



MAXGUARD U-192A

SAFETY DATA SHEET - B-SIDE

Compliant SDS for GHS: HazCom 2012 / United States; WHMIS 2015 / Canada.

SECTION 1: IDENTIFICATION

Supplier/Manufacturer: Huntsman Building Solutions 870 Curé-Boivin Boisbriand, QC, Canada. J7G 2A7 450-437-0123 866-437-0223 Fax: 450-437-2338 www.huntsmanbuildingsolutions.com	GHS Product Identifier: MAXGUARD U-192A Chemical Name: Prepolymer based on Methylenediphenyl diisocyanate. Product type: Liquid. Identified Use: Component A of a Polyurea Spray System.
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Emergency Telephone (24/7): In Canada: CANUTEC 613-996-6666 or *666 (cellular). In USA: CHEMTREC: 800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

OSHA / HCS Status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the Substance or Mixture	ACUTE TOXICITY (inhalation) - Category 4 ACUTE TOXICITY (dermal) - Category 5 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

GHS LABEL ELEMENTS INCLUDING PRECAUTIONARY STATEMENTS

Hazard Pictograms	
Signal Word	Danger
Hazard Statements	H332 - Harmful if inhaled. H302 - Harmful if swallowed. H319 - Causes serious eye irritation. H315 - Causes skin irritation. H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317 - May cause an allergic skin reaction. H351 - Suspected of causing cancer. H335 - May cause respiratory irritation. H373 - May cause damage to organs through prolonged or repeated exposure.

PRECAUTIONARY STATEMENTS

Prevention	P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing. P284 - Wear respiratory protection. P271 - Use only outdoors or in a well-ventilated area. P260 - Do not breathe vapor. P264 - Wash hands thoroughly after handling. P272 (OSHA) - Contaminated work clothing must not be allowed out of the workplace.
Response	P314 - Get medical attention if you feel unwell. P308 + P313 - IF exposed or concerned: Get medical attention. P304 + P341 (OSHA) + P312 - IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or physician. P302 + P352 + P363 - IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. P333 + P313 - If skin irritation or rash occurs: Get medical attention. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
Storage	P405 - Store locked up.
Disposal	P401 - Dispose of contents and container in accordance with all local, regional, national

	and international regulations.
HAZARDS NOT OTHERWISE CLASSIFIED (HNOC)	
Physical Hazards Not Otherwise Classified (PHNOC)	None known.
Health Hazards Not Otherwise Classified (HHNOC)	None known.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture	Mixture.
Chemical Name	Prepolymer based on Methylenediphenyl diisocyanate.
CAS NUMBER/OTHER IDENTIFIERS	
CAS Number	Not applicable.
Product Code	Not available.

INGREDIENTS	CAS #	%
Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,1'-methylenebis[isocyanatobenzene]	112898-48-3	≥25 - <50
4,4'-Methylenediphenyl diisocyanate	101-68-8	≥15 - <30
o-(p-Isocyanatobenzyl)phenyl isocyanate	5873-54-1	≥15 - <30
2-Propanol, 1-chloro-, phosphate (3:1)	13674-84-5	≥10 - <30
Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer]	25686-28-6	≥1 - <5
2,2'-Methylenediphenyl diisocyanate	2536-05-2	≥0.1 - <1

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 concentrations 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	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.
Skin Contact	Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.
MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED	
POTENTIAL ACUTE HEALTH EFFECTS	
Eye Contact	Causes serious eye irritation.
Inhalation	Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin Contact	Causes skin irritation. May cause an allergic skin reaction.
Ingestion	No known significant effects or critical hazards.
OVER-EXPOSURE SIGNS/SYMPTOMS	
Eye Contact	Adverse symptoms may include the following: pain or irritation, watering, redness.
Inhalation	Adverse symptoms may include the following: respiratory tract irritation, coughing, wheezing and breathing difficulties, asthma.
Skin Contact	Adverse symptoms may include the following: irritation, redness.
Ingestion	No known significant effects or critical hazards.
INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY	
Notes to Physician	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific Treatments	No specific treatment.
Protection of First-aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

SECTION 5: FIRE FIGHTING MEASURES

Suitable Extinguishing Media	Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable Extinguishing Media	None known.
Specific Hazards Arising from the Chemical	No specific fire or explosion hazard.
Hazardous Thermal Decomposition Products	Combustion products may include carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbons and HCN.
Special Protective Actions for Fire Fighters	No special measures are required.
Special Protective Equipment for Fire Fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. PVC boots, gloves, safety helmet and protective clothing should be worn.
Remark	Due to reaction with water producing CO ₂ -gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed. Containers may burst if overheated.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

For Non-emergency Personnel	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe 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 dispersal 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	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
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SECTION 7: HANDLING & STORAGE

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

PRECAUTIONS FOR SAFE HANDLING	
Protective Measures	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. 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 this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.
Conditions for Safe Storage Including any Incompatibilities	Store in accordance with local regulations. 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. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Storage Temperature	15 - 30°C (59 - 86°F)
Storage Life	6 Months.

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

CONTROL PARAMETERS - UNITED STATES

OCCUPATIONAL EXPOSURE LIMITS

INGREDIENT NAME	Exposure Limits
4,4'-Methylenediphenyl diisocyanate	ACGIH TLV (United States, 3/2015). TWA: 0.005 ppm 8 hours. NIOSH REL (United States, 10/2013). CEIL: 0.2 mg/m ³ 10 minutes. CEIL: 0.02 ppm 10 minutes. TWA: 0.05 mg/m ³ 10 hours. TWA: 0.005 ppm 10 hours. OSHA PEL (United States, 2/2013). CEIL: 0.2 mg/m ³ CEIL: 0.02 ppm
o-(p-Isocyanatobenzyl)phenyl isocyanate	OSHA PEL (United States). TWA: 0.005 ppm 8 hours. CEIL: 0.02 ppm

CONTROL PARAMETERS - CANADA

OCCUPATIONAL EXPOSURE LIMITS		TWA (8 HOURS)			STEL (15 MINS)			CEILING			Notations
INGREDIENTS NAME	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other	
4,4'-Methylenediphenyl diisocyanate	US ACGIH 3/2015	0.005	-	-	-	-	-	-	-	-	
	AB 4/2009	0.005	0.05	-	-	-	-	-	-	-	
	BC 2/2015	0.005	-	-	-	-	-	0.01	-	-	(1) (3)
	ON 7/2015	0.005	-	-	-	-	-	-	-	-	
	QC 1/2014	0.005	0.051	-	-	-	-	-	-	-	(3)
o-(p-Isocyanatoben - zyl)phenyl isocyanate	BC 2/2015	0.005	-	-	-	-	-	0.01	-	-	
2,2'-Methylenediphenyl diisocyanate	BC 7/2013	0.005	-	-	-	-	-	0.01	-	-	-
Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer]	AB 4/2009	0.005	-	-	-	-	-	-	-	-	-
	BC 2/2015	0.005	-	-	-	-	-	0.01	-	-	-
	ON7/2015	0.005	-	-	-	-	-	0.02	-	-	-

(1) Absorbed through skin (3) Skin sensitization

Appropriate Engineering Controls	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or
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	statutory limits.
Environmental Exposure Controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.
INDIVIDUAL PROTECTION MEASURES	
Hygiene Measures	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. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/Face Protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
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 & CHEMICAL PROPERTIES

Physical State	Liquid.
Color	Clear yellow.
Odor	Not available.
Odor Threshold	Not available.
pH	Not available.
Melting Point	Not available.
Boiling Point	Not available.
Flash Point	Closed cup: >149°C (>300°F) [Pensky-Martens].
Evaporation Rate	Not available.
Flammability (Solid, Gas)	Not available.
Lower and Upper Explosive (Flammable) Limits	Not available.
Vapor Pressure (mm Hg) @ 25°C (77°F)	Not available.
Vapor Density	Not available.
Specific Gravity @ 25°C (77°F)	1.12 – 1.16
Solubility	Insoluble. Reacts with water to release carbon dioxide.
Partition Coefficient: N-Octanol/Water	Not available.
Auto-Ignition Temperature	Not available.
Decomposition Temperature	Not available.
Viscosity @ 25°C (77°F) (cps)	400 - 700
Volatility	Not available.

SECTION 10: STABILITY & REACTIVITY

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical Stability	Stable at room temperature. This product will react and release heat with any materials containing active hydrogen. The reaction is accelerated and can be violent at higher temperatures if the

	miscibility of the reaction partners is good or is supported by stirring or by the presence of solvents. MDI is insoluble with and heavier than water and sinks to the bottom, but reacts slowly at the interface. A solid water-insoluble layer of polyurea is formed at the interface by liberating CO ₂ .
Possibility of Hazardous Reactions	Polymerization may occur at elevated temperatures in the presence of alkalies, tertiary amines and metal compounds.
Conditions to Avoid	Avoid high temperatures.
Incompatible Materials	Water, alcohols, amines, bases, and acids.
Hazardous Decomposition Products	Isocyanate vapors and other irritating, highly toxic gases such as carbon dioxide, carbon monoxide, nitrogen oxides, hydrocarbons and HCN.

SECTION 11: TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY

PRODUCT / INGREDIENT NAME	Endpoint	Species	Result	Exposure
4,4'-Methylenediphenyl diisocyanate	LD50 Oral	Rat	9200 mg/kg	-
Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer]	LC50 Inhalation Vapor	Rat	490 mg/m ³	4 heures
	LD50 Dermal	Rabbit	>9400 mg/kg	-
	LD50 Oral	Rat	49 g/kg	-
2-Propanol, 1-chloro-, phosphate (3:1)	LC50 Inhalation Dusts and mists	Rat	17.8 mg/l	1 hour
	LC50 Inhalation Dusts and mists	Rat	5 mg/l	4 hours
	LD50 Dermal	Rabbit	1230 mg/kg	-
	LD50 Oral	Rat	1500 mg/kg	-

IRRITATION / CORROSION

PRODUCT / INGREDIENT NAME	Result	Species	Score	Exposure	Observation
Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer]	Eyes - Mild irritant	Rabbit	-	100 mg	-
4,4'-Methylenediphenyl diisocyanate	Eyes - Moderate irritant	Rabbit	-	100 mg	-

SENSITIZATION

There is no data available.

MUTAGENICITY

There is no data available.

CARCINOGENICITY - CLASSIFICATION

PRODUCT / INGREDIENT NAME	OSHA	IARC	NTP	ACGIH	EPA	NIOSH
Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer]	-	3	-	-	-	-
4,4'-Methylenediphenyl diisocyanate	-	3	-	-	-	-

REPRODUCTIVE TOXICITY

There is no data available.

TERATOGENICITY

There is no data available.

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)

PRODUCT / INGREDIENT NAME	Category	Route of Exposure	Target Organs
Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,1'-methylenebis[isocyanatobenzene]	Category 3	Not applicable.	Respiratory tract irritation.
4,4'-Methylenediphenyl diisocyanate	Category 3	Not applicable.	Respiratory tract irritation.
o-(p-Isocyanatobenzyl)phenyl isocyanate	Category 3	Not applicable.	Respiratory tract irritation.
Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer]	Category 3	Not applicable.	Respiratory tract

			irritation.
2,2'-Methylenediphenyl diisocyanate	Category 3	Not applicable.	Respiratory tract irritation.
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE)			
PRODUCT / INGREDIENT NAME	Category	Route of Exposure	Target Organs
Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,1'-methylenebis [isocyanatobenzene]	Category 2	Inhalation	Not determined.
2,2'-Methylenediphenyl diisocyanate	Category 2	Not determined.	Not determined.
4,4'-Methylenediphenyl diisocyanate	Category 2	Not determined.	Not determined.
o-(p-Isocyanatobenzyl)phenyl isocyanate	Category 2	Not determined.	Not determined.
Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer]	Category 2	Not determined.	Respiratory system.
ASPIRATION HAZARD			
There is no data available.			
INFORMATION ON THE LIKELY ROUTES OF EXPOSURE			
Dermal contact. Eye contact. Inhalation. Ingestion.			
POTENTIAL ACUTE HEALTH EFFECTS			
Eye Contact	Causes serious eye irritation.		
Inhalation	Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.		
Skin Contact	Causes skin irritation. May cause an allergic skin reaction.		
Ingestion	No known significant effects or critical hazards.		
SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS			
Eye Contact	Adverse symptoms may include the following: pain or irritation, watering, redness.		
Inhalation	Adverse symptoms may include the following: respiratory tract irritation, coughing, wheezing and breathing difficulties, asthma.		
Skin Contact	Adverse symptoms may include the following: irritation, redness.		
Ingestion	No known significant effects or critical hazards.		
DELAYED AND IMMEDIATE EFFECTS AND ALSO CHRONIC EFFECTS FROM SHORT AND LONG TERM EXPOSURE			
SHORT TERM EXPOSURE			
Potential Immediate Effects	No known significant effects or critical hazards.		
Potential Delayed Effects	No known significant effects or critical hazards.		
LONG TERM EXPOSURE			
Potential Immediate Effects	No known significant effects or critical hazards.		
Potential Delayed Effects	No known significant effects or critical hazards.		
POTENTIAL CHRONIC HEALTH EFFECTS			
General	May cause damage to organs through prolonged or repeated exposure if inhaled. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.		
Carcinogenicity	Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.		
Mutagenicity	No known significant effects or critical hazards.		
Teratogenicity	No known significant effects or critical hazards.		
Developmental Effects	No known significant effects or critical hazards.		
Fertility Effects	No known significant effects or critical hazards.		
NUMERICAL MEASURES OF TOXICITY - ACUTE TOXICITY ESTIMATES			
Not available.			

SECTION 12: ECOLOGICAL INFORMATION

TOXICITY			
PRODUCT / INGREDIENT NAME	Result	Species	Exposure
4,4'-Methylenediphenyl diisocyanate	Acute IC50 1.5 mg/l	Algae	72 hours
PERSISTENCE AND DEGRADABILITY			
There is no data available.			
BIOACCUMULATIVE POTENTIAL			
PRODUCT / INGREDIENT NAME	LogP _{ow}	BCF	Potential
4,4'-Methylenediphenyl diisocyanate	4.51	200	low
o-(p-Isocyanatobenzyl)phenyl isocyanate	4.51	200	low
tris(2-Chloro-1-methylethyl) phosphate	2.68	0.8 to 2.8	low
2,2'-Methylenediphenyl diisocyanate	5.22	200	low
MOBILITY IN SOIL			
Soil/Water Partition Coefficient (K _{oc})	There is no data available.		
Other Adverse Effects	No known significant effects or critical hazards.		

SECTION 13: DISPOSAL CONSIDERATION

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-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. 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, waterways, drains and sewers.
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SECTION 14: TRANSPORTATION INFORMATION

DOT	
UN Number	UN3082
UN Proper Shipping Name	OTHER REGULATED SUBSTANCES, LIQUID, N.O.S. (Methylene Diphenyl Diisocyanate)
Transport Hazard Class(es)	9 
Packing Group	III
Additional Information	Reportable quantity 5000 lbs (2270 kg). Single containers less than 5,000 lbs are not regulated.
TDG	
Not regulated.	
IMDG	
Not regulated.	
IATA	
Not regulated.	

Special Precautions for User	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in
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	the event of an accident or spillage.
Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code	Not available.

SECTION 15: REGULATORY INFORMATION

UNITED STATES

U.S. Federal Regulations	TSCA 8(a) PAIR: 4,4'-Methylenediphenyl diisocyanate; o-(p-Isocyanatobenzyl)phenyl isocyanate. TSCA 8(c) calls for record of SAR: 4,4'-Methylenediphenyl diisocyanate; o-(p-Isocyanatobenzyl)phenyl isocyanate; 2,2'-Methylenediphenyl diisocyanate. United States inventory (TSCA 8b): All components are listed or exempted. Clean Water Act (CWA) 307: 4,4'-Methylenediphenyl diisocyanate.
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	Listed.
Clean Air Act Section 602 Class I Substances	Not listed.
Clean Air Act Section 602 Class II Substances	Not listed.
DEA List I Chemicals (Precursor Chemicals)	Not listed.
DEA List II Chemicals (Essential Chemicals)	Not listed.

SARA 302/304

No products were found.

SARA 304 RQ	Not applicable.
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SARA 311/312

CLASSIFICATION

Immediate (acute) health hazard. Delayed (chronic) health hazard.

COMPOSITION/INFORMATION ON INGREDIENTS

PRODUCT / INGREDIENT NAME	%	Fire Hazard	Sudden Release of Pressure	Reactive	Immediate(Acute) Health Hazard	Delayed (Chronic) Health Hazard
Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,1'-methylenebis[isocyanatobenzene]	≥25 - <50	No.	No.	No.	Yes.	Yes.
4,4'-Methylenediphenyl diisocyanate	≥15 - <30	No.	No.	No.	Yes.	Yes.
o-(p-Isocyanatobenzyl)phenyl isocyanate	≥15 - <30	No.	No.	No.	Yes.	Yes.
2-Propanol, 1-chloro-, phosphate (3:1)	≥10 - <30	No.	No.	No.	Yes.	Yes.
Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer]	≥1 - <5	No.	No.	No.	Yes.	Yes.
2,2'-Methylenediphenyl diisocyanate	≥0.1 - <1	No.	No.	No.	Yes.	No.

SARA 313

	PRODUCT / INGREDIENT NAME	CAS #	%
Form R - Reporting requirements	4,4'-Methylenediphenyl diisocyanate	101-68-8	≥15 - <30
	Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer]	9016-87-9	≥1 - <5
Supplier notification	4,4'-Methylenediphenyl diisocyanate	101-68-8	≥15 - <30
	Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer]	9016-87-9	≥1 - <5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

STATE REGULATIONS	
Massachusetts	The following components are listed: 4,4'-Methylenediphenyl diisocyanate.
New York	The following components are listed: 4,4'-Methylenediphenyl diisocyanate.
New Jersey	The following components are listed: 4,4'-Methylenediphenyl diisocyanate; o-(p-Isocyanatobenzyl)phenyl isocyanate.
Pennsylvania	The following components are listed: 4,4'-Methylenediphenyl diisocyanate.
California Prop. 65	
No products were found.	
CANADA	
CANADIAN LISTS	
Canadian NPRI	The following components are listed: 4,4'-Methylenediphenyl diisocyanate; Isocyanic acid, polymethylenepolyphenylene ester.
CEPA Toxic Substances	None of the ingredients are listed.
Canada Inventory	All components are listed or exempted.

SECTION 16: OTHER INFORMATION

HISTORY	
Prepared by	Huntsman Building Solutions - Technical Department
Preparation Date (y-m-d)	2019-08-30
Current Issue Date (y-m-d)	2020-04-03
KEY TO ABBREVIATIONS	
ATE	Acute Toxicity Estimate
BCF	Bioconcentration Factor
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
IMDG	International Maritime Dangerous Goods
LogPow	Logarithm of the octanol/water partition coefficient
MARPOL 73/78	International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN	United Nations

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