 List:

<u>Concentration</u>	<u>Components</u>	<u>CAS-No</u>
<100 ppm	Toluene	108-88-3
<100 ppm	p-Dichlorobenzene	106-46-7

CFATS (Chemical Facility Anti-Terrorism Standards) Chemicals

To the best of our knowledge, this product does not contain Appendix A Chemicals of Interest (COI), at or above the Screening Threshold Quantity (STQ), as defined by the Department of Homeland Security Chemical Facility Anti-terrorism Standard (CFATS, 6 CFR Part 27).

Based on information provided by our suppliers, this product is considered by "DRC Conflict Free" as defined the SEC Conflict Minerals Final Rule (Release No. 34-67716; File No. S7-40-10; Date: 2012-08-22).

16. OTHER INFORMATION

These data are offered in good faith as typical values and not as a product specification. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific content of the intended use and determine whether they are appropriate

END of MSDS