



# MATERIAL SAFETY DATA SHEET

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**Uraseal Product Codes: ES137S, ES200S, ES200SV, ES1150 - Part A**

## Section I - Product Identification

URASEAL PRODUCT ID:  
**ES137S Part-A; ES200S Part-A;**  
**ES200SV Part-A; ES1150 Part-A**

FORMULA:  
 Not applicable to mixtures

CAS Number: **9016-87-9**

CHEMICAL NAME & SYNONYMS:  
 Polymeric Diphenylmethane Diisocyanate  
 (MDI Mixture)

TRADE NAME & SYNONYMS:  
 RU2161

CHEMICAL FAMILY:  
 Aromatic Isocyanate

<u>HAZARD TYPE</u>
C = Carcinogen
H = OSHA Hazardous
P = CA Prop 65 (Carc.)
S = PA Special Hazard
A = SARA Title III, Sec. 313
N = Not hazardous by any listed hazard type

## Section II - Hazardous Ingredients

**\* Neither MDI nor polymeric MDI are listed by the NTP, IARC or are regulated by OSHA as carcinogens.**

HAZARDOUS MATERIAL	% by Wt.	PEL MEASUREMENT	CAS NBR	HAZARD TYPE
4,4'-Diphenylmethane Diisocyanate	1-35	OSHA: 0.020 ppm Ceiling 0.200 mg/m <sup>3</sup> ACGIH: 0.005 ppm TWA 0.051 mg/m <sup>3</sup> TWA	101-68-8	H, A
Diphenylmethane Diisocyanate	1-10	OSHA: Not Established ACGIH: Not Established	26447-40-5	H
Higher Oligomers of MDI	45-55	OSHA: Not Established	9016-87-9	H

## Section III - PHYSICAL DATA

BOILING PT: at 5 mm Hg	406° F	SPECIFIC GRAVITY: at 77° Fahrenheit	1.24
VAPOR PRESSURE (mm Hg): mm Hg at 77° Fahrenheit	<0.00001	PCT VOLATILE BY VOL:	Negligible
VAPOR DENSITY (AIR=1):	8.5 (MDI)	EVAPORATION RATE:	N.E.

SOLUBILITY IN WATER: Not soluble; reacts slowly with water to release CO<sub>2</sub>

APPEARANCE AND ODOR: Dark brown liquid with slightly musty odor

*N.A. = Not Applicable*

*N.E. = Not Established*

## Section IV - Fire & Explosion Data

FLASH POINT: 390° F METHOD USED: PMCC  
LOWER EXPLO. LEVEL: Unknown UPPER EXPLO. LEVEL: Unknown

### EXTINGUISHING MEDIA:

Dry chemical, carbon dioxide, high expansion chemical foam, and water

### SPECIAL FIRE FIGHTING PROCEDURES:

Full emergency equipment with self-contained breathing apparatus. During a fire, MDI vapors and other irritating, thermal decomposition or combustion may generate highly toxic gases.

### UNUSUAL FIRE AND EXPLOSION HAZARDS:

At temperatures greater than 400 degrees Fahrenheit, polymeric MDI can polymerize and decompose which can cause pressure build-up in closed containers. Explosion rupture is possible. Therefore use cold water to cool fire-exposed containers.

## Section V - Health Hazard Data

PERMISSIBLE EXPOSURE LEVEL: 0.02 ppm (0.2 mg/m<sup>3</sup>) ceiling for MDI

ANIMAL TOXICITY DATA (Data is for monomeric and polymeric MDI)

ACUTE TOXICITY-ORAL, LD50 (ingestion): Greater than 15 g/kg (rat)

DERMAL, LD50 (SKIN CONTACT): Greater than 6.2 g/kg (rabbits)

INHALATION, LC50 (4 HR): Approximately 370 - 490 mg/m<sup>3</sup> for an aerosol of polymeric MDI (Rat).

AQUATIC LC50 (24 HR): Greater than 500 mg/l (daphnia magna, Limnea stagnalis and Zebra Fish).

EYE EFFECT: Slight to moderate irritation. SKIN EFFECTS: Slight to moderate irritant.

SENSITIZATION: Dermal sensitizer for guinea pigs, rabbits and dogs. MDI is a known pulmonary and dermal sensitizer in humans. Evidence indicates cross-sensitization between different types of diisocyanates can occur.

OTHER: No conclusive evidence has been developed to indicate that polymeric MDI is carcinogenic, mutagenic, teratogenic or that it causes reproductive effects in animals or humans. However, MDI has been reported by NIOSH to be mutagenic to Salmonella typhimurium bacteria in the presence of a mammalian liver activating system (commonly called the Ames test). There is not full agreement in the scientific community on the significance of the Ames test results and their relationship to human safety in assessing the risk of cancer in man. Preliminary steps for an animal lifetime inhalation study on polymeric MDI have been performed.

### HUMAN EFFECTS OF OVEREXPOSURE:

INHALATION: Inhalation of MDI vapors or aerosols in concentrations above 0.02 ppm can produce irritation of the mucous membranes in the respiratory tract, running nose, sore throat, productive cough and a reduction in lung function. Extensive exposures to concentrations well above the TLV could lead to bronchitis, bronchial spasm and pulmonary edema. These effects are usually reversible. However due to low volatility, high exposures are not anticipated except if the material is overheated or sprayed as an aerosol into the air. Hypersensitivity pneumonitis has also been reported. Another type of response is hyperreactivity or hypersensitization. Persons with a preexisting unspecific bronchial hyperreactivity or persons with a specific isocyanate hypersensitivity (as a result of previous repeated overexposure or a single large dosage) will respond to small isocyanate concentrations at levels well below the TLV of 0.02 ppm. Symptoms could be immediate or delayed and include chest tightness, respiratory distress or asthmatic attack.

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**SKIN:** Polymeric MDI reacts with skin protein and tissue moisture and can cause localized irritation as well as discoloration. Prolonged contact could produce reddening, swelling, or blistering and, in some individuals, skin sensitization resulting in dermatitis.

**EYES:** Liquid, vapors, or aerosols are irritating to the eyes 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:** Ingestion could result in irritation and some corrosive action in the mouth, stomach tissue and digestive tract. However, it is not considered a common occupational route of exposure.

**EMERGENCY AND FIRST AID PROCEDURES:**

*If this product is used in accordance with the directions and recommendations on the package labeling and this Material Safety Data Sheet, chance of exposure to any chemical in this kit is virtually eliminated. First aid measures are provided only as a reference in the event of intentional misuse or unforeseeable event.*

**EYE CONTACT:** Flush with water while occasionally lifting eyelids and obtain medical attention.

**SKIN CONTACT:** Remove contaminated clothing. Wash affected areas thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. **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 to several hours. Treatment is essentially symptomatic. **INGESTION:** Do not induce vomiting. Give victim 250 ml of milk or water to drink. **DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.** Consult a physician. **NOTE TO PHYSICIAN:** Medical supervision of all employees who handle or come in contact with polymeric MDI is recommended. This should include preplacement and periodic medical examinations with respiratory function tests (FEV, EVC 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 MDI. Once a person is diagnosed as sensitized to MDI no further exposure can be permitted.

**Section VI - Reactivity Data**

**STABILITY:** Stable

**CONDITIONS TO AVOID:** Contamination with water.

**INCOMPATIBILITY (MATERIALS TO AVOID):**

Water, amines, strong bases, alcohols. Will cause some corrosion to copper alloys and aluminum.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

By high heat and fire: carbon monoxide, oxides of nitrogen, traces of HCN, MDI.

**HAZARDOUS POLYMERIZATION:**

May occur if in contact with moisture or other materials which react with isocyanates. May occur at temperatures over 400<sup>o</sup> Fahrenheit.

**Section VII - Spill or Leak Procedures**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED -**

Cover the spill with sawdust, vermiculite, Fuller's earth or other absorbent material. Pour decontamination solution over spill area and allow to react for at least 10 minutes. Collect material in open containers and add further amounts of decontamination solution. Remove containers to safe place, cover loosely, and allow to stand for 24 to 48 hours. Wash down spill area with decontamination solution. Respiratory protection is recommended during spill clean up.

*N.A. = Not Applicable*

*N.E. = Not Established*

**DISPOSAL METHOD -**

Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue. Decontaminate containers prior to disposal. **DO NOT HEAT OR CUT EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH.**

**Section VIII - Special Protection Information**

**RESPIRATORY PROTECTION (SPECIFY TYPE):** Use an air-supplied respirator for levels equal to or above the PEL.

**VENTILATION:** Local exhaust should be used to maintain levels below the PEL.

**PROTECTIVE GLOVES:** Use permeation resistant gloves.

**EYE PROTECTION:** Use splash-proof chemical resistant goggles.

**OTHER PROTECTIVE MEASURES:** Educate and train employees in safe use of product and personal protective equipment. Follow all label instructions and cautions.

**Section IX - Special Precautions**

**PRECAUTIONS TO BE TAKEN IN STORAGE AND HANDLING:** Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

**OTHER PRECAUTIONS:** Avoid contact with skin and eyes. Keep away from food. Do not breathe vapors. Follow all container label instructions.

**OTHER HYGIENIC AND GOOD WORK PRACTICES:** Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing and wash it thoroughly before reuse. Shower after work using plenty of soap and water.

**Section X - Federal Regulatory Information**

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

**TSCA STATUS :** On TSCA Inventory

**CERCLA REPORTABLE QUANTITY:** 1 lb. for 4,4'-Diphenylmethane Diisocyanate, CAS# 101-68-8.

**SARA TITLE III:**

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES - None

SECTION 311/312 HAZARD CATEGORIES - Immediate Health Hazard, Delayed Health Hazard, Reactive Hazard.

SECTION 313 TOXIC CHEMICALS - 4,4'-Diphenylmethane Diisocyanate, CAS# 101-68-8; Upper Bound 55%.

*N.A. = Not Applicable*

*N.E. = Not Established*

RCRA STATUS: MDI is not listed as a hazardous waste. To the best of our knowledge, MDI does not meet the criteria of a hazardous waste if discarded in its purchased form.

**Other Information:**

HMIS RATINGS: Health-1 Flammability-1 Reactivity-1

0=Minimal 1=Slight 2=Moderate 4=Extreme

*The information and recommendations contained herein are based upon data believed to be correct. However, since much of the information has been received from sources outside our company, we cannot guarantee its accuracy or completeness. Health and safety precautions contained within this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this data in order to comply with all applicable laws and regulations. Additionally, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.*

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**Uraseal Product Codes: ES137S, ES200S, ES200SV, ES1150 - Part B**

## Section I - Product Identification

URASEAL PRODUCT ID:  
ES137S Part-B; ES200S Part-B;  
ES200SV Part-B; ES1150 Part-B

FORMULA:  
Not applicable to mixtures

CAS Number: Not applicable to mixtures

CHEMICAL NAME & SYNONYMS:  
Proprietary Polyol Blend

TRADE NAME & SYNONYMS:  
UR0126

CHEMICAL FAMILY:  
Polyol Compounds

### HAZARD TYPE

C = Carcinogen  
H = OSHA Hazardous  
P = CA Prop 65 (Carc.)  
S = PA Special Hazard  
A = SARA Title III, Sec. 313  
N = Not hazardous by any listed hazard type

## Section II - Hazardous Ingredients

*This product contains no ingredients at or greater than 1% that are considered hazardous by OSHA and no ingredients at or greater than 0.1% that are considered carcinogens by any regulatory agency.*

## Section III - PHYSICAL DATA

BOILING PT:	N.E.	SPECIFIC GRAVITY:	1.0
VAPOR PRESSURE (MM HG):	N.E.	PCT VOLATILE BY VOL:	N.E.
VAPOR DENSITY (AIR=1):	N.E.	EVAPORATION RATE:	N.E.
SOLUBILITY IN WATER:	N.E.		

APPEARANCE AND ODOR: Black liquid with castor oil odor

#### Section IV - Fire & Explosion Data

FLASH POINT > 300° F METHOD USED: COC  
LOWER EXPLO. LEVEL: Unknown UPPER EXPLO. LEVEL: Unknown  
EXTINGUISHING MEDIA: Water spray, dry chemical, foam or carbon dioxide  
SPECIAL FIRE FIGHTING PROCEDURES: N.E.  
UNUSUAL FIRE AND EXPLOSION HAZARDS: N.E.

#### Section V - Health Hazard Data

THRESHOLD LIMIT VALUE: N.E.  
EFFECT OF OVEREXPOSURE: N.E.

##### *EMERGENCY AND FIRST AID PROCEDURES*

SKIN: Wash thoroughly with soap and water.

EYES: Flush with water while occasionally lifting eyelids and obtain medical attention.

INGESTION: Administer milk. Consult physician before administering copious lavage. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

INHALATION: Remove to fresh air

#### Section VI - Reactivity Data

STABILITY: Stable CONDITIONS TO AVOID: N.E.  
INCOMPATIBILITY (MATERIALS TO AVOID): N.E.  
HAZARDOUS DECOMPOSITION PRODUCTS: N.E.  
HAZARDOUS POLYMERIZATION: Will Not Occur  
CONDITIONS TO AVOID: N.E.

#### Section VII - Spill or Leak Procedures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:  
Clean up spills with absorbent materials. Dispose of as below.

WASTE DISPOSAL METHOD: Disposal should be in accordance with federal, state, and local regulations. Incineration is the preferred method of disposal.

**Section VIII - Special Protection Information**

RESPIRATORY PROTECTION (SPECIFY TYPE) - N.E.

VENTILATION - General

PROTECTIVE GLOVES - Permeation resistant gloves.

EYE PROTECTION – Use splash-proof chemical resistant goggles.

OTHER PROTECTIVE EQUIPMENT - Educate and train employees in safe use of product and personal protective equipment. Follow all label instructions and cautions.

OTHER HYGIENIC AND GOOD WORK PRACTICES - Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing and wash it thoroughly before reuse. Shower after work using plenty of soap and water. No special work practices are needed beyond the above recommended actions under anticipated conditions of normal use.

**Section IX - Special Precautions**

PRECAUTIONS TO BE TAKEN IN STORAGE AND HANDLING: N.E.

OTHER PRECAUTIONS: Follow all container label instructions.

**Section X - Additional Federal Regulatory Information**

TSCA STATUS: All ingredients for this material are listed on the TSCA Inventory or are exempt from listing.

**Other Information:**

HMIS RATINGS:    Health-1        Flammability-0        Reactivity-1

0=Minimal    1=Slight        2=Moderate    4=Extreme

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