

Material Safety Data Sheet

1. Product and Company Identification

Product name: Poly Wall Port & Surface 2/20 Part A
Chemical family: Polyurethane Prepolymer
Product use: Refer to the product technical data sheets
Supplier/Manufacturer: Polyguard Products, Inc.
5385 Freitag Drive #1
Menomonie, WI
Tel: (715) 231-4255
In case of emergency: CHEMTREC, US 1-800-424-9300 International 1-703-527-3887

2. Hazards identification

Physical state: Liquid
Odor: Mild odor
Emergency Overview: MDI becomes more hazardous when atomized (sprayed). Product is not flammable but will burn under fire conditions. Eye contact with product will cause irritation and inflammation or damage to sensitive tissue. Repeated contact with skin may result in sensitization to product. Repeated inhalation or a large single dose of vapors may lead to isocyanate sensitization or tissue injury to upper respiratory tract.
At room temperature, MDI vapors are minimal due to low vapor pressure. However, heating, foaming or otherwise dispersing (drumming, venting or pumping) operations may generate more vapor or aerosol concentrations of isocyanates. Excessive exposure to may cause irritation of the eyes, upper respiratory tract and lungs. Severe overexposure may lead to pulmonary edema. Respiratory sensitization with asthma-like symptoms may occur in susceptible individuals. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Symptoms may include coughing, dryness of throat, headache, nausea, difficulty breathing and feeling of tightness in the chest. Effects may be delayed. Impaired lung function (decrease ventilators capacity) had been associated with overexposure to isocyanate. **Persons with Known respiratory or Allergy Problems Must Not Be Exposed to This Product!**

Potential acute health effects
Inhalation: Excessive exposure to may cause irritation of the upper respiratory tract and lungs. Severe overexposure may lead to pulmonary edema. Respiratory sensitization with asthma-like symptoms may occur in susceptible individuals. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Symptoms may include coughing, dryness of throat, headache, nausea, difficulty breathing and feeling of tightness in the chest. Effects may be delayed. Impaired lung function (decrease ventilators capacity) had been associated with overexposure to isocyanate.

Ingestion: Single dose oral toxicity is considered to be extremely low. Can result in irritation and corrosive action in mouth, stomach tissue and digestive tract.

Skin: No irritation is likely to develop following short contact periods with the skin. Prolonged or repeated exposure can cause skin irritation, reddening, dermatitis, and in some individuals, sensitization. Skin contact may result in allergic skin reactions or respiratory sensitization but is not expected to result in absorption or amounts sufficient to cause other adverse effects. May stain skin.

2. Hazards identification

Eyes:	As a liquid or dust, may cause irritation, inflammation, and/or damage to sensitive eye tissue. Symptoms include watering or discomfort of eyes. Corneal injury is unlikely.
Potential chronic health effects	
Chronic effects:	As a result of previous repeated overexposure or a single dose, certain individuals develop isocyanate sensitization (chemical asthma) or tissue injury in the upper respiratory tract. Animal tests indicate skin contact alone may also lead to allergic respiratory reaction. These effects may be permanent. Any person developing asthmatic reaction or other sensitization should be removed from further exposure.
Carcinogenicity:	MDI and polymeric MDI are not listed by the NTP, IARC or regulated by OSHA as carcinogens. Lung tumors have been observed in laboratory animals exposed to aerosol droplets of MDI/Polymeric MDI (6 mg/m ³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects.
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
Target organs:	Contains materials which cause damage to the following organs: Lungs, respiratory system
Over-exposure signs/symptoms:	
Inhalation:	Excessive exposure to may cause irritation of the upper respiratory tract and lungs. Severe overexposure may lead to pulmonary edema. Respiratory sensitization with asthma- like symptoms may occur in susceptible individuals.
Ingestion:	No specific data
Skin:	Prolonged or repeated exposure can cause skin irritation, reddening, dermatitis, and in some individuals, sensitization.
Eyes:	No specific data
Medical conditions aggravated by overexposure:	Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over exposure to this product.
See toxicological information (Section 11)	

3. Composition/information on ingredients

United States			
Name	CAS number	%	
Methylene Phenylene Isocyanate	101-68-8	30-40%	
Urethane Prepolymer	Proprietary	22-28 %	
Talc	14807-96-6	7-13 %	
MDI Homopolymer	Mixture	6-12 %	
Amorphous Silica	68611-44-9	1-7 %	
Quartz	14808-60-7	0.1 %	

Talc, Quartz and silica are not in its respirable form and are a constituent of the mixture.

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.

4. First aid measures

Eye contact:	Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water for at least 15 minutes. Materials containing MDI may react with the moisture of the eye forming a thick material that may be difficult to wash from eyes. Get medical attention.
Skin contact:	Wash off in flowing water or shower. Remove and wash contaminated clothing and discard contaminated shoes. Seek medical attention if redness, itching or a burning sensation develops or persists after the area is washed.
Inhalation:	Remove to fresh air. If not breathing give artificial respirations. If breathing is difficult, oxygen should be administered by qualified personal. Call a physician or transport to a medical facility immediately.
Ingestion:	If swallowed, drink 1 to 2 glasses of water or milk. Do not induce vomiting unless directed to do so by medical personal. If gastrointestinal symptoms develop, consult medical personnel. Never give anything by mouth to an unconscious person.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth to mouth resuscitation.
Notes to physician: Eyes:	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.
Skin:	This material is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as thermal burn.
Ingestion:	Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated of the irritating nature of this product.

5. Fire-fighting measures

Flammability of the product:	No specific fire or explosion hazard.
Extinguishing media: Suitable	Dry chemical, carbon dioxide, foam. Water spray for large fires.
Not suitable	None known
Hazardous thermal decomposition products	Decomposition products may include the following materials: Toxic gases
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.

6. Accidental release measures

Personal precautions:	No actions shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personal from entering. Do not touch or walk through spilled material. Test area for MDI. Avoid breathing vapor or mist. Provide adequate ventilation. Wear respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
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). Notify applicable governmental authorities if release is reportable. The CERCLA RQ for 4, 4- MDI is 5,000 lbs.

6. Accidental release measures

Methods for cleaning up

Cover the area with an inert absorbent such as clay or vermiculite and transfer to metal waste containers. Saturate with water or decontamination solution below, but do not seal the container with the isocyanate mixture. Larger quantities of liquid maybe transferred to drums for disposal. Note: Isocyanates will react with water and generate carbon dioxide. This could result in the rupture of any closed container.

Decontaminant

Clean up: The area should then be flushed with a decontamination solution: the decontamination solution is a 5-10 % solution of Sodium Carbonate and 0.5% liquid detergent in water solution or a 3% concentrated Ammonium Hydroxide and 0.5% liquid detergent in water. Use 10 parts decontamination solution to 1 part spilled material. If the Ammonium Hydroxide solution is used, ammonium will be evolved as a vapor. Use caution to avoid exposure to high concentrations of ammonia. Allow to stand for 48 hours letting evolved ammonia to escape.

7. Handling and storage

Handling

Put on appropriate personal protective equipment (see section 8).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. Do not get in your eyes or on your skin or clothing. 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 and can be hazardous. Do not reuse containers.

This material is designed to be pumped, not sprayed. MDI becomes more hazardous when atomized (sprayed).

Storage

When stored between 60 F and 85 F (15-30 C) in sealed containers, typical shelf life is 6 months or more from the date of manufacture. Consult technical data sheet for shelf life requirements affecting performance quality. Should freezing occur, the material must be thawed thoroughly and mixed until uniform. Opened containers must be handled properly to prevent moisture contamination. 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. Keep container tightly closed and sealed until ready to use. Do not store in unlabeled containers.

8. Exposure controls/personal protection

	United States
Product name	Exposure limits
Methylene Phenylene Isocyanate	ACGIH TLV TWA: 0.005 ppm 8 hour(s)
	NIOSH REL TWA: 0.05 mg/m ³ 8 hrs CEIL: 0.2 mg/m ³ 10 minute(s).
	OSHA PEL CEIL: 0.2 mg/m ³ 10 minute(s).

8. Exposure controls/personal protection

Talc	ACGIH TLV TWA: 2 mg/m ³ 8 hour(s) resp. NIOSH REL TWA: 2 mg/m ³ 8 hrs resp. OSHA PEL TWA: 20 mmpcf - resp.
Quartz/silica	ACGIH TLV TWA: 10 mg/m ³ 8 hour(s) resp OSHA PEL TWA: 6 mg/m ³ - resp.

Talc and Silica are not in its respirable form and is a constituent of the mixture.
Consult local authorities for acceptable exposure limits.

Recommended monitoring procedure:	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protection.
Engineering measures:	Use only with adequate ventilation. MDI has a very low vapor pressure at room temperature. General /local ventilation typically controls exposure levels very adequately. More aggressive engineering controls or personal protective equipment may be required in some applications such as heating.
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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the work station location.
Personal protection	
Eyes:	Chemical splash goggles, safety glasses or full face shield.
Skin:	Saranex coated tyvek overall buttoned at the neck and wrist.
Respiratory:	Supplied air, full face positive respirator or continuous flow respirator, or a supplied air hood is required when airborne concentrations are unknown or exceed threshold values. Air purifying (cartridge type) respirators are not approved for protection against isocyanates.
Hands:	Chemical resistant gloves- butyl rubber, nitrile rubber, neoprene.
HMIS Code/Personal protective equipment	
Environmental exposure control	Emission from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Physical state:	Dark brown liquid
Flash point	398 F (method =PMCC)
Boiling Point:	406 F @ 5 mm Hg
Vapor Pressure:	< 10 @ 5 mm Hg
Evaporation rate:	Slower than ethyl ether
Density:	10.31 lb/gal
Solubility:	Resin reacts slowly to liberate CO ₂ gas.

10. Stability and reactivity

Stability:	Polyisocyanates are highly reactive chemicals and should be handled and stored in a way to avoid exposure to many common substances, including water and moisture. Material is stable when stored in sealed containers under normal conditions. Avoid extended exposure over 110 f (45C).
Hazardous polymerization:	May occur with incompatible reactants especially strong bases, water and temperatures over 320 F (160 C). Possible evolution of carbon dioxide gas from overheating or exposure to contaminants may rupture closed containers.
Conditions to avoid:	
Materials to avoid:	Reactive or incompatible with the following materials: water, acids, bases, alcohols and metal compounds
Hazardous decomposition:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Conditions of reactivity:	Reacts with water, acids, bases, alcohols, metal compounds. The reaction with water is very slow under 102 F (50 C) but is accelerated at higher temperatures and in the presence of alkalis, tertiary amines and metal compounds. Some reactions can be vigorous or even violent.

11. Toxicological information

No data available

12. Ecological information

Environmental effects: No known significant or critical hazards.

13. Disposal considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Containers Disposal: Drums/containers must be thoroughly drained to process or storage vessels before removal to an appropriate area for subsequent decontamination. Drums/ containers must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour decontamination solution into the container making sure the walls are well rinsed. Let the drum/container soak unsealed for 48 hrs. Pour out the decontamination solution and triple rinse the empty container. Puncture or otherwise destroy the rinsed container before disposal. Do not heat or cut on empty containers with a gas or electric torch.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to SECTION 7; Handling and Storage and Section 8: Exposure Control / Personal Protection for additional handling information and protection of employees.

14. Transportation information

AERG: Not applicable
Regulatory Information:
DOT/TDG/IMDG/IATA Not regulated

15. Regulatory information

United States

U.S. Federal regulations: **United States inventory (TSCA 8b):** All components are listed or exempted.
SARA 302/304/311/312 extremely hazardous substance: No products were found.
SARA 302/304/311/312 hazardous chemicals: MDI
SARA 311/312 MSDS Distribution- Chemical inventory –hazard identification
MDI: Immediate (acute) health hazard, delayed (chronic) health hazard, Reactive hazard.
SARA 313 Toxic Chemicals: 4,4, dimethylmethane Diisocyanate (MDI) CAS# 101-68-8 100%

California Prop. 65 No product were found

16. Other information

Label Requirements

Hazardous Material

Information System (USA)

		HAZARD RATING
Health -	3	4- Extreme
Fire hazard-	1	3- Serious
Physical hazard	1	2- Moderate
Personal Protection		1- Slight

0- Minimal
See section 8 for more detailed information of personal protection.

National Fire Protection

Association (USA)

Health -	3
Flammability-	1
Instability	1
Special	

Date of Issue

8/3/11

Version

2

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.

Material Safety Data Sheet

1. Product and Company Identification

Product name Poly Wall-Port & Surface 2/20 Part B
Chemical family: Curative
Product use: Refer to the product technical data sheets
Supplier/Manufacturer: Polyguard Products, Inc.
5385 Freitag Drive #1
Menomonie, WI
Tel: (715) 231-4255
In case of emergency CHEMTREC, US 1-800-424-9300 International 1-703-527-3887

2. Hazards identification

Physical state: Liquid
Odor: Mild odor
Emergency Overview: MDI becomes more hazardous when atomized (sprayed). Product is not flammable but will burn under fire conditions. Eye contact with product will cause irritation and inflammation or damage to sensitive tissue. Repeated contact with skin may result in sensitization to product. Repeated inhalation or a large single dose of vapors may lead to isocyanate sensitization or tissue injury to upper respiratory tract.
At room temperature, MDI vapors are minimal due to low vapor pressure. However, heating, foaming or otherwise dispersing (drumming, venting or pumping) operations may generate more vapor or aerosol concentrations of isocyanates. Excessive exposure to may cause irritation of the eyes, upper respiratory tract and lungs. Severe overexposure may lead to pulmonary edema. Respiratory sensitization with asthma- like symptoms may occur in susceptible individuals. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Symptoms may include coughing, dryness of throat, headache, nausea, difficulty breathing and feeling of tightness in the chest. Effects may be delayed. Impaired lung function (decrease ventilators capacity) had been associated with overexposure to isocyanate. **Persons with Known respiratory or Allergy Problems Must Not Be Exposed to This Product!**

Potential acute health effects
Inhalation: Excessive exposure to may cause irritation of the upper respiratory tract and lungs. Severe overexposure may lead to pulmonary edema. Respiratory sensitization with asthma- like symptoms may occur in susceptible individuals. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Symptoms may include coughing, dryness of throat, headache, nausea, difficulty breathing and feeling of tightness in the chest. Effects may be delayed. Impaired lung function (decrease ventilators capacity) had been associated with overexposure to isocyanate.

Ingestion: Single dose oral toxicity is considered to be extremely low. Can result in irritation and corrosive action in mouth, stomach tissue and digestive tract.

Skin: No irritation is likely to develop following short contact periods with the skin. Prolonged or repeated exposure can cause skin irritation, reddening, dermatitis, and in some individuals, sensitization. Skin contact may result in allergic skin reactions or respiratory sensitization but is not expected to result in absorption or amounts sufficient to cause other adverse effects. May stain skin.

2. Hazards identification

Eyes:	As a liquid or dust, may cause irritation, inflammation, and/or damage to sensitive eye tissue. Symptoms include watering or discomfort of eyes. Corneal injury is unlikely.
Potential chronic health effects	
Chronic effects:	As a result of previous repeated overexposure or a single dose, certain individuals develop isocyanate sensitization (chemical asthma) or tissue injury in the upper respiratory tract. Animal tests indicate skin contact alone may also lead to allergic respiratory reaction. These effects may be permanent. Any person developing asthmatic reaction or other sensitization should be removed from further exposure.
Carcinogenicity:	MDI and polymeric MDI are not listed by the NTP, IARC or regulated by OSHA as carcinogens. Lung tumors have been observed in laboratory animals exposed to aerosol droplets of MDI/Polymeric MDI (6 mg/m ³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects.
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
Target organs:	Contains materials which cause damage to the following organs: Lungs, respiratory system
Over-exposure signs/symptoms:	
Inhalation:	Excessive exposure to may cause irritation of the upper respiratory tract and lungs. Severe overexposure may lead to pulmonary edema. Respiratory sensitization with asthma- like symptoms may occur in susceptible individuals.
Ingestion:	No specific data
Skin:	Prolonged or repeated exposure can cause skin irritation, reddening, dermatitis, and in some individuals, sensitization.
Eyes:	No specific data
Medical conditions aggravated by overexposure:	Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over exposure to this product.
See toxicological information (Section 11)	

3. Composition/information on ingredients

United States			
Name	CAS number	%	
Methylene Phenylene Isocyanate	Proprietary	38-42%	
Urethane Prepolymer	Proprietary	19-23 %	
Talc	14807-96-6	21-25 %	
Polyol	Proprietary	5-9 %	
Urethane prepolymer	Proprietary	1-5 %	
Quartz	14808-60-7	0.1- 2.2 %	
Clay	Proprietary	1-5 %	

Talc, Quartz and clay are not in its respirable form and are a constituent of the mixture.

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.

4. First aid measures

Eye contact:	Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water for at least 15 minutes. Materials containing MDI may react with the moisture of the eye forming a thick material that may be difficult to wash from eyes. Get medical attention.
Skin contact:	Wash off in flowing water or shower. Remove and wash contaminated clothing and discard contaminated shoes. Seek medical attention if redness, itching or a burning sensation develops or persists after the area is washed.
Inhalation:	Remove to fresh air. If not breathing give artificial respirations. If breathing is difficult, oxygen should be administered by qualified personal. Call a physician or transport to a medical facility immediately.
Ingestion:	If swallowed, drink 1 to 2 glasses of water or milk. Do not induce vomiting unless directed to do so by medical personal. If gastrointestinal symptoms develop, consult medical personnel. Never give anything by mouth to an unconscious person.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth to mouth resuscitation.
Notes to physician: Eyes:	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.
Skin:	This material is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as thermal burn.
Ingestion:	Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated of the irritating nature of this product.

5. Fire-fighting measures

Flammability of the product:	No specific fire or explosion hazard.
Extinguishing media: Suitable	Dry chemical, carbon dioxide, foam. Water spray for large fires.
Not suitable	None known
Hazardous thermal decomposition products	Decomposition products may include the following materials: Toxic gases
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.

6. Accidental release measures

Personal precautions:	No actions shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personal from entering. Do not touch or walk through spilled material. Test area for MDI. Avoid breathing vapor or mist. Provide adequate ventilation. Wear respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
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). Notify applicable governmental authorities if release is reportable. The CERCLA RQ for 4, 4- MDI is 5,000 lbs.

6. Accidental release measures

Methods for cleaning up

Cover the area with an inert absorbent such as clay or vermiculite and transfer to metal waste containers. Saturate with water or decontamination solution below, but do not seal the container with the isocyanate mixture. Larger quantities of liquid may be transferred to drums for disposal. **Note:** Isocyanates will react with water and generate carbon dioxide. This could result in the rupture of any closed container.

Decontaminant

Clean up: The area should then be flushed with a decontamination solution: the decontamination solution is a 5-10 % solution of Sodium Carbonate and 0.5% liquid detergent in water solution or a 3% concentrated Ammonium Hydroxide and 0.5% liquid detergent in water. Use 10 parts decontamination solution to 1 part spilled material. If the Ammonium Hydroxide solution is used, ammonium will be evolved as a vapor. Use caution to avoid exposure to high concentrations of ammonia. Allow to stand for 48 hours letting evolved ammonia to escape.

7. Handling and storage

Handling

Put on appropriate personal protective equipment (see section 8). 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. Do not get in your eyes or on your skin or clothing. 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 and can be hazardous. Do not reuse containers.

This material is designed to be pumped, not sprayed. MDI becomes more hazardous when atomized (sprayed).

Storage

When stored between 60 F and 85 F (15-30 C) in sealed containers, typical shelf life is 6 months or more from the date of manufacture. Consult technical data sheet for shelf life requirements affecting performance quality. Should freezing occur, the material must be thawed thoroughly and mixed until uniform. Opened containers must be handled properly to prevent moisture contamination. 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. Keep container tightly closed and sealed until ready to use. Do not store in unlabeled containers.

8. Exposure controls/personal protection

	United States
Product name	Exposure limits
Methylene Phenylene Isocyanate	ACGIH TLV
	TWA: 0.005 ppm 8 hour(s)
	NIOSH REL
	TWA: 0.05 mg/m ³ 8 hrs
	CEIL: 0.2 mg/m ³ 10 minute(s).
	OSHA PEL
	CEIL: 0.2 mg/m ³ 10 minute(s).

8. Exposure controls/personal protection

Talc	ACGIH TLV TWA: 2 mg/m ³ 8 hour(s) resp. NIOSH REL TWA: 2 mg/m ³ 8 hrs resp. OSHA PEL TWA: 20 mmpcf - resp.
Quartz/silica	ACGIH TLV TWA: 10 mg/m ³ 8 hour(s) resp OSHA PEL TWA: 6 mg/m ³ - resp.

Talc and Silica are not in its respirable form and is a constituent of the mixture.
Consult local authorities for acceptable exposure limits.

Recommended monitoring procedure:	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protection.
Engineering measures:	Use only with adequate ventilation. MDI has a very low vapor pressure at room temperature. General /local ventilation typically controls exposure levels very adequately. More aggressive engineering controls or personal protective equipment may be required in some applications such as heating.
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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the work station location.
Personal protection	
Eyes:	Chemical splash goggles, safety glasses or full face shield.
Skin:	Saranex coated tyvek overall buttoned at the neck and wrist.
Respiratory:	Supplied air, full face positive respirator or continuous flow respirator, or a supplied air hood is required when airborne concentrations are unknown or exceed threshold values. Air purifying (cartridge type) respirators are not approved for protection against isocyanates.
Hands:	Chemical resistant gloves- butyl rubber, nitrile rubber, neoprene.
HMIS Code/Personal protective equipment	
Environmental exposure control	Emission from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Physical state:	Dark brown liquid
Flash point	398 F (method =PMCC)
Boiling Point:	406 F @ 5 mm Hg
Vapor Pressure:	< 10 @ 5 mm Hg
Evaporation rate:	Slower than ethyl ether
Density:	10.31 lb/gal
Solubility:	Resin reacts slowly to liberate CO ₂ gas.

10. Stability and reactivity

Stability:	Polyisocyanates are highly reactive chemicals and should be handled and stored in a way to avoid exposure to many common substances, including water and moisture. Material is stable when stored in sealed containers under normal conditions. Avoid extended exposure over 110 f (45C).
Hazardous polymerization:	May occur with incompatible reactants especially strong bases, water and temperatures over 320 F (160 C). Possible evolution of carbon dioxide gas from overheating or exposure to contaminants may rupture closed containers.
Conditions to avoid: Materials to avoid:	Reactive or incompatible with the following materials: water, acids, bases, alcohols and metal compounds
Hazardous decomposition:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Conditions of reactivity:	Reacts with water, acids, bases, alcohols, metal compounds. The reaction with water is very slow under 102 F (50 C) but is accelerated at higher temperatures and in the presence of alkalis, tertiary amines and metal compounds. Some reactions can be vigorous or even violent.

11. Toxicological information

No data available

12. Ecological information

Environmental effects: No known significant or critical hazards.

13. Disposal considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Containers Disposal: Drums/containers must be thoroughly drained to process or storage vessels before removal to an appropriate area for subsequent decontamination. Drums/ containers must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour decontamination solution into the container making sure the walls are well rinsed. Let the drum/container soak unsealed for 48 hrs. Pour out the decontamination solution and triple rinse the empty container. Puncture or otherwise destroy the rinsed container before disposal. Do not heat or cut on empty containers with a gas or electric torch.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to SECTION 7; Handling and Storage and Section 8: Exposure Control / Personal Protection for additional handling information and protection of employees.

14. Transportation information

AERG: Not applicable
Regulatory Information:
DOT/TDG/IMDG/IATA Not regulated

15. Regulatory information

United States

U.S. Federal regulations: **United States inventory (TSCA 8b):** All components are listed or exempted.
SARA 302/304/311/312 extremely hazardous substance: No products were found.
SARA 302/304/311/312 hazardous chemicals: MDI
SARA 311/312 MSDS Distribution- Chemical inventory –hazard identification
MDI: Immediate (acute) health hazard, delayed (chronic) health hazard, Reactive hazard.
SARA 313 Toxic Chemicals: 4,4, dimethylmethane Diisocyanate (MDI) CAS# 101-68-8 100%

California Prop. 65 No product were found

16. Other information

Label Requirements

Hazardous Material

Information System (USA)

		HAZARD RATING
Health -	3	4- Extreme
Fire hazard-	1	3- Serious
Physical hazard	1	2- Moderate
Personal Protection		1- Slight

0- Minimal
See section 8 for more detailed information of personal protection.

National Fire Protection

Association (USA)

Health -	3
Flammability-	1
Instability	1
Special	

Date of Issue

8/3/11

Version

2

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