

# MATERIAL SAFETY DATA SHEET

**SPRAYWALL™ "A"**

HMIS

SPRAYROQ®, INC.  
4707 ALTON COURT  
BIRMINGHAM, AL 35210

HEALTH	3
FLAMMABILITY	1
REACTIVITY	1
PERSONAL PROTECTION	D

## 1. GENERAL

TRADE NAME: Spraywall™ "A" component

OTHER COMPANY NAMES: N/A

OTHER INDUSTRY NAMES: MDI polyisocyanate prepolymer and similar oligomers

CHEMICAL FAMILY: Polymeric Isocyanate MDI	DOT HAZARDOUS MATERIALS SHIPPING NAME: None
GENERIC NAME: MDI Isocyanate	DOT HAZARD CLASS: None
CAS NO. See Section 9 Components	DOT PLACARD QUANTITY: N/A

UN/NA ID NO.: 2489

## 2. SUMMARY OF HAZARDS

**SIGNAL WORD:** Caution

**PHYSICAL HAZARDS:** Slightly combustible liquid

**ACUTE HEALTH EFFECTS:**

**Inhalation:** MDI vapors or mist at concentrations (short term) above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a

preexisting, non-specific bronchial hyperactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms (e.g., fever, chills) has also been reported. These symptoms can be delayed up to several hours after exposure.

## 2. SUMMARY OF HAZARDS (continued)

**Eye Contact:** Liquid, aerosols or vapors are irritating and can cause tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible.

**Ingestion:** Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

**Skin Contact:** Isocyanates react with the skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling, or blistering. Cured material is difficult to remove.

### CHRONIC HEALTH EFFECTS

**Inhalation:** As a result of previous repeated overexposure or a single large dose, certain individuals develop Isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to Isocyanate at levels well below the TLV. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath and asthma attack, could be immediate or delayed (up to several hours after exposure). Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, and/or other

irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Overexposure to Isocyanate has also been reported to cause lung damage (including a decrease in lung function) which is permanent. Sensitization can either be temporary or permanent.

**Eye Contact:** None determined. See Acute Health Effects in previous section; eye contact.

**Ingestion:** None determined. See Acute Health Effects in previous section; ingestion.

**Skin Contact:** Prolonged contact can cause reddening, swelling, rash, scaling, blistering, and in some cases skin sensitization. Individuals who have skin sensitization can develop these symptoms from contact with liquid or vapors. Animal tests have indicated that respiratory sensitization can result from skin contact with MDI. This data reinforces the need to prevent direct skin contact with MDI.

<b>3. FIRE AND EXPLOSION</b>		
FLASH POINT 460°F (PMCC)	AUTOIGNITION TEMPERATURE No data available	FLAMMABLE LIMITS LOWER LIMITS no data UPPER LIMITS no data

<b>3. FIRE AND EXPLOSION (continued)</b>
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**FIRE AND EXPLOSION HAZARDS:**

In the form supplied hazard is very low, however, with sufficient air and exposed to ignition source, vapors or fine sprays/mist can burn in the open or explode if confined. Vapors may be heavier than air. May travel long distances along the ground before igniting and flashing back to the vapor source.

**EXTINGUISHING MEDIA:**

- CO2    Dry chemical
- Water spray for large fires
- Foam

**EXTINGUISHING MEDIA USE COMMENT:**

No additional information available

**SPECIAL FIRE FIGHTING PROCEDURES:**

Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. During a fire, MDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. At temperatures greater than 400°F. polymeric MDI can polymerize and decompose which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore use cold water to cool fire-exposed containers.

<b>4. HEALTH HAZARDS</b>
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**SUMMARY OF ACUTE HAZARDS:** Slightly toxic health hazard.  
 See below for route specific details.

ROUTES OF ENTRY	SIGNS AND SYMPTOMS	Primary Routes
INHALATION	Irritant, burning sensation	Yes

EYE CONTACT	Causes irritation, seen as reddening, tearing, and swelling	Yes
SKIN ABSORPTION	Causes reddening, swelling, rash, scaling, or blistering.	Yes
INGESTION	Causes irritation and corrosive action to the mouth, stomach, and digestive tract.	Yes

**SUMMARY OF CHRONIC HAZARDS:** Causes a health risk to humans. See CHRONIC HEALTH EFFECTS in Section 2.

## 5. PROTECTIVE EQUIPMENT AND OTHER CONTROL MEASURES

**Respiratory:** Concentrations greater than the TLV can occur when MDI is sprayed, heated or used in a poorly ventilated area. In such cases, or whenever concentrations of MDI exceed the TLV, respiratory protection must be worn. A positive pressure, supplied air respirator or a self-contained breathing apparatus is recommended. In situations where MDI is not sprayed, heated, or used in a poorly ventilated area, and a supplied air or self contained breathing apparatus is unavailable or its use impractical, at least an air purifying respirator equipped with an organic vapor cartridge and particulate pre-filter must be worn. HOWEVER, THIS SHOULD BE PERMITTED ONLY FOR SHORT PERIODS OF TIME (LESS THAN ONE HOUR) AT RELATIVELY LOW CONCENTRATIONS (AT OR NEAR THE TLV). However, due to the poor warning properties of MDI, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use (29 CFR 1910.134).

**Eye:** Liquid chemical goggles. Vapor resistant goggles should be worn when contact lenses are in use. In a splash hazard environment chemical goggles should be used in combination with a full face shield.

**Skin:** Permeation resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that PVA degrades in water. Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area covered by the cream to a minimum.

**Engineering Controls:**

Local exhaust should be used to maintain levels below the TLV whenever MDI is processed, heated or spray applied. Standard reference sources regarding industrial ventilation (i.e. ACGIH industrial ventilation) should be consulted for guidance about adequate ventilation.

**Other Hygienic Practices:**

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of potential exposure. Educate and train employees in the safe use of these devices.

**Monitoring:** Isocyanate exposure levels must be monitored. Monitoring of airborne Isocyanate in the breathing zone of individuals should become part of the overall employee exposure characterization program. Monitoring techniques have been developed by NIOSH and OSHA.

<p><b>5. PROTECTIVE EQUIPMENT AND OTHER CONTROL MEASURES</b> <b>(continued)</b></p>
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**Medical Surveillance:**

Medical supervision of all employees who handle or come in contact with Isocyanate is recommended. These should include preemployment and periodic medical examinations with pulmonary function tests (FEV, FVC, as a minimum). Persons with asthmatic type conditions, chronic bronchitis, other

chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with Isocyanate. Once a person is diagnosed as sensitized to an Isocyanate, no further exposure can be permitted.

## 6. OCCUPATIONAL EXPOSURE LIMITS

<u>SUBSTANCE/CAS NUMBER</u>	<u>EXPOSURE LIMIT</u>
<u>CONCENTRATION</u>	
4,4' - Diphenylmethane Diisocyanate (MDI) 101-68-8	OSHA: .020 ppm Ceiling .200 mg/m <sup>3</sup> Ceiling
Approx. 100%	ACGIH: .005 ppm TWA .051 mg/m <sup>3</sup> TWA

## 6. EMERGENCY AND FIRST AID

- Inhalation:** Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic type symptoms may develop and may be immediate or delayed up to several hours. Consult a physician should this occur.
- Eye Contact:** Flush with large amounts of water, preferably, lukewarm water for at least 15 minutes; holding eyelids open all the time. Refer individual to physician or ophthalmologist for immediate follow-up.
- Skin Contact:** Remove contaminated clothing. Wash affected skin thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures, get under safety shower after removing clothing, then get medical attention. For lesser exposures, seek medical attention if irritation develops or persists after the area is washed.
- Ingestion:** **DO NOT INDUCE VOMITING.** Give 1 to 2 cups of milk or water to drink. Do not give anything by mouth to an unconscious person. Consult a physician.

## 7. EMERGENCY AND FIRST AID (continued)

### EMERGENCY MEDICAL TREATMENT PROCEDURES:

**Inhalation:** This compound is a known pulmonary sensitizer. Treatment is essentially systematic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any Isocyanate.

**Eyes:** Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Work place vapors have produced reversible corneal epithelial edema impairing vision.

**Skin:** This compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as a thermal burn.

**Ingestion:** Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of this compound.

### Detoxification Procedures:

No additional medical information found.

## 8. SPILL AND DISPOSAL

### PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED

Evacuate and ventilate spill area; dike the spill to prevent entry into water system; wear full protective equipment, including respiratory equipment during cleanup. (see section 5). If temporary control of Isocyanate vapor is required, a blanket of protein foam (available at most fire departments) may be placed over the spill. Large quantities may be pumped into closed, but not sealed, containers for disposal. Minor spill: absorb



isocyanates with sawdust or other absorbent, shovel into suitable unsealed containers, transport to well ventilated area (outside) and treat with a neutralizing solution: Mixture of water (80%) with non-ionic surfactant Tergitol TMN-10 (20%) or, water (90%), concentrated ammonia (3-8%) and detergent (2%). Or water and .02-.05% liquid detergent and 3-8% concentrated ammonium hydroxide (5-10% sodium carbonate

#### **WASTE DISPOSAL METHODS**

Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Incineration is the preferred method.

## 8. SPILL AND DISPOSAL (continued)

### EMPTY CONTAINER PRECAUTIONS

Empty containers must be handled with care due to product residue. Decontaminate containers prior to disposal. Empty decontaminated containers should be crushed to prevent reuse. DO NOT HEAT OR CUT EMPTY CONTAINERS WITH ELECTRIC OR GAS TORCH. Gases may be highly toxic.

## 9. COMPONENTS

<u>COMPONENT NAME /CAS NO.</u>	<u>COMPOSITION</u>
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<u>CARCINOGEN**</u>	
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*Polymeric Diphenylmethane Diisocyanate (polymeric MDI) CAS No. 9016-87-9	100%
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\*The specific chemical identity of this component is a trade secret.

\*\*1=NATIONAL TOXICOLOGY PROGRAM

2=INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

3=OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION

4=OTHER

## 10. COMPONENT HEALTH HAZARDS

**COMPONENT:** COMPONENT HEALTH HAZARDS.

See Section 2.

## 11. ADDITIONAL TOXICOLOGICAL INFORMATION

MDI ISOCYANATE	None
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## 12. PHYSICAL AND CHEMICAL DATA

BOILING POINT 694°F	VISCOSITY Approx. 400 CPS	DRY POINT N/D
FREEZING POINT Approx. 60°F	VAPOR PRESSURE <1 0 <sup>-5</sup> MM HG @77°F	VOLATILE CHARACTERISTICS N/D
SPECIFIC GRAVITY 1.23 @72°F	VAPOR SPECIFIC GRAVITY 8.5 (MDI) (AIR = 1)	SOLUBILITY IN WATER Reacts slowly evolving CO2
PH No Data	STABILITY Stable	

## 12. PHYSICAL AND CHEMICAL DATA (continued)

### **APPEARANCE AND ODOR:**

Viscous dark brown liquid

**HAZARDOUS POLYMERIZATION:** May occur; contact with moisture, other materials, which react with isocyanates, or temperatures above 400°F may cause polymerization.

**CONDITIONS TO AVOID:** Temperatures over 400°F. Contamination with water.

**MATERIALS TO AVOID:** Water, amines, strong bases, alcohols, other active hydrogen sources, amines, alkalies, acids, and metal compounds. Will cause some corrosion to copper alloys and aluminum.

**HAZARDOUS DECOMPOSITION PRODUCTS:** By heat and fire: carbon monoxide, oxides of nitrogen, traces of hydrogen cyanide, ammonia, MDI vapors.

## 13. HAZARDS RATING INFORMATION

**NATIONAL FIRE PROTECTION ASSOCIATION**

<u>HEALTH</u>	<u>FLAMMABILITY</u>	<u>REACTIVITY</u>	<u>OTHER</u>
3	1	1	
0=Insignificant	1=Slight	2=Moderate	3=High 4=Extreme

**HAZARDOUS MATERIALS INFORMATION SYSTEM (HMIS)**

<u>HEALTH</u>	<u>FLAMMABILITY</u>	<u>REACTIVITY</u>
3	1	1
0=Minimal	1=Slight	2=Moderate 3=Serious 4=Severe

**14. ADDITIONAL PRECAUTIONS**

**STORAGE TEMPERATURE:** 45°F (Min) 104°F (Max)

**SHELF LIFE:** 6 Months at 77°F

**SPECIAL SENSITIVITY:** If container is exposed to high heat, 400°F, it can be pressurized and possibly rupture. MDI reacts slowly with water to form CO<sup>2</sup> gas. This gas can cause sealed containers to expand and possibly rupture.

**HANDLING AND STORAGE PRECAUTIONS:** Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Avoid contact with skin and eyes. Do not breathe aerosols or vapors. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent chronic overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to relatively high concentrations or upon repeated inhalation exposures to lower concentrations. Exposure to vapors of heated MDI can be extremely dangerous. Employee education and training in the safe use and handling of this compound are required under the OSHA Hazard Communication Standard.

**DECONTAMINATION PROCEDURES:** A neutralizing solution may be made by any of the following: Mixture of water (80%) with non-ionic surfactant Tergitol TMN-10 (20%) or, water (90%), concentrated ammonia (3-8%) and detergent (2%). Or water and .02-.05% liquid detergent and 3-8% concentrated ammonium hydroxide (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Add about 10 parts of neutralizer per part of Isocyanate, while mixing. Allow to stand uncovered for 48 hours to let CO<sup>2</sup> escape. Cleanup: Decontaminate floor with decontamination solution letting stand for at least 15 minutes.

## **15. REGULATORY INFORMATION**

### **FEDERAL REGULATIONS:**

#### **OSHA**

This product is hazardous under the criteria of Federal OSHA Hazard Communication Standard 29 CFR 1910.1200

#### **TOXIC SUBSTANCE CONTROL ACT (TSCA) STATUS**

On TSCA inventory

#### **CERCLA REPORTABLE QUANTITY**

None

#### **SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1988(SARA), TITLE III**

##### **SECTION 302 Extremely Hazardous Substance**

None

##### **SECTION 311/312 HAZARD CATEGORIES**

Immediate health hazard; delayed health hazard; reactive hazard.

##### **SECTION 313 TOXIC CHEMICALS**

100% Diisocyanate compounds

<b>15. REGULATORY INFORMATION (continued)</b>
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**RCRA STATUS:** This product is not listed as a hazardous waste. To the best of our knowledge, this product does not meet the criteria of a hazardous waste if discarded in its purchased form. However, under RCRA, it is the responsibility of the user of the products to determine, at the time of disposal, whether a product meets any of the criteria for a hazardous waste. This is because product use, transformations, mixtures, processes, etc., may render the resulting material hazardous, under the criteria of ignitability, corrosivity, reactivity, and toxicity characteristics under the new Toxicity Characteristics Leaching Procedure (TLCP) 40 code of Federal Regulations 261.20-24.

**DEPARTMENT OF TRANSPORTATION (DOT):** Other than the normal shipping instructions and information given in this MSDS, this material is regulated by DOT hazard class; 6.1 packaging class 3.

**STATE REGULATIONS:** The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on the regulatory requirements you should contact the appropriate agency in your state.

**COMPONENT NAME**

**/CAS NUMBER**

**CONCENTRATION STATE**

**CODE**

4,4'-Diphenylmethane Diisocyanate (MDI)

Approx  
100%

AL,  
FL, IL, MA,  
RI, NJ 1,  
NJ4, CN2

**CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1988 - PROPOSITION 65:**

This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California proposition 65 at levels which would be subject to the proposition.

## **EXPLANATIONS OF STATE CODES**

- FL = Florida substance list.
- IL = Illinois toxic substances list.
- MA = Massachusetts hazardous substance list.
- NJ 1 = New Jersey hazardous substance list.
- NJ4 = New Jersey other- included in 5 predominant ingredients >1%.
- NJTSRN = New Jersey trade secret registry number.
- PA1 = Pennsylvania hazardous substance list.
- PA3 = Pennsylvania non-hazardous present at 3% or greater.
- RI = Rhode Island list of designated substances.
- CN2 = Canada WHMIS ingredient disclosure list over 0.1%

<b>16. LABEL INFORMATION</b>
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**MANUFACTURE SPRAYROQ, INC.**

**Telephone Numbers:**

**R:**

**4707 ALTON COURT**

**800-424-9300**

**CHEMTREC**

**BIRMINGHAM, AL 3510**

**205-957-0020**

**SPRAYROQ**

**OTHER COMPANY NAMES:** None

**USE STATEMENT:** For industrial use only

**HEALTH HAZARDS:** This product causes irritation to eyes, respiratory system, skin, and digestive system if swallowed. This product is known to be a sensitizer of the respiratory system.

**PRECAUTIONARY MEASURES:**

- Do not cut or weld on or near this container. Do not pressurize.
- Do not handle near heat, sparks, or open flames.

- Avoid contact with eyes, skin and clothing.
- Wash thoroughly after handling.
- Before handling and use, read and understand the Material Safety Data Sheet.
- Obey all label warnings, especially during use.
- Refer to all federal, state, and local regulations prior to disposition of container and used contents by reuse, recycling, or disposal.

**DOT INFORMATION:** UN/NA ID NO. UN2489

**DOT HAZARD CLASS:** None

**DOT PLACARD QUANTITY:** None

**DOT HAZARDOUS MATERIALS PROPER SHIPPING NAME:**

None

**HAZARD LABELS:** None

**HAZARD PLACARD:** None

<b>17. GENERAL COMMENTS</b>
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Some of the information presented and conclusions drawn are from sources other than direct test data on the material itself.

**NOTES:** N/A=not available

The information in the MSDS was obtained from sources which we believe are reliable.

**HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS CORRECTNESS.**

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. **FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.**

June 2004