*R-Value Foam Insulation, LLC*
2800 East Vernon Road
Rosebush, MI 48878

Phone: 517.204.4747
Fax: 989.433.0300
info@rvaluefoam.com

# Material Safety Data Sheet

## *Foam Iso- RVF-200*

**R-Value Foam Insulation, LLC**
**2800 East Vernon Road**
**Rosebush, MI 48878**
**(M) 517.204.4747**

**Original Date: 12/08/2010**

**Emergency Contact: 800.424.9300**
**CHEMTREC**

## SECTION 1 – PRODUCT INFORMATION

| | |
|---|---|
| Common Chemical Name: | POLYMETHYLENE POLYPHENYLISOCYANATE |
| Synonyms: | POLYMERIC MDI, PMDI |
| Molecular Formula: | MIXTURE |
| Chemical Family: | Aromatic Isocyanates |
| Molecular Wt.: | NOT ESTABLISHED |

## SECTION 2 – INGREDIENTS

| **Chemical Name** | **CAS** | **Amount** | |
|---|---|---|---|
| 4,4' DIPHENYLMETHANE DIISOCYANATE | 101-68-8 | 42.0 % | |
| ACGIH TLV | TWA | 0.005 PPM | |
| OSHA PEL | CEIL | 0.02 PPM | |
| POLYMERIC MDI | 9016-87-9 | >50.0 % | PEL/TLV NOT ESTABLISHED |
| MDI MIXED ISOMERS | 26447-40-5 | < 5.0 % | PEL/TLV NOT ESTABLISHED |

## SECTION 3 – HAZARDS IDENTIFICATION

***Emergency Overview***

| | |
|---|---|
| Color: | Dark Brown |
| Form/Appearance: | Liquid |
| Odor: | Aromatic |

**WARNING STATEMENT:**

CAUTION: CONTAINS DIPHENYLMETHANE DIISOCYANATE (CAS NO. 101-68-8). 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.

***Potential Health Effects***

***Primary Route of Exposure:***

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation.
Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

***Acute Overexposure Effects:*** Eye contact with isocyanates may result in conjunctiva irritation and mild corneal opacity. Skin contact may result in dermatitis, either irritative or allergic. 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. Airborne overexposure well above the PEL may result additionally in eye irritation, headache, chemical bronchitis, asthma-like findings or pulmonary edema. Isocyanates have also been reported to cause hypersensitivity pneumonitis, which is characterized by flu-like symptoms, the onset of which may be delayed. Gastrointestinal symptoms include nausea, vomiting and abdominal pain.

***Chronic Overexposure Effects:*** Results from a lifetime inhalation study in rats indicate that MDI aerosol was carcinogenic at 6 mg/m3, the highest dose tested. This is well above the recommended TLV of 5 ppb (0.05mg/m3). Only irritation was noted at the lower concentration of 0.2 and 1 mg/m3. No birth defects or teratogenic effects were reported in a teratology study with rats exposed to 1, 4, and 12 mg/m3 polymeric MDI for 6 hr/day on days 6-15 of gestation. Embryo toxicity and fetotoxicity was reported at the top dose in the presence of maternal toxicity. 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. 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, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. 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 a skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material, or even as a result of vapor-only exposure.

***First Aid Procedures – Aggravated Medical Conditions:*** Individuals, who are sensitized to isocyanates and those with pre-existing lung diseases or conditions, including non-specific bronchial hyper reactivity or asthma, must avoid all exposure to isocyanates.

## SECTION 4 – FIRST AID MEASURES

***First Aid Procedures – Skin:*** Wash affected areas with soap and water. Remove and launder contaminated clothing before reuse. Get immediate medical attention.

***First Aid Procedures – Eyes:*** Immediately rinse eyes with running water for 15 minutes. Get immediate medical attention.

***First Aid Procedures – Ingestion:*** If swallowed, dilute with water. DO NOT INDUCE VOMITING. Never give fluids or induce vomiting if the victim is unconscious or having convulsions. Get immediate medical attention.

| | |
|---|---|
| ***First Aid Procedures – Inhalation:*** | Move to fresh air. Aid in breathing, if necessary, and get immediate medical attention. |
| ***First Aid Procedures – Notes to Physicians:*** | There is no specific 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 reaction of the patient. |
| ***First Aid Procedures – Aggravated Medical Conditions:*** | Individuals, who are sensitized to isocyanates and those with Pre-existing lung diseases or conditions, including non-specific bronchial hyper -reactivity or asthma, must avoid all exposure to isocyanates. |
| ***First Aid Procedures – Special Precautions:*** | None |
| ***Other First Aid Procedures:*** | Medical supervision of all employees who handle or come into contact with MDI is recommended. Pre-employment and periodic medical examinations with respiratory function tests (FEV, FVC as a minimum) are suggested. Persons with asthmatic conditions, chronic bronchitis, other chronic respiratory diseases, recurrent eczema or pulmonary sensitization should be excluded from working with MDI. Once a person is diagnosed as having pulmonary sensitization (allergic asthma) to MDI, further exposure is not permissible. |

## SECTION 5 – FIRE FIGHTING MEASURES

| | Typical Low/High | Deg. | Method |
|---|---|---|---|
| Flash Point: | > 400 | F | CLOSED CUP |
| Auto ignition: | NOT AVAILABLE | | |
| Extinguishing Media: | Use water, dry extinguishing media, carbon dioxide (CO2) or foam. | | |
| Fire Fighting Procedures: | Personnel engaged in fighting isocyanate fires must be protected against nitrogen dioxide fumes as well as isocyanate vapors. Firefighters must wear self-contained breathing apparatus and turnout gear. | | |
| Unusual Hazards: | Reacts exothermically with water to form carbon dioxide gas, which may create excessive pressure in closed containers. Reacts exothermically with polyol and alcohols. Reacts exothermically and possibly violently with acids, amines and alkaline solutions. | | |

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| General: | Evacuate and ventilate spill area, dike spill to prevent entry into water system, wear full protective equipment including respiratory equipment during clean up. |
| MAJOR SPILL: | Immediately notify Safety Manager in office. If transportation spill involved, call CHEMTREC at 1-800-424-9300. If temporary control of isocyanate vapor is required a blanket of protein foam or other suitable foam (available at most fire departments), may be placed over the spill. Transfer as much liquid as possible via pump or vacuum device into closed but not sealed containers for disposal. |
| MINOR SPILL: | Absorb the isocyanate with an acceptable absorbent, see 40 CFR sections 260, 264 and 265 for further information. Shovel into open containers. Do not make pressure tight. Move to a well ventilated area (outside) and neutralize with a mixture of 90% water, 3-8% ammonia and 2-7% detergent. Add at 10 to 1 ratio. Let stand for 48 hours letting evolved CO2 escape. Proceed with final clean up of spill area. |
| CLEAN UP: | Decontaminate spill area using neutralizing solution and let stand for at least 10 minutes. |

## SECTION 7 – STORAGE AND HANDLING

| | |
|---|---|
| General: | Keep containers closed. |

## SECTION 8 – PERSONAL PROTECTION

| | |
|---|---|
| Clothing: | Rubber gloves, coveralls, hard hat, boots and rubber apron to avoid skin contact. Contaminated equipment or clothing should be cleaned after each use or disposed of. |
| Eyes: | Wear fitted chemical goggles or face shield and safety glasses. |
| Respiration: | For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), select and use an appropriate positive pressure air supplying respirator (airline or self-contained breathing apparatus). When atmospheric levels may exceed the occupational exposure limit (PEL or TLV) approved air-purifying respirators equipped with an organic vapor sorbent and particulate filter can be used as long as appropriate precautions and change out schedules are in place. |
| Ventilation: | Use local exhaust as necessary to maintain P.E.L. |
| Explosion Proofing: | None required. |
| Other Personal Protection Data: | Eyewash fountains and safety showers must be easily accessible. Maintain work area below P.E.L. |

## SECTION 9 – PHYSICAL PROPERTIES

| | | |
|---|---|---|
| Color: | Dark Brown | |
| Form/Appearance: | Liquid | |
| Odor: | Aromatic | |
| Odor Intensity: | Slight | |
| | Typical Low/High | U.O.M. |
| Specific Gravity: | NOT AVAILABLE | |
| Bulk Density: | 10.22 | LB/GAL |
| Viscosity: | 200 | CENTIPOISE @ 77° |
| pH: | NOT AVAILABLE | |
| | Typical Low/High | Deg. @Pressure |
| Boiling Pt: | 625 | F 760MM HG |
| Freezing Pt: | NOT AVAILABLE | |
| Decomp. Tmp: | NOT AVAILABLE | |
| Solubility in Water Description: | Water reactive | |
| Vapor Pressure: | 0.00001 mm Hg @ 25°C. | |

## SECTION 10 – STABILITY AND REACTIVITY

| | |
|---|---|
| Stability Data: | Stable |
| Incompatibility: | Water, alcohols and strong bases. |
| Conditions/Hazards to Avoid: | Reaction with moisture may form CO2. |
| Hazardous Decomposition/Polymerization: | Hazardous decomposition products: CO, NOx, HCN and MDI vapors. |
| Polymerization: | May occur. |
| Corrosive Properties: | Not corrosive. |
| Oxidizer Properties: | Not an oxidizer |
| Other Reactivity Data: | Hazardous polymerization may occur. Avoid contamination with moisture and other products that react with isocyanates. Contact with certain rubbers and plastics can cause embrittlement of the material with subsequent loss in strength. |

## SECTION 11 – TOXICOLOGICAL INFORMATION

No applicable data for this section.

## SECTION 12 – ECOLOGICAL INFORMATION

No applicable data for this section.

## SECTION 13 – DISPOSAL CONSIDERATION

| | |
|---|---|
| Waste Disposal: | Incinerate or landfill in a licensed facility. Do not discharge into waterways or sewer systems. |
| Container Disposal: | Steel drums must be emptied (as defined by RCRA, Section 261.7 or state regulations that may be more stringent) and can be sent to a licensed drum reconditioner for reuse, a scrap metal dealer, or an approved landfill. Check with reconditioner to determine if they require them to be decontaminated. Drums destined for a scrap dealer or landfill must be decontaminated and punctured or crushed to prevent reuse. |

## SECTION 14 – TRANSPORTATION INFORMATION

| | |
|---|---|
| DOT Proper Shipping Name: | SEE BELOW |
| DOT Technical Name: | SEE BELOW |
| DOT Primary Hazard Class: | SEE BELOW |
| DOT Secondary Hazard Class: | SEE BELOW |
| DOT Label Required: | SEE BELOW |
| DOT Placard Required: | SEE BELOW |
| DOT Poison Constituent: | SEE BELOW |
| BPL Commodity Codes: | UN/NA Code: 2489 E/R Guide: |
| Bill of Lading Description: | < 793 GALLONS NOT REGULATED BY THE DEPARTMENT OF TRANSPORTATION<br>> 793 GALLONS RQ, OTHER REGULATED SUBSTANCES, LIQUITD, NOS, (MDI), 9, NA3082, PG III |

## SECTION 15 – REGULATORY INFORMATION

**TSCA Inventory Status**

| | | |
|---|---|---|
| Listed on Inventory: | YES | |
| SARA - 313 Listed Chemicals: | CAS: 28 | AMOUNT: 100.0 % |
| NAME: DIIOSCYANATES | | |
| RCRA Haz. Waste No .: | NO | |
| CERCLA: | YES | |
| Reportable Qty.: | (If YES) | |
| XXXXXXX XXXXXXXXXXXXXX | 5000 LBS | |

## SECTION 16 – OTHER INFORMATION

| **HMIS III Ratings** | **Health** | **Fire** | **Reactivity** | **Special** |
|---|---|---|---|---|
| | 2 | 1 | 1 | NA |

R-Value Foam Insulation, LLC currently uses the National Paint & Coating Association (NPCA) rating system. The use of an asterisk (*) in the HMIS rating indicates the potential for chronic health effects.

"IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO

CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY R-VALUE FOAM INSULATION, LLC HEREUNDER ARE GIVEN GRATIS AND R-VALUE FOAM INSULATION, LLC ASSUMES NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK". R-VALUE FOAM INSULATION, LLC WILL NOT MAKE ITS PRODUCTS AVAILABLE TO CUSTOMERS FOR USE IN THE MANUFACTURE OF MEDICAL DEVICES WHICH ARE INTENDED FOR PERMANENT IMPLANTATION IN THE HUMAN BODY OR IN PERMANENT CONTACT WITH INTERNAL BODILY TISSUES OR FLUIDS. WE AT R-VALUE FOAM INSULATION, LLC TAKE PRIDE IN OUR PRODUCTS, AND OUR TRADITION OF DEVELOPING INNOVATIVE APPLICATIONS IN PARTNERSHIP WITH OUR CUSTOMERS. HOWEVER, THE POSSIBILITY OF BEING REQUIRED TO RESPOND TO UNFOUNDED LITIGATION AND/OR CLAIMS ARISING OUT OF CONCERNS RELATING TO SUCH USE PRESENTS AN UNACCEPTABLE RISK TO THE COMPANY.

**END OF DATA SHEET**