Elastochem® 1100
Comfort for Your Family
Protection for Your Investment
Elastochem® 1100

Significant component of household energy efficiency
Creates a healthier, more comfortable home
Made from recyclable and renewable resources

PERFORMANCE-ENGINEERED INSULATION
Elastochem® 1100 is a performance-engineered insulation system. Designed for residential (houses and multi-unit dwellings), commercial, industrial and institutional use. Elastochem® 1100 spray foam insulation products are engineered to provide superior thermal insulation and an effective air barrier. Elastochem® 1100 also boasts industry-leading yield requiring less material usage.

CLEAR, FRESH, HEALTHY AIR
Elastochem® 1100 seals your home to guard against airborne pollutants. With mould, fungi, dust, allergens, pollutants, odours and respiratory irritants restricted from entry, indoor air is easily kept clear, fresh and healthy.

VIRTUALY PAYS FOR ITSELF
With air leakage minimized, the demands placed on HVAC equipment is markedly reduced. Smaller, less costly equipment can be utilized and with energy savings often as high as 50%, Elastochem® 1100 virtually pays for itself over time.

PROFESSIONAL INSTALLATION
Elastochem® 1100 is only installed by experienced professionals. Trained to work safely, using up-to-date, proven techniques and equipment, our experts ensure that you get the most for your money. As it leaves the spray nozzle, Elastochem® 1100 begins expanding from its liquid state. The expansion process allows Elastochem® 1100 to completely fill insulation cavities and cover irregular surfaces while bonding to building materials to create an effective air barrier. Air is not able to penetrate the insulation or move around it via gaps and voids. Elastochem® 1100 even increases the building's structural strength.

NOISE ATTENUATION
The perfect fit also makes Elastochem® 1100 a potent sound attenuator. Lawnmowers, traffic, aircraft and other exterior noises are significantly reduced. Using Elastochem® 1100 in interior walls yields excellent control of indoor sound.
**Technical Information**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Test</th>
<th>1100 Results</th>
<th>Attribute</th>
<th>Test</th>
<th>1100 Results</th>
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<tbody>
<tr>
<td>Density</td>
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<td>Thermal Resistance (50mm Foam Depth)</td>
<td>ASTM C518</td>
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<td>Long term Thermal Resistance (50mm Foam Depth)</td>
<td>CAN/ULC S-770</td>
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<td>Air Permeation @ 75 Pa</td>
<td>ASTM E2178</td>
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<td>Water Vapor Permeation</td>
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<td>Water Absorption (% Volume)</td>
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<td>Flame Spread</td>
<td>ULC S-102, Steiner Tunnel ULC-127 Corner Wall</td>
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<td>Smoke Development</td>
<td>ULC S-102 Steiner Tunnel</td>
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<tr>
<td>Dimensional Stability (Volume change after 28 days)</td>
<td>ASTM D2126</td>
<td></td>
<td>Compression Strength</td>
<td>ASTM D1621</td>
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<tr>
<td>Tensile Strength</td>
<td>ASTM 1623</td>
<td></td>
<td>Open Cell Content</td>
<td>ASTM D2856</td>
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<tr>
<td>Fungal Resistance</td>
<td>ASTM G21</td>
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<td>VOC Emissions</td>
<td>CAN/ULC S774-09</td>
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<td>Sound Transmission class (3.5&quot; foam depth)</td>
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<td>Sound Transmission class (5.5&quot; foam depth)</td>
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Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Chemical Name: Polymeric MDI
Manufacturer: Elastochem Specialty Chemicals Inc.
37 Easton Road
Brantford, Ontario N3P 1J4
Phone (519) 754 - 1678 Fax (519) 754 - 4487

Supplied by: Elastochem Specialty Chemicals Inc.
Emergency Telephone #: Chemtrec Emergency Number: 800-424-9300
Intended use of Product: Component of a packaging foam system

Section 2: HAZARDOUS INGREDIENTS OF PRODUCT

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>% (w/w)</th>
<th>CAS #</th>
<th>Exposure Limit</th>
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</thead>
<tbody>
<tr>
<td>Diphenylmethane diisocyanate (MDI)</td>
<td>1-5</td>
<td>026447-40-5</td>
<td>TWA 0.005 PPM</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>PEL 0.02 PPM</td>
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<tr>
<td>Polymethylene polyphenyl isocyanate</td>
<td>40-55</td>
<td>009016-87-9</td>
<td>TWA 0.005 PPM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PEL 0.02 PPM</td>
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<tr>
<td>4’4’-Diphenyl methane diisocyanate</td>
<td>30-45</td>
<td>101-68-8</td>
<td>TWA 0.005 PPM</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>PEL 0.02 PPM</td>
</tr>
</tbody>
</table>

Section 3: PHYSICAL PROPERTIES OF PRODUCT

Odour: Slightly musty odour
Appearance: Brown liquid
Odour threshold: no data
Specific Gravity (H2O = 1): 1.2 @ 25°C
Freezing Point: <= 10°C
Viscosity: 250 cps @ 25°C
Boiling Pt: 208°C
Vapor Pressure (mm Hg): . . :1 X 10⁻⁵ mm Hg@25°C
Percent Volatile by vol (%): Not applicable
Vapor Density (Air = 1): . . : 8.5 (MDI)
Evaporation Rate (BuAc = 1): Not available
Solubility in Water (%): Not soluble, reacts slowly with water to liberate CO₂ gas
Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Chemical Name:** Polymeric Resin  
**Manufacturer:** Elastochem Specialty Chemicals Inc.  
37 Easton Road  
Brantford, Ontario N3P 1J4  
Phone (519) 754-1678  
Fax (519) 754-4487

**Supplied by:** Elastochem Specialty Chemicals Inc.  
**Emergency Telephone #:** Chemtrec Emergency Number: 800-424-9300  
**Intended use of Product:** Component of a foam System

Section 2: HAZARDOUS INGREDIENTS OF PRODUCT

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<tr>
<th>Ingredient</th>
<th>% (w/w)</th>
<th>CAS #</th>
<th>Exposure Limit</th>
<th>LD50/LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethylethanolamine</td>
<td>0-10%</td>
<td>108-01-0</td>
<td>Not Known</td>
<td>1180mg/kg (rat-oral)/1000mg/l 4hr (rat-inhalation)</td>
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<tr>
<td>1,3-Propane diamine N’-(3- (dimethylamino) propyl)- N,N- dimethyl</td>
<td>1-10%</td>
<td>6711-48-4</td>
<td>Not Known</td>
<td>&gt;1.25g/kg (rat-oral) / Not determined</td>
</tr>
</tbody>
</table>

Section 3: PHYSICAL PROPERTIES OF PRODUCT

**Odour:** Light ammonia  
**Appearance:** Clear to amber liquid  
**Odour threshold:** No data  
**Specific Gravity (H20 = 1):** 1.1 @ 25°C  
**Freezing Point:** 0°C  
**Viscosity:** 200-800 cps @20°C  
**Boiling Pt:** 212°C  
**Vapor Pressure (mm Hg):** Not available  
**Percent Volatile by vol (%):** 1-10% (H2O)  
**Vapor Density (Air = 1).:** Not available  
**Evaporation Rate (BuAc = 1):** None  
**Solubility in Water (%):** Miscible
Section 4: FIRE AND REACTIVITY HAZARD OF PRODUCT

Flash Point (°C): > 141 (PMCC)
Flammable Limits LEL (%): None
Flammable Limits UEL (%): None
Extinguishing Media: Use water spray, foam, dry chemical, or CO2. Water spray to cool fire-exposed containers.
Fire Fighting Procedures: Wear self-contained breathing apparatus is required in confined spaces. Cool exposed containers with water.
Explosion Data:
Sensitivity to mechanical impact: Not sensitive
Sensitivity to static discharge: Not sensitive
Stability: Stable at room temperature and normal processing conditions.
Hazardous Polymerization: None known.
Incompatibility: Reacts with strong acids and isocyanates.
Hazardous Decomposition products: oxides of nitrogen and carbon.

Section 5: HEALTH HAZARD INFORMATION

Routes of Exposure: Inhalation, skin contact, eye contact.
Acute Effects: May cause sore throat, eye or skin irritation
Chronic Effects: May cause severe skin and eye irritation and adverse respiratory effects.
LD50: oral-rat 1 360 mg/Kg
LD50: Dermal- rabbit 260 mg/Kg
Eyes: May cause severe irritation to the eyes.
Skin: May cause severe irritation to the skin.
Ingestion: Toxicity is low for ingestion
Inhalation: Excessive exposure may cause irritation of the upper respiratory tract and lungs.
Carcinogenicity: Not suspected to be carcinogenic
Teratogenicity/Reproductive effects: None
Mutagenicity: None

Section 6: Preventative Measures

Personal Protection:
Respiratory Protection: Use in adequate ventilation. In poorly ventilated areas, a cartridge respirator for organic vapours is recommended. For large spills or fires a self-contained breathing apparatus is recommended.
Skin Protection: Wear neoprene or butyl rubber gloves, boots and long sleeves are recommended. 
Eye protection: Chemical safety goggles or glasses with side shields.
Ventilation: Adequate ventilation to maintain levels below exposure guidelines.
Eye wash and safety equipment should be readily available.

Section 7: FIRST AID PROCEDURES

Skin: Wash area with soap and water, seek medical attention if irritation develops. 
Eyes: Immediately flush thoroughly with water for at least 15 minutes. Get prompt medical attention. 
Inhalation: No exposure expected. Remove to fresh air. 
Ingestion: If conscious, give victim 2 glasses of water. Never give anything to an unconscious person. Get medical attention immediately.

Section 7: SPILL, DISPOSAL, HANDLING AND STORAGE PROCEDURES

Spill Procedure: Evacuate the area of all unnecessary personnel. Ventilate area. Dike the spill to prevent entry into water system. Wear suitable protective equipment listed under preventative measures including respiratory protection. Use inert absorbent material to clean up spill. 
Disposal Procedure: Comply with Federal, provincial, and local regulations on reporting releases. 
Handling & Storage: Store away from heat and moisture. Store and handle in a well ventilated area. Wear all personal protective equipment when handling.

Section 8: PREPARATION INFORMATION

DATE: December 17, 2012
PREPARED BY: Regulatory Affairs group, Elastochem Specialty Chemicals Inc.

REVISION: 1
Section 9: REGULATORY INFORMATION

WHMIS CLASSIFICATION: Not Classified
TDG (TRANSPORTATION OF DANGEROUS GOODS) CLASSIFICATION: Not Regulated
Class: Not Regulated
Domestic Substance List (DSL): Yes
Section 4: FIRE AND REACTIVITY HAZARD OF PRODUCT

**Flash Point (°C)**: 199 °C
**Flammable Limits LEL (%):** Not available
**Flammable Limits UEL (%):** Not available

**Extinguishing Media:** Use large amounts of water spray, foam, dry chemical, or CO2. Water spray to cool fire-exposed containers not on open containers or burning materials.

**Fire Fighting Procedures:** Wear self-contained breathing apparatus.
Cool exposed containers with water.

**Explosion Data:**
- **Sensitivity to mechanical impact:** No
- **Sensitivity to static discharge:** No
- **Stability:** Stable at room temperature and normal processing conditions.
- **Hazardous Polymerization:** Will not spontaneously occur under normal conditions. Avoid incompatible products below.
- **Incompatibility:** Water, amines, strong bases, alcohols, and metal compounds.
- **Hazardous Decomposition products:** Thermal decomposition may produce MDI vapour and mist, traces of hydrogen cyanide and oxides of nitrogen and carbon.

Section 5: HEALTH HAZARD INFORMATION

**Routes of Exposure:** Inhalation, skin contact, eye contact.
**Acute Effects:** Contact with eyes and skin may cause irritation.
**Chronic Effects:** Chronic exposure to MDI may cause respiratory sensitization in susceptible individuals.
- **LD50:** oral-rat >10 000 mg/Kg
- **LD50:** Dermal- rabbit >6 200 mg/Kg
**Eyes:** May cause slight eye irritation
**Skin:** Prolonged or repeated exposure may cause skin irritation
**Ingestion:** Toxicity is low for ingestion
**Inhalation:** Excessive exposure may cause irritation of the upper respiratory tract and lungs.
**Carcinogenicity:** Not listed by IARC, NTP or regulated as a carcinogen by OSHA.
**Teratogenicity/Reproductive effects:** Not available
**Mutagenicity:** Not available
Section 6: Preventative Measures

Personal Protection:
Respiratory Protection: NIOSH approved atmosphere supplying respirator in positive pressure mode if concentrations exceed the applicable exposure limits as indicated in section 2.
Skin Protection: Wear gloves, boots and long sleeves which are impervious to the material to prevent skin contact.
Eye protection: Chemical safety goggles or glasses with side shields.
Ventilation: Adequate ventilation to maintain levels below exposure guidelines.
Eye wash and safety equipment should be readily available.

Section 7: FIRST AID PROCEDURES

Skin: Wash off well with soap and water, remove contaminated clothing, seek medical attention if irritation develops.
Eyes: Immediately flush thoroughly with water for at least 15 minutes. Get prompt medical attention.
Inhalation: Remove to fresh air; give artificial respiration if not breathing. Get medical attention.
Ingestion: Do not induce vomiting. If conscious, give victim 2 glasses of water. Never give anything to an unconscious person. Get medical attention immediately.

Section 7: SPILL, DISPOSAL, HANDLING AND STORAGE PROCEDURES

Spill Procedure: Evacuate the area of all unnecessary personnel. Remove all sources of ignition. Ventilate area. Dike the spill to prevent entry into water system. Wear suitable protective equipment listed under preventative measures including respiratory protection.
Use inert absorbent material to clean up spill. Saturate spill with excess neutralizing solution (1% ammonia in water + 10% isopropanol). When reaction is complete, shovel into drums.
Disposal Procedure: Comply with Federal, provincial, and local regulations on reporting releases.
Handling & Storage: Store at temperature of 16-38°C (60-100°F), away from heat and moisture. Store and handle in a well ventilated area. Wear all personal protective equipment when handling.
Section 8: PREPARATION INFORMATION

Date: December 17, 2012
PREPARED BY: Regulatory Affairs group, Elastochem Specialty Chemicals Inc.

Section 9: REGULATORY INFORMATION

WHMIS CLASSIFICATION: D2A, D2B
TDG (TRANSPORTATION OF DANGEROUS GOODS) CLASSIFICATION: Not Regulated
Class: Not Regulated
Domestic Substance List (DSL): Yes