



## **SECTION 1: Identification**

### **1.1 Identification**

Product Form: Mixture  
Product Name: AR 4000 PA-B  
Product Code: AR 4000 PA-B  
Other means of identification: AR 4000 PA-B

### **1.2 Relevant Identifies Uses of The Substance or Mixture and Uses advised against.**

No additional information available

### **1.3 Supplier**

Alkares Polymers Inc  
1645 Sismet Rd Unit 20  
Mississauga. ON. L4W1Z3  
1 905 910 0337

### **1.4 Emergency Telephone Number CHEMTREC: 1 800 424 9300**

## **SECTION 2: Hazard(s) Identification**

### **2.1 Classification of substance or mixture**



#### **GHS-US Classifications**

Skin corrosion/irritation H314  
Category 1A  
Skin sensitization category 1 H317 May cause an allergic reaction.

Full text of H statement see section 16.

### **2.2 GHS Label elements, including precautionary statements.**

#### **GHS- US Labeling**

Hazard Pictogram (GHS- US) :    
Signal word (GHS-US): Danger Corrosive



Contains:	Hexamethylene Diisocyanate	
Hazard Statements (GHS-US):	H315	Causes skin irritation.
	H317	May cause an allergic skin reaction.
Precautionary Statements:	P260	Do not breathe mist or dust
	P261	Avoid breathing vapours.
	P264	Wash hands thoroughly after handling.
	P272	Contaminated work clothes must not be allowed out of workspace.
	P280	Wear protective clothing.
	P302+P352	If on skin wash with plenty of soap
	P321	Specific treatment (see a doctor if symptoms do not go away
	P332+P313	If skin irritation occurs get medical advice/attention.
	P333+P313	If skin irritation or rash occurs see medical advice/attention)
	P362+P364	Take off contaminated clothing and wash it before reuse.
	P363	Wash contaminated clothing before reuse.
P405	Store locked up.	
P501	Dispose of contents/container according to local regulations.	

**2.3: Other Hazards which do not result in classification**

No additional information available

**2.4: Unknown Acute Toxicity (GHS-US)**

Not applicable

**SECTION 3: Composition/information on ingredients**

**3.1 : Substances**

Not applicable



### 3.2: Mixture

Name	Product Identifier	%	GHS-US Classification
Hexamethylene Diisocyanate	(CAS No) 28182-81-2	80-90	Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317
Hexane, 1,6-diisocyanato-; Isocyanic acid, hexamethylene ester	(CAS No) 822-06-0	0-0.5	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Acute Tox. 2 (Inhalation: dust, mist), H330

## SECTION 4: First Aid Measures

### 4.1: Description of first aid measures

- First Aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First Aid Measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
- First Aid Measure after skin contact: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician. Wash with plenty of soap and water. If skin irritation or rash occurs: When symptoms occur rinse immediately with plenty of water. Get medical advice/attention. Specific treatment (see Consult a doctor/medical service on this label). Wash contaminated clothing before reuse.
- First Aid Measure after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
- First Aid Measure after ingestion: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

### 4.2: Most Important Symptoms and Effects (Acute and Delayed)

- Symptoms/Injuries: Irritation of the respiratory tract, Irritation of the nasal mucous membranes. Irritation of eye tissue. Skin rash/inflammation.



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Symptoms/Injuries after inhalation:

May cause irritation or asthma like symptoms. May cause respiratory irritation.

Symptoms/Injuries after skin contact:

May cause skin irritation.

Symptoms/Injuries after eye contact:

May cause eye irritation.

#### 4.3: Immediate medical attention and special treatment if necessary

Treat Symptomatically

### **SECTION 5: Fire Fighting Measures**

#### 5.1: Suitable and unsuitable extinguishing media

Suitable Extinguishing Media:

Alcohol resistant foam, water, water fog, CO<sub>2</sub>, dry chemical, dry sand, limestone powder.

#### 5.2: Specific Hazards Arising from the Chemical

Fire Hazard:

No Data available on direct fire hazard

Reactivity:

Polymerizes on exposure to some compounds e.g. amines, sulphurated compounds and (some) acids. Release of heat.

#### 5.3: Special Protective Equipment and Precautions for Fire Fighters

Firefighting instructions:

Fight fire with normal precautions and from a safe distance.

### **SECTION 6: Accidental Release Measures**

#### 6.1: Personal Precautions, Protective Equipment and Emergency Procedures

General Measures:

Absorb spillage to prevent material damage.

##### 6.1.1: For Non-Emergency Personnel



No additional information available

**6.1.2 For Emergency Responders**

No Additional information available

**6.2: Environmental Precautions**

Prevent entry to sewers and public waters.

**6.3: Methods and Material for containment and Clean Up**

For Containment:	Collect spillage, contain released product, dam up released spill.
Methods for cleaning up:	Absorb spillage to prevent material damage. Cover the solid spill with dry sand/earth/vermiculite soda ash or powdered limestone.
Other Information:	Dispose in a safe manner according to local rules and regulations.

**6.4: Reference to other sections**

No additional information available

**SECTION 7: Handling and Storage**

**7.1: Precautions for safe handling**

Precautions for safe handling:	Wash hands and other areas with mild soap and water before eating, drinking, smoking and when leaving work. Wear personal protective equipment.
Hygiene Measures:	Do not eat, drink, or smoke while handling this product.

**7.2: Conditions for safe storage including any incompatibilities**



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Storage conditions:

Keep container closed when not in use. keep only in original containers, keep in a dry place. Store in closed container.

Storage Area:

Keep container in well ventilated space.

**SECTION 8 : Exposure Controls/Personal Protection**

**8.1 : Control Parameters**

Hexamethylene Diisocyanate (28182-81-2) Not Applicable

Hexane,1,6-diisocyanato-; Isocyanic acid, hexamethylene ester (822-06-0)

ACGIH Local name Hexamethylene diisocyanate

ACGIH ACGIH TWA (ppm) 0.005 ppm

ACGIH Remark (ACGIH) URT irr; resp sens

**8.2: Appropriate Engineering Controls**

Appropriate Engineering Controls: Ensure good ventilation of workspace.

**8.3: Individual Protection Measures/Personal Protective Equipment**

Personal Protective Equipment: Wash hands and other exposed areas with mild soap and water before eating, drinking, smoking and before leaving work.

Hand Protection: Wear Gloves

Eye Protection: Chemical goggles or safety glasses

Skin and body protection: Wear suitable protective clothing.

Respiratory Protection: In case of inadequate ventilation wear suitable respirators.

**SECTION 9: Physical and Chemical Properties**

**9.1: Information on basic physical and chemical properties**

Physical State: Liquid

Colour: Colourless to light yellow

Odour: Mild Odour

Boiling Point: >435 Fahrenheit

Flash Point: >100 Fahrenheit



Specific gravity/density: 1Kg/l  
Solubility: No Data given

**SECTION 10: Stability and Reactivity**

10.1 Reactivity: Corrosive Vapours.  
10.2: Chemical Stability: Stable under normal conditions  
10.3: Possibility of Hazardous reaction: No additional information available  
10.4: Conditions to avoid: Direct sunlight, extremely high and low temperatures  
10.5: Incompatible Materials: Strong acids and strong bases  
10.6: Hazardous Decomposition Product : Carbon dioxide, Carbon monoxide, Fume. Thermal decomposition generates corrosive vapours.

**SECTION 11 : Toxicological Information**

**11.1 : Information on Toxicological Effects**

Acute Toxicity : Not classified

**Hexamethylene Diisocyanate (28182-81-2)**

LD 50 Oral Rat: < 910 mg/kg (Rat; Literature study)  
ATE US (oral) : 500.000 mg/kg bodyweight.  
Skin corrosion/irritation : Causes skin irritation  
Serious eye damage/irritation: No available information  
Respiratory and skin sensitization: May cause an allergic reaction.  
Germ cell mutagenicity: Not Classified  
Carcinogenicity: Not Classified  
Reproductive Toxicity: Not Classified  
Specific organ target Toxicity, Not Classified  
Aspiration Hazard: Not Classified  
Routes of exposure: Dermal, Ingestion, Inhalation, Skin and Eye contact



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Symptoms/Injuries:

Irritation to the respiratory tract, Irritation to the nasal mucous membrane, Irritation of eye tissue and Skin rash/inflammation.

Symptoms/Injuries after inhalation:

May cause irritation or asthma like symptoms.

Symptoms/irritation after skin contact:

May cause skin irritation.

Symptoms/irritation after eye contact:

May cause eye irritation.

**SECTION 12: Ecological Information**

**12.1: Toxicity**

LC50 fish 1	172 mg/l (LC50; 48 h; Leuciscus idus; Static system)
EC50 Daphnia 1	31.5 mg/l (EC50; 24 h; Daphnia magna)
Threshold limit algae 1	29.5 mg/l (EC50; 72 h; Scenedesmus subspicatus)

**12.2 Persistence and Degradability**

**Hexamethylene Diisocyanate (28182-81-2)**

Persistence and degradability Not readily biodegradable in water. No (test)data on mobility of the substance available. Photodegradation in the air.

**12.3: Bio accumulative Potential**

**Hexamethylene Diisocyanate (28182-81-2)**

Log Pow	0.7 (Literature)
Bio accumulative potential	Low potential for bioaccumulation (Log Pow < 4).

**12.4: Mobility in Soil**

**Hexamethylene Diisocyanate (28182-81-2)**

Surface tension	0.04 N/m (20 °C)
Ecology soil:	Low potential for absorption in soil

**SECTION 13: Disposal Considerations**



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**13.1: Disposal Methods**

Waste disposal recommendations:

Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to Remove waste in accordance with local and/or national regulations.

Ecology - waste materials:

Avoid release to the environment.

**SECTION 14: Transport Information**

Department of Transportation (DOT)

In accordance with DOT

Transport document description:

Not Applicable

Proper Shipping Name (DOT):

Hexamethylene Diisocyanate

Class (DOT):

8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT):

8 – Corrosive In accordance with DOT



Packing group (DOT):

III - Minor Danger

DOT Packaging Non-Bulk (49 CFR 173.xxx):

203

DOT Packaging Bulk (49 CFR 173.xxx):

241

DOT Symbols:

G - Identifies PSN requiring a technical name.

DOT Special Provisions (49 CFR 172.102):

IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672) T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling =  $97 / (1 + a (tr - tf))$  Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees Celsius of the liquid during filling TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa)



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may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP

DOT Packaging Exceptions (49 CFR 173.xxx): 154

DOT Quantity Limitations

Passenger aircraft/rail (49 CFR 173.27): 5 L

DOT Quantity Limitations

Cargo aircraft only (49 CFR 175.75): 60 L

DOT Vessel Stowage Location: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

DOT Vessel Stowage Other: 52 - Stow "separated from" acids.

Other information: No supplementary information available.

TDG No Additional information available

Transport by Sea:

UN-No. (IMDG): 2735

Proper Shipping Name (IMDG): Hexamethylene Diisocyanate , LIQUID, CORROSIVE, N.O.S.

Class (IMDG): 8 - Corrosive substances

Packing group (IMDG): III - substances presenting low danger

Transport by Air:

UN-No. (IATA): 2735

Proper Shipping Name (IATA): Hexamethylene Diisocyanate , liquid, corrosive, n.o.s.

Class (IATA): 8 - Corrosives

Packing group (IATA): III - Minor Danger

**SECTION 15: Regulatory Information**

**15.1: US Federal Regulations**

**Hexamethylene Diisocyanate (28182-81-2)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory.



**Hexane,1,6-diisocyanato-; Isocyanic acid, hexamethylene ester (822-06-0)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory.

**All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.**

**15.2: Canadian Regulations**

**All components of this product are listed on the Canadian Domestic Substance List**

**SECTION 16: Other Information**

Other Information

Disclaimer: This SDS to the best of our knowledge conforms to the requirements of OSHA 20 CFR 1910.1200 and summarizes the health and safety hazard information and general guidance on how to safely handle the material at the date of issue. Each user must review the SDS in the context of how the product will be handled and used in the workplace.

Full Text of H Phrases

H 227:	Combustible Liquid
H 302:	Harmful if swallowed
H 311:	Toxic in contact with skin
H 312:	Harmful in contact with skin
H 314:	Causes severe skin burn and eye damage
H 315:	Causes skin irritation
H 317:	May cause an allergic reaction
H 319:	Causes serious eye irritation
H 332:	Harmful if inhaled
H 400:	Very toxic to aquatic life
H 401:	Toxic to aquatic life
H 402:	Harmful to aquatic life
H 410:	Very toxic to aquatic life with long lasting effects
H 411:	Toxic to aquatic life with long lasting effects
H 412:	Harmful to aquatic life with lasting effects



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HMS 111 Rating

Health:	2 Moderate Hazard - Temporary or minor injury may occur
Flammability:	1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
Physical:	0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Health:	2 Moderate Hazard - Temporary or minor injury may occur.

**This information that is documented is based on our current knowledge and is intended to describe the product for the purposes of health, safety, and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.**