



# MATERIAL DATA SAFETY SHEET

## **HARDCOAT A-SIDE**

### 1. PRODUCT IDENTIFICATION Revised January 15, 2015

Product Name: Harcoat A-Side

Product Class: Isocyanate

### 2. COMPOSITION

#### Component

Diphenylmethane Diisocyanate

#### %

50  
50

#### CAS#

101-68-8  
Proprietary

#### OSHA PEL

>99  
0.3

#### HMIS RATINGS

Health	2
Flammability	1
Reactivity	1
Protective Equipment	Yes

### 3. HAZARDS IDENTIFICATION

**Physical state** : Liquid.

**Odor** : slightly musty

**OSHA/HCS status** : This material is classified as hazardous under OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Emergency overview** Harmful by inhalation. Irritating to eyes and respiratory system. May cause sensitization by inhalation and skin contact. This product is a respiratory irritant and potential respiratory sensitizer: repeated inhalation of vapor or aerosol at levels above the occupational exposure limit could cause respiratory sensitization. A hyper-reactive response to even minimal concentrations of diisocyanates may develop in sensitized persons. The onset of the respiratory symptoms may be delayed for several hours after exposure. Reacts slowly with water to produce carbon dioxide which may rupture closed containers. This reaction accelerates at higher temperatures.

**GENERAL INFORMATION** : Read the entire MSDS for a more thorough evaluation of the hazards.

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## HardCoat A-SIDE

### 4. FIRST AID

Skin Exposure: Wash with plenty of soap and water. If redness, itching or a burning sensation develops get immediate medical attention.

Eyes: Immediately flush with water for a continuous 15 minutes. Have eyes examined and treated by medical practices immediately.

Ingestion: Immediately drink 2 glasses of water. If gastrointestinal symptoms develop, get immediate medical attention.

Inhalation: Get to fresh air immediately. If difficult to breathe, give oxygen and consult physician.

### 5. FIRE FIGHTING

Flash Point: 300 F

Auto-ignition: 480 C

Flammability: No Data

Extinguishing Media: Dry Chemical, Foam, Caron Dioxide, Halogenated Agents. If water is used, use very large amounts as reaction between hot isocyanate and water will be vigorous.

### 6. ACCIDENTAL SPILL

Always wear skin, eye and respiratory protection during cleanup. Soak up materials using absorbent and shovel into a chemical waste container. Secure container from work area and prepare a decontamination solution of .5% liquid detergent and 8% concentrated ammonium hydroxide in water (10% sodium carbonate may be substituted for the ammonium hydroxide. Follow the precautions regarding the hazards of the chemical used. Treat the spill area with the decontaminate solution and allow it to react for 15 minutes. Carbon dioxide will gas off leaving an insoluble material. Contact CHEMTRAC AT 800-424-9300.

### 7. HANDLING AND STORAGE

Always read product MSDS prior to handling. Always keep air-tight secure lid on this material.

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### 8. EXPOSURE

**Engineering controls:** Use local exhaust ventilation to maintain airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it. For guidance on engineering control measures refer to publications such as the ACGIH current edition of 'Industrial Ventilation, a manual of Recommended Practice.

**Preventive Measures:** Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace. Medical supervision of all employees who handle or come in contact with respiratory sensitizers is recommended. Persons with respiratory problems including asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or skin allergies should be evaluated for their suitability of working with this product. Once a person is diagnosed as sensitized, no further exposure to the material that caused the sensitization should be permitted.

**Personal protection:**

**Eyes:** Chemical safety goggles. If there is a potential for splashing, use a full face shield.

**Skin:** The following protective materials are recommended: Gloves - neoprene, nitrile rubber, butyl rubber. Thin latex disposable gloves should be avoided for repeated or long term use. Protective clothing should be selected and used in accordance with 'Guidelines for the Selection of Chemical Protective Clothing' published by ACGIH.

**Respiratory:** When the product is sprayed or heated without adequate ventilation, an approved MSHA/NIOSH positive-pressure, supplied-air respirator may be required. Air purifying respirators equipped with organic vapor cartridges and a HEPA (P100) particulate filter may be used under certain conditions when a cartridge change-out schedule has been developed in accordance with the OSHA respiratory protection standard (29 C.F.R. 1910.134).

**Other protection :** Consult your supervisor or S.O.P. for special handling instructions



## HardCoat A-SIDE

### 9. PHYSICAL INFORMATION

Appearance and odor: Clear with faint musty odor.

Boiling Point: decomposes at 646 F, 341 C

Vapor Pressure mmHg at 20 C: <0.0001

Vapor Density: no data

Solubility: Reacts with water, reduces with MEK, Toluenes and Acetones.

SG: 1.2

### 10. REACTIVITY

Reactive with water or any material containing active hydrogen such as alcohols, ammonia, amines, alkalis and acids. Stable under normal conditions. Reaction with water is accelerated at elevated temperatures and in the presence of alkalis, amines and metal compounds. Some reactions can be violent. Hazardous Combustion Products: carbon dioxide, carbon monoxide, nitrogen oxides, ammonia and trace amounts of cyanide. Hazardous Polymerization will occur at high temperatures involving alkalis, amines and metals. These types of reactions will create CO<sub>2</sub> which may rupture some closed containers.

### 11. TOXICOLOGY

Acute Eye Irritation: 0.1 ml rabbit

Acute Skin Irritation: 0.5 ml rabbit

Dermal Toxicity: LD<sub>50</sub>– lethal dose of 50% of test species, >1.18 mg/l in rats.

Acute Respiratory: Studies indicate potential carcinogen for prolong breathing of vapors.

Acute Oral Toxicity: LD<sub>50</sub>– lethal dose 50% of test species, >5000mg/l rat.

### 12. ECOLOGICAL INFORMATION

Polymeric MDI. LC<sub>50</sub> > 1000 mg/l. EC 50 ( Daphnia magna) (24 hour) > 1000 mg/l EC<sub>50</sub> ( E. Coli) > 100 mg/l

Environmental Fate and Distribution: It is unlikely that significant environmental exposure in the air or water will arise based on consideration of the production and use of the substance.

Persistence and Degradation: Immiscible with water, but will react with water to produce inert and non-biodegradable solids.

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### 13. DISPOSAL

Stir the isocyanate waste into the decontamination solution and let stand for 48 hours while allowing the CO<sub>2</sub> to vent away. This decontaminated liquid is not considered a hazardous waste under RCRA and 40CFR 261.

Container Disposal: Drums containing residual decontaminated isocyanate must be thoroughly drained and then may taken to appropriate hazardous waste facilities. Note that all containers sent to disposal may be subject to federal, state and/or local regulations..

patent. Seller shall not be liable for any incidental, consequential or indirect use of this product. Data herein must be confirmed by Buyer by testing for its intended use.

### 14. TRANSPORT AND REGULATORY INFORMATION

Transportation Emergency Number 800-424-9300 (Chemtrac)

DOT Classification: Single containers less than 5000 lbs are not regulated. Single containers with 5000 lbs or more of 4,4'- Methylene Diphenyl Diisocyanate are regulated as: Other Regulated Substances, Liquid, N.O.S. ( Methylene Diphenyl Diisocyanate), 9, NA Number 3082, Packaging Group III, RQ.

### 15. REGULATORY INFORMATION:

TSCA (Toxic Substances Control Act) regulations, 40 CFR 710: All ingredients are on the TSCA Chemical Substance Inventory.

Canada: DSL: Yes NDSL: N/A

Europe: All the raw materials used in this product are listed EINECS.

CERCLA and SARA Regulations (40 CFR 355,370 and 372): Section 313 Supplier Notification.

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 373.250.

The information herein is given in good faith but no warranty, expressed or implied, is made.

HAZARDOUS MATERIALS INFORMATION LABEL (HMIS)

HAZARD CODE RATING:

4= EXTREME FLAMMABILITY: 0

3= HIGH HEALTH 1

2= MODERATE REACTIVITY 0

1= SLIGHT PERSONAL PROTECTION S, R

0= INSIGNIFICANT

S,R = Splash Goggles + Synthetic Apron + Gloves + Respirator in sum circumstances

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## HardCoat A-SIDE

Department of Transportation Regulations: Not regulated by DOT - HMR

SARA and WHMIS Classification: This material is not categorized as a hazardous substance as defined by SARA Title III regulations (40 CFR 370).

Canadian WHMIS Classification: Not WHMIS Hazardous

SARA Section 313 Listed Ingredients: it does not contain any substance which is subject to the reporting requirements of 40 CFR 372.

RCRA Regulations: At this time, its containers would not be considered hazardous wastes as defined under the federal RCRA regulations (40 CFR 261) if discarded. Care should be taken, however, to ensure that the material or its containers are disposed of in an approved facility in accordance with current federal, state and local regulations. Additional information may be obtained by contacting your state or local solid waste agency or the United States Environmental Agency's RCRA hotline (1.800.424.9346 or 1.202.382.3000).

### 16. DISCLAIMER INFORMATION:

The information given is to the best of our knowledge correct with no representation of warranty, expressed or implied. No statements herein are to be construed as inducements to infringe any relevant patent. Seller shall not be liable for any incidental, consequential or indirect use of this product. Data herein must be confirmed by Buyer by testing for its intended use.

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# MATERIAL DATA SAFETY SHEET

## **HARCOAT B-SIDE**

Revised January 15, 2015

### 1. PRODUCT IDENTIFICATION

**Product Name:** HardCoat B-Side

**Product Class:** Polymeric Polyol

### 2. COMPOSITION

<u>Component</u>	<u>%</u>	<u>CAS#</u>
Polyetheramine	25	9082-00-2
Mixed Diamines	75	111-46-6

HMIS RATINGS	
Health	2
Flammability	1
Reactivity	0
Protective Equipment	Yes

### 3. HAZARDS IDENTIFICATION

Effects of over-exposure: Eyes– possible injury. Inhalation: odor considered annoying. Skin: moderate irritation causing redness or drying. Ingestion: small amounts are not likely to cause injury. Avoid inhalation of atomized chemical and smoke when burning.

### 4. FIRST AID

Emergency procedures must be conducted for incidental eye contact. Flush immediately for 15 minutes and then obtain medical attention. For skin contact, simply wash with soap and water. For ingestion, induce vomiting and contact physician.

### 5. FIRE FIGHTING

Flash Point: NA. Extinguishing media: Water fog, CO<sub>2</sub>, Dry Chemical, Chemical Foam. Low explosion hazard.

### 6. ACCIDENTIAL SPILLAGE

Contain spill using absorbent material or wipe up. Then place waste in open container to dry.

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## HardCoat B-SIDE

### 7. HANDLING AND STORAGE

Effects of over-exposure: Eyes– possible injury. Inhalation: odor considered annoying. Skin: moderate irritation causing redness or drying. Ingestion: small amounts are not likely to cause injury. Avoid inhalation of atomized chemical and smoke when burning.

### 8. EXPOSURE

Emergency procedures must be conducted for incidental eye contact. Flush immediately for 15 minutes and then obtain medical attention. For skin contact, simply wash with soap and water. For ingestion, induce vomiting and contact physician.

### 9. PHYSICAL PROPERTIES

Flash Point: NA. Extinguishing media: Water fog, CO<sub>2</sub>, Dry Chemical, Chemical Foam. Low explosion hazard.

### 10. REACTIVITY

This product is stable. It is incompatible with alkali, earth metals and strong acids. Hazardous decomposition products: CO<sub>2</sub>, CO, NO<sub>2</sub>. Hazardous polymerization will not occur. Avoid isocyanates and oxidizing materials.

### 11. TOXICOLOGICAL INFORMATION

NA

### 12. ECOLOGICAL INFORMATION

N/A.

### 13. DISPOSAL

Follow hazardous control procedures and deliver containers to hazardous waste facility.

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## **HardCoat B-SIDE**

### **14. TRANSPORT AND REGULATORY INFORMATION**

Transportation Emergency Number 800-424-9300 (Chemtrac)  
DOT Classification: Single containers less than 5000 lbs are not regulated.  
Hazardous class: 9  
ID Number: NA 3082  
Packing Group: PG III

### **15. DISCLAIMER INFORMATION:**

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