

# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### Product Identification

Product Name: OlyBond 500 Green, Part 1 (Dark Brown)  
Product Number: pails  
Chemical Name: Polymeric MDI  
Chemical Family: POLYMETHYLENE POLYPHENYLISOCYANATE  
CAS Number: Mixture

### Company Identification

ERSystems- Elastomeric Roofing Systems, Inc.  
6900 Bleck Dr  
Rockford, MN 55373 USA  
1-800-403-7747 (For product information)  
1-800-535-5053 Infotrac (For emergencies)

### **SPECIAL NOTES:**

Part A of two part polyurethane system. Polymethylene polyphenylisocyanate.

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

100.0% OlyBond 500 Green, Part 1 (Dark Brown)

CONTAINING:

### HAZARDOUS AND/OR REGULATED COMPONENTS

| <u>Chemical Name</u>              | <u>Amount</u> | <u>CAS Number</u> |
|-----------------------------------|---------------|-------------------|
| 4,4'-DIPHENYLMETHANE DIISOCYANATE | 38.0 %        | 101-68-8          |

### NON-HAZARDOUS COMPONENTS

| <u>Chemical Name</u> | <u>Amount</u> | <u>CAS Number</u> |
|----------------------|---------------|-------------------|
| POLYMERIC MDI        | < 55.0 %      | 9016-87-9         |
| MDI MIXED ISOMERS    | < 10.0 %      | 26447-40-5        |

(See Section 8 for exposure guidelines)

(See Section 15 for regulatory information)



(section 2 continued)

**HAZARDS DISCLOSURE**

This product contains hazardous materials as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

As defined under Sara 311 and 312, this product contains materials that are hazards.

**3. HAZARDS IDENTIFICATION**

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***** EMERGENCY OVERVIEW *****
*
* CAUTION
*
* Contains Diphenylmethane Diisocyanate. Inhalation
* of MDI mists or vapors may cause respiratory
* irritation, breathlessness, chest discomfort and
* reduced pulmonary function. Overexposure well
* above the PEL may result in bronchitis, bronchial
* spasms and pulmonary edema. Long-term exposure to
* isocyanates has been reported to cause lung damage,
* including reduced lung function which may be
* permanent. Acute or chronic overexposure to
* isocyanates may cause sensitization in some
* individuals, resulting in allergic respiratory
* reactions including wheezing, shortness of breath,
* and difficulty breathing.
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HMIS Rating - Health: *2
               Flammability: 1
               Reactivity: 1

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NFPA/HMIS Definitions: (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

**POTENTIAL HEALTH EFFECTS**



(section 3 continued)

**EYE:**

Contact may cause eye irritation. May result in corneal opacity (clouding of the eye surface).

**SKIN:**

Causes skin burns, irritation, and possible allergic reaction. In those who have developed skin sensitization, these symptoms can develop as a result of contact with a very small amount of the liquid material.

**INHALATION:**

Inhalation of MDI vapors may cause irritation of the mucous membranes of the nose, throat or trachea, breathlessness, chest discomfort, difficult breathing and reduced pulmonary function.

**INGESTION:**

Harmful if swallowed. Can burn mouth, throat, and stomach. Gastrointestinal symptoms include nausea, vomiting and abdominal pain.

**CHRONIC EFFECTS:**

As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the PEL/TLV. These symptoms, which include chest tightness, wheezing, cough, shortness of breath, or asthmatic attack, could be immediate or delayed up to several hours after exposure. Chronic overexposure to isocyanates has also been reported to cause lung damage, including a decrease in lung function, which may be permanent. Sensitization may be either temporary or permanent. Prolonged contact can cause reddening, swelling, rash, scaling, or blistering. In those who have developed skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material.

**REPRODUCTIVE HAZARDS:**

No birth defects or teratogenic effects were reported in a teratology study with rats exposed to 1, 4 and 12mg/m<sup>3</sup> polymeric MDI for 6 hr/day on days 6-15 of gestation. Embryotoxicity and fetotoxicity was reported at the top dose in the presence of maternal toxicity.

**CARCINOGENICITY INFORMATION:**

Listed by IARC and NTP as a carcinogen.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:**

Individuals who are sensitized to isocyanates and those with preexisting lung disease or conditions, including non-specific bronchial hyperreactivity or asthma, must avoid all exposure to isocyanates.



#### 4. FIRST AID MEASURES

**EYE CONTACT FIRST AID:**

After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get immediate medical attention.

**SKIN CONTACT FIRST AID:**

Remove contaminated clothing and shoes. Wash affected area immediately with large amounts of soap and water. Get medical attention immediately.

**INHALATION FIRST AID:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get immediate medical attention.

**INGESTION FIRST AID:**

If swallowed, immediately give 2 glasses of water. Do not induce vomiting. Contact a physician. Never give anything by mouth to an unconscious person. Get immediate medical attention.

**NOTES TO PHYSICIAN:**

There is no antidote to counteract the effects of MDI. Care should be supportive and treatment should be based on the judgment of the physician in response to the action of the patient.

#### 5. FIRE FIGHTING MEASURES

**FLAMMABLE PROPERTIES**

COC Flash Point: 220 C (428.0 F)  
Autoignition Temperature: N/A

**FLAMMABLE LIMITS IN AIR**

LEL: N/A  
UEL: N/A

**FLAMMABLE PROPERTIES:**

Full emergency equipment with self contained breathing apparatus and full protective clothing should be worn. At temperatures greater than 400 F material may polymerize causing pressure build up in closed containers. Explosive rupture is possible. Use cold water to cool containers exposed to fire.

**EXTINGUISHING MEDIA:**

Water, carbon dioxide, foam or dry powder.



(section 5 continued)

**FIRE & EXPLOSION HAZARDS:**

Material will burn in a fire.

**FIRE FIGHTING INSTRUCTIONS:**

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

**MISCELLANEOUS:**

Reacts with water to form carbon dioxide gas, which may create excessive pressure in containers. Reacts exothermically with polyol and alcohols. Reacts exothermically and possibly violently with acids, amines and alkaline solutions.

**6. ACCIDENTAL RELEASE MEASURES**

**SAFEGUARDS (PERSONNEL):**

Evacuate non-emergency personnel to a safe area. Avoid breathing vapor. Ventilate spill area. Wear safety goggles. Wear appropriate personal protective equipment.

**INITIAL CONTAINMENT:**

Contain spilled material. Absorb spills with inert material. Place in closed containers but do not seal.

**LARGE SPILLS PROCEDURE:**

Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Place in closed containers but do not seal. Neutralize spill with mixture of 90% water, 3-8% ammonia and 2-7% detergent. Add at a 10 to 1 ratio and let stand for 48 hrs allowing CO<sub>2</sub> to escape.

**MISCELLANEOUS:**

Do not discharge into drains/surface waters/groundwater.

**7. HANDLING AND STORAGE**

**RECOMMENDED STORAGE TEMPERATURE**

Minimum: 15.6 C (60.1 F)  
Maximum: 26.7 C (80.1 F)

**SHELF LIFE: (in original, sealed containers)**

6 months @ 26.7 C



(section 7 continued)

**HANDLING (PERSONNEL):**

Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash hands thoroughly after handling. Do not reuse this container.

**HANDLING (PHYSICAL ASPECTS):**

Provide appropriate ventilation. Close container after each use. Keep container closed to avoid contamination. Keep out of reach of children.

**STORAGE PRECAUTIONS:**

Avoid extreme temperatures. Keep container closed when not in use. Store in a cool dry place.

**SPECIAL SENSITIVITY:**

All handling equipment should be electrically grounded.

**MISCELLANEOUS:**

Protect from moisture.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**ENGINEERING CONTROLS:**

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**EYE / FACE PROTECTION REQUIREMENTS:**

Wear safety glasses. A respiratory protection program that meets OSHA's 29 CFR 1910-134 and ANSI Z88-2 requirements must be followed whenever workplace conditions warrant a respirator's use.

**SKIN PROTECTION REQUIREMENTS:**

Selection of specific items such as gloves, boots, apron or full-body suit will depend on operation.

**RESPIRATORY PROTECTION REQUIREMENTS:**

When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

**EXPOSURE GUIDELINES:**

No Information Available.



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## 9. PHYSICAL AND CHEMICAL PROPERTIES

FORM .....: Liquid  
COLOR .....: Dark Brown  
ODOR .....: Aromatic  
BOILING POINT .....: 200 C @ 5 mm Hg  
VAPOR PRESSURE .....: 0.00001 mm Hg @ 20 C  
SOLUBILITY IN WATER .....: Reacts with water  
SPECIFIC GRAVITY .....: 1.22 (Water = 1)  
BULK DENSITY .....: 10.16 lb/USg  
MELTING/FREEZING POINT ...: 3 C  
VISCOSITY .....: 200 cps

## 10. STABILITY AND REACTIVITY

**STABILITY:**

Stable.

**POLYMERIZATION:**

May occur.

**INCOMPATIBILITY WITH OTHER MATERIALS:**

Reacts with water, with formation of carbon dioxide. Risk of bursting. Reacts with alcohols, acids, alkalis, amines. Risk of exothermic reaction. Risk of violent reaction. Contact with certain rubbers and plastics can cause brittleness of the substance with subsequent loss in strength.

**DECOMPOSITION:**

Hazardous decomposition products: carbon monoxide, hydrogen cyanide, nitrogen oxides, aromatic isocyanates, gases/vapors.

**CONDITIONS TO AVOID:**

Avoid moisture.

## 11. TOXICOLOGICAL INFORMATION

**ACUTE ORAL EFFECTS:**

LD50/rat: > 10,000 mg/kg. Practically nontoxic.

**ACUTE INHALATION EFFECTS:**

LD50/rat: > 2.240 mg/l / 1h

Moderately toxic.



**12. ECOLOGICAL INFORMATION**

No information available.

**13. DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL:**

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

**CONTAINER DISPOSAL:**

Steel drums must be emptied and can be sent to a licensed drum reconditioner for reuse, a scrap metal dealer, or an approved landfill. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

**14. TRANSPORTATION INFORMATION**

PRODUCT LABEL ...: OlyBond 500 Green, Part 1 (Dark Brown)

**15. REGULATORY INFORMATION**

**Canadian Disclosure List**

4,4'-DIPHENYLMETHANE DIISOCYANATE (101-68-8)

**Title V**

4,4'-DIPHENYLMETHANE DIISOCYANATE (101-68-8)

**SC Toxic Air Pollutants List**

4,4'-DIPHENYLMETHANE DIISOCYANATE (101-68-8)

**16. OTHER INFORMATION**

PREPARED BY .....: Laura Vollenweider  
APPROVED BY .....: Laura Vollenweider  
TITLE .....: Chemist  
APPROVAL DATE .....: December 11, 2007  
SUPERCEDES DATE ...: New  
MSDS NUMBER .....: foam00  
RTN NUMBER .....: 00000139 (Official Copy)





(section 16 continued)

**ADDITIONAL INFORMATION:**

The data in this Material Safety Data Sheet relates only to the specific material designated herein.

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To the best of our knowledge, the information contained in this MSDS is accurate. It is intended to assist the user in his evaluation of the product's hazards, and safety precautions to be taken in its use. The data in this MSDS relate only to the specific material designated herein. We do not assume liability for the use of, or reliance on this information, nor do we guarantee its accuracy or completeness.

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**END OF MSDS**  
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# MATERIAL SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### Product Identification

Product Name: OlyBond 500 Green Part 2 (Green)  
Product Number: pails, drums, totes  
Chemical Name: Polyurethane System Resin  
Component  
Chemical Family: NA  
CAS Number: Blend

### Company Identification

ERSystems- Elastomeric Roofing Systems, Inc.  
6900 Bleck Dr.  
Rockford, MN 55373 USA  
1-800-403-7747 (For product information)  
1-800-535-5053 Infotrac (For emergencies)

### **SPECIAL NOTES:**

Polyurethane foam system resin component. Part B (Part 2) of a two part system.

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

100.0% OlyBond 500 Green Part 2 (Green)

CONTAINING:

### HAZARDOUS AND/OR REGULATED COMPONENTS

| <u>Chemical Name</u> | <u>Amount</u> | <u>CAS Number</u> |
|----------------------|---------------|-------------------|
| ETHYLENE OXIDE       | < 0.1 %       | 75-21-8           |

### NON-HAZARDOUS COMPONENTS

| <u>Chemical Name</u> | <u>Amount</u> | <u>CAS Number</u> |
|----------------------|---------------|-------------------|
| DIETHYLENE GLYCOL    | < 10.0 %      | 111-46-6          |
| DIPROPYLENE GLYCOL   | < 10.0 %      | 25265-71-8        |

(See Section 8 for exposure guidelines)

(See Section 15 for regulatory information)



### 3. HAZARDS IDENTIFICATION

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***** EMERGENCY OVERVIEW *****
*
* CAUTION *
*
* May be harmful if swallowed. *
*
*****
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HMIS Rating - Health: 1  
Flammability: 0  
Reactivity: 0  
Personal Protection Index: S

#### POTENTIAL HEALTH EFFECTS

**EYE:**  
Contact may cause eye irritation and injury.

**SKIN:**  
Not expected to be a skin irritant. A single, prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

**INHALATION:**  
Avoid breathing vapors or mists. Prolonged or excessive inhalation may cause respiratory tract irritation.

**INGESTION:**  
Harmful if swallowed.

### 4. FIRST AID MEASURES

**EYE CONTACT FIRST AID:**  
After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention if irritation develops or persists.

**SKIN CONTACT FIRST AID:**  
Get medical attention if irritation develops or persists.

**INGESTION FIRST AID:**  
If swallowed get immediate medical attention. Do not induce vomiting.



## 5. FIRE FIGHTING MEASURES

### FLAMMABLE PROPERTIES

PMCC Flash Point: 190.6 C (375.1 F)  
Autoignition Temperature: N/A

### FLAMMABLE LIMITS IN AIR

LEL: N/A  
UEL: N/A

### FLAMMABLE PROPERTIES:

Full emergency equipment with self contained breathing apparatus and full protective clothing should be worn.

### EXTINGUISHING MEDIA:

Water, carbon dioxide, foam or dry powder. Do not use a direct water stream.

### FIRE FIGHTING INSTRUCTIONS:

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

## 6. ACCIDENTAL RELEASE MEASURES

### SAFEGUARDS (PERSONNEL):

Isolate spill area. May be a slipping hazard.

### INITIAL CONTAINMENT:

Contain spilled material. Absorb spills with inert material.

### LARGE SPILLS PROCEDURE:

Absorb spill with inert material (e g, dry sand or earth), then place in a chemical waste container. Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

### SMALL SPILLS PROCEDURE:

Absorb spills with inert material. Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

## 7. HANDLING AND STORAGE



(section 7 continued)

**RECOMMENDED STORAGE TEMPERATURE**

Minimum: 15.6 C (60.1 F)

Maximum: 26.7 C (80.1 F)

**SHELF LIFE: (in original, sealed containers)**

18 months @ 26.7 C

**HANDLING (PERSONNEL):**

Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling.

**HANDLING (PHYSICAL ASPECTS):**

Provide appropriate ventilation. Close container after each use. Keep container closed to avoid contamination. Keep out of reach of children.

**STORAGE PRECAUTIONS:**

Keep away from heat and flame. Avoid extreme temperatures. Keep container closed when not in use. Store in a cool dry place.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**EYE / FACE PROTECTION REQUIREMENTS:**

Wear safety glasses. A respiratory protection program that meets OSHA's 29 CFR 1910-134 and ANSI Z88-2 requirements must be followed whenever workplace conditions warrant a respirator's use.

**SKIN PROTECTION REQUIREMENTS:**

Selection of specific items such as gloves, boots, apron or full-body suit will depend on operation. Wash hands thoroughly after handling. Product produces slippery conditions.

**RESPIRATORY PROTECTION REQUIREMENTS:**

When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

**EXPOSURE GUIDELINES:**

**ETHYLENE OXIDE**

Recommended Exposure Limit: 1 ppm

Odor Threshold: 257-690 ppm

Immediate Lethal Dosage: 800 ppm



**9. PHYSICAL AND CHEMICAL PROPERTIES**

FORM .....: Liquid  
COLOR .....: Dark Green  
ODOR .....: Slight, sweet odor  
BOILING POINT .....: NA F  
SOLUBILITY IN WATER ...: Slight  
BULK DENSITY .....: 8.5  
VISCOSITY .....: 400 cps

**10. STABILITY AND REACTIVITY**

**STABILITY:**

Stable. Do not heat.

**DECOMPOSITION:**

Decomposition will not occur if handled and stored properly.

**11. TOXICOLOGICAL INFORMATION**

No information available.

**12. ECOLOGICAL INFORMATION**

No information available.

**13. DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL:**

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

**14. TRANSPORTATION INFORMATION**

PRODUCT LABEL .....: OlyBond 500 Green Part 2 (Green)  
D.O.T. SHIPPING NAME .....: N/A  
TECHNICAL SHIPPING NAME ...: N/A  
D.O.T. HAZARD CLASS .....: N/A  
UN NUMBER .....: N/A



**15. REGULATORY INFORMATION**

**Clean Air Act - Section 112**  
ETHYLENE OXIDE (75-21-8)

**Title V**  
ETHYLENE OXIDE (75-21-8)

**CA Proposition 65**  
ETHYLENE OXIDE (75-21-8)

**SC Toxic Air Pollutants List**  
ETHYLENE OXIDE (75-21-8)

**16. OTHER INFORMATION**

REASON FOR ISSUE ...: New Product  
PREPARED BY .....: Andrew Luu  
APPROVED BY .....: Laura Vollenweider  
TITLE .....: Chemist  
APPROVAL DATE .....: August 14, 2007  
SUPERCEDES DATE ....: New  
RTN NUMBER .....: 00001237 (Official Copy)

**ADDITIONAL INFORMATION:**

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**END OF MSDS**  
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