



# SAFETY DATA SHEET

Issue Date 12-Apr-2016

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Version 1

## 1. IDENTIFICATION

**Product identifier**

**Product Name** Membrane 72X Hardener

**Other means of identification**

**Product Code** 997BC

**Synonyms** None

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Industrial Coatings

**Uses advised against** No information available

**Details of the supplier of the safety data sheet**

**Manufacturer Address**

BLOME INTERNATIONAL  
1450 Hoff Industrial Drive  
O'Fallon, MO 63366

**Emergency telephone number**

**Company Phone Number** 636-379-9119

**Emergency Telephone** CHEMTREC: 800-424-9300

CHEMTREC: 703-527-3887

CANUTEC: 613-966-6666

## 2. HAZARDS IDENTIFICATION

**Classification**

**OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2

**Label elements**

**Emergency Overview**

**Danger**

**Hazard statements**

Harmful if inhaled

Causes skin irritation

Causes serious eye irritation

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

May cause respiratory irritation

May cause damage to organs through prolonged or repeated exposure

**Appearance** viscous**Physical state** liquid**Odor** Aromatic**Precautionary Statements - Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required  
 Use only outdoors or in a well-ventilated area  
 Wash face, hands and any exposed skin thoroughly after handling  
 In case of inadequate ventilation wear respiratory protection  
 Contaminated work clothing should not be allowed out of the workplace  
 Wear protective gloves  
 Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 If eye irritation persists: Get medical advice/attention  
 IF ON SKIN: Wash with plenty of soap and water  
 Take off contaminated clothing and wash before reuse  
 If skin irritation or rash occurs: Get medical advice/attention  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

**Precautionary Statements - Storage**

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

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not applicable

**Other Information**

Not applicable.

**Unknown acute toxicity**

0% of the mixture consists of ingredient(s) of unknown toxicity

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance**

Chemical Name	CAS No	Weight-%
Isocyanic acid, polymethylenepolyphenylene ester *	9016-87-9	30 - 60
4,4-Methylenediphenyl diisocyanate *	101-68-8	30 - 60
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]- *	5873-54-1	3 - 7

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

### 4. FIRST AID MEASURES

**Description of first aid measures**

<b>General advice</b>	In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). If symptoms persist, call a physician.
<b>Eye contact</b>	Call a physician immediately. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If symptoms persist, call a physician.
<b>Skin contact</b>	Wash contaminated clothing before reuse. Wash off immediately with plenty of water. If symptoms persist, call a physician.
<b>Inhalation</b>	Immediate medical attention is required. Move victim to fresh air. Administer oxygen if breathing is difficult. If breathing is irregular or stopped, administer artificial respiration.
<b>Ingestion</b>	Call a physician or poison control center immediately. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.
<b>Self-protection of the first aider</b>	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

**Most important symptoms and effects, both acute and delayed**

<b>Symptoms</b>	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction.
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**Indication of any immediate medical attention and special treatment needed**

<b>Note to physicians</b>	May cause sensitization in susceptible persons. Treat symptomatically.
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## 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media** CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical**

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

**Explosion data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

<b>Personal precautions</b>	Evacuate personnel to safe areas. Do not touch or walk through spilled material. Use personal protective equipment as required.
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**Environmental precautions**

<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system.
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**Methods and material for containment and cleaning up**

**Methods for containment** If possible, turn leaking containers so that gas escapes rather than liquid. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Transport to well ventilated area and treat with neutralizing solution: mixture of 80% water and 20% non-ionic surfactant Tergitol TMN-10; or 90% water, 3-8% concentrated ammonia and 2% detergent. Add about 10 parts of neutralizer per part of isocyanate, with mixing. Allow substance to evaporate.

**Methods for cleaning up** Do not direct water at spill or source of leak. Decontaminate floor with decontamination solution letting stand for at least 15 minutes.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. Avoid breathing vapors or mists.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a cool, well-ventilated place.

**Incompatible materials** Water. Alcohols. Strong bases. Strong oxidizing agents. Finely powdered metals.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
4,4-Methylenediphenyl diisocyanate 101-68-8	TWA: 0.005 ppm	Ceiling: 0.02 ppm Ceiling: 0.2 mg/m <sup>3</sup>	IDLH: 75 mg/m <sup>3</sup> Ceiling: 0.020 ppm 10 min Ceiling: 0.2 mg/m <sup>3</sup> 10 min TWA: 0.005 ppm TWA: 0.05 mg/m <sup>3</sup>

### Appropriate engineering controls

**Engineering Controls** Showers  
Eyewash stations  
Ventilation systems.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Skin and body protection** Wear protective gloves and protective clothing.

**Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical state</b>	liquid	<b>Odor</b>	Aromatic
<b>Appearance</b>	viscous	<b>Odor threshold</b>	No information available
<b>Color</b>	brown		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No information available	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	198 °C / 388.4 °F	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	~0	
Vapor density	No information available	
Relative density	1.234	
Water solubility	insoluble Reacts with water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	150-250 mPa s	
Explosive properties	No information available	
Oxidizing properties	No information available	

**Other Information**

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	No information available

**10. STABILITY AND REACTIVITY****Reactivity**

No data available

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

<b>Hazardous polymerization</b>	Hazardous polymerization may occur.
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**Conditions to avoid**

Keep from any possible contact with water. Extremes of temperature and direct sunlight. Storage near to reactive materials.

**Incompatible materials**

Water. Alcohols. Strong bases. Strong oxidizing agents. Finely powdered metals.

**Hazardous Decomposition Products**Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Hydrogen cyanide. Thermal decomposition can lead to release of irritating and toxic gases and vapors.**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure****Product Information**

<b>Inhalation</b>	May cause irritation of respiratory tract. May cause sensitization by inhalation. Harmful by inhalation.
<b>Eye contact</b>	Irritating to eyes.
<b>Skin contact</b>	Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Irritating to skin.

**Ingestion**

No data available.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	= 49 g/kg ( Rat )	> 9400 mg/kg ( Rabbit )	= 490 mg/m <sup>3</sup> ( Rat ) 4 h
4,4-Methylenediphenyl diisocyanate 101-68-8	= 31600 mg/kg ( Rat ) = 9200 mg/kg ( Rat )	-	= 369 mg/m <sup>3</sup> ( Rat ) 4 h

**Information on toxicological effects****Symptoms**

May cause an allergic skin reaction. Redness.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Sensitization**

May cause sensitization by inhalation. May cause sensitization by skin contact.

**Germ cell mutagenicity**

No information available.

**Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	-	Group 3	-	-
4,4-Methylenediphenyl diisocyanate 101-68-8	-	Group 3	-	-

*IARC (International Agency for Research on Cancer)**Not classifiable as a human carcinogen***Reproductive toxicity**

No information available.

**STOT - single exposure**

No information available.

**STOT - repeated exposure**

Causes damage to organs through prolonged or repeated exposure.

**Chronic toxicity**

Repeated or prolonged exposure may cause central nervous system damage. Repeated or prolonged contact causes sensitization, asthma and eczemas.

**Target Organ Effects**

Respiratory system, Eyes, Skin, Central nervous system.

**Aspiration hazard**

No information available.

**Numerical measures of toxicity - Product Information**

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	18,281.00
ATEmix (dermal)	17,108.00
ATEmix (inhalation-dust/mist)	3.30 18282 17094 4

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

100 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS****Waste treatment methods**

<b>Disposal of wastes</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations.
<b>Contaminated packaging</b>	Do not reuse container.

#### 14. TRANSPORT INFORMATION

<b>DOT</b>	Not regulated
<b>TDG</b>	Not regulated
<b>IATA</b>	Not regulated
<b>IMDG</b>	Not regulated

#### 15. REGULATORY INFORMATION

##### International Inventories

<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Complies
<b>AICS</b>	Complies

##### Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

##### US Federal Regulations

##### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Isocyanic acid, polymethylenepolyphenylene ester - 9016-87-9	1.0
4,4-Methylenediphenyl diisocyanate - 101-68-8	1.0
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]- - 5873-54-1	1.0

##### SARA 311/312 Hazard Categories

<b>Acute health hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire hazard</b>	No
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	No

##### CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

##### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
4,4-Methylenediphenyl diisocyanate 101-68-8	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

**US State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	X	-	-
4,4-Methylenediphenyl diisocyanate 101-68-8	X	X	X
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl) methyl]- 5873-54-1	X	-	-

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

<b>NFPA</b>	Health hazards 3	Flammability 1	Instability 0	Physical and Chemical Properties - Personal protection X
<b>HMIS</b>	Health hazards 3*	Flammability 1	Physical hazards 0	

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**Revision Note**

No information available

**Disclaimer**

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet