

## Safety Data Sheet

### ELASTOSPRAY® 8000A ISOCYANATE

Revision date : 2014/02/28

Version: 6.0

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(30232235/SDS\_GEN\_CA/EN)

#### 1. Product and Company Identification

Company

BASF Canada Inc.  
100 Milverton Drive  
Mississauga, ON L5R 4H1, CANADA

24 Hour Emergency Response Information

CANUTEC (reverse charges): (613) 996-6666  
BASF HOTLINE: (800) 454-COPE (2673)

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Chemical family: aromatic isocyanates  
Synonyms: POLYMETHYLENE POLYPHENYLISOCYANATE

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#### 2. Hazards Identification

Emergency overview

Irritating to eyes, respiratory system and skin.

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.

May cause sensitization by inhalation.

State of matter: liquid  
Colour: dark amber  
Odour: faint odour, aromatic

Potential health effects**Acute toxicity:**

Of moderate toxicity after short-term inhalation. Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact.

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

**Irritation / corrosion:**

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Irritating to eyes, respiratory system and skin.

### Assessment other acute effects:

Causes temporary irritation of the respiratory tract.

### Sensitization:

The substance may cause sensitization of the respiratory tract. Sensitization after skin contact possible. Studies in animals suggest that dermal exposure may lead to pulmonary sensitization. However, the relevance of this result for humans is unclear.

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. 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 vapour-only exposure.

### Chronic toxicity:

**Carcinogenicity:** A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure.

**Repeated dose toxicity:** The substance may cause damage to the olfactory epithelium after repeated inhalation. These effects are not relevant to humans at occupational levels of exposure.

**Reproductive toxicity:** Repeated inhalative uptake of the substance did not cause damage to the reproductive organs.

**Teratogenicity:** The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.

**Genotoxicity:** The substance was mutagenic in various bacterial test systems; however, these results could not be confirmed in tests with mammals.

### Medical conditions aggravated by overexposure:

The isocyanate component is a respiratory sensitizer. It may cause allergic reaction leading to asthma-like spasms of the bronchial tubes and difficulty in breathing. Persons with asthmatic conditions, chronic bronchitis, other chronic respiratory diseases, recurrent eczema or pulmonary sensitization should be excluded from working with isocyanates. Once a person is diagnosed as having pulmonary sensitization (allergic asthma) to isocyanates, further exposure is not recommended. An animal study indicated that MDI may induce respiratory hypersensitivity following dermal exposure.

### Signs and symptoms of overexposure:

Eye irritation, skin irritation, allergic symptoms  
Symptoms can appear later.

#### Information on: MDI

*In sensitized individuals, sensitization reactions may be elicited by structurally similar substances. Respiratory sensitization may result in allergic (asthma-like) signs in the lower respiratory tract including wheezing, shortness of breath and difficulty breathing, the onset of which may be delayed. Repeated inhalation of high concentrations may cause lung damage, including reduced lung function, which may be permanent. Substances eliciting lower respiratory tract irritation may worsen the asthma-like reactions that may be produced by product exposures.*

### Potential environmental effects

#### Aquatic toxicity:

The product may hydrolyse. The test result maybe partially due to degradation products. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

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### 3. Composition / Information on Ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Hazardous ingredients</u>
101-68-8	>= 30.0 - <= 60.0 %	Diphenylmethane-4,4'-diisocyanate (MDI)
26447-40-5	>= 5.0 - <= 10.0 %	Methylenediphenyl diisocyanate
9016-87-9	>= 40.0 - <= 70.0 %	P-MDI

### 4. First-Aid Measures

**General advice:**

Remove contaminated clothing.

**If inhaled:**

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

**If on skin:**

Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

**If in eyes:**

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

**If swallowed:**

Rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

**Note to physician**

**Treatment:**

Treat according to symptoms (decontamination, vital functions), no known specific antidote, administer corticosteroid dose aerosol to prevent pulmonary odema.

### 5. Fire-Fighting Measures

Flash point:	220 °C	(open cup)
Autoignition:	> 250 °C	
Lower explosion limit:		For liquids not relevant for classification and labelling. The lower explosion point may be 5 - 15 °C below the flash point.
Upper explosion limit:		For liquids not relevant for classification and labelling.
Flammability:	not flammable	
Self-ignition temperature:		not self-igniting

**Suitable extinguishing media:**

water spray, dry powder, carbon dioxide, foam

**Hazards during fire-fighting:**

nitrous gases, fumes/smoke, isocyanate, vapour

**Protective equipment for fire-fighting:**

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

**Further information:**

Keep containers cool by spraying with water if exposed to fire. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

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### 6. Accidental release measures

**Personal precautions:**

Clear area. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

**Environmental precautions:**

Do not discharge into drains/surface waters/groundwater.

**Cleanup:**

Dike spillage.

For small amounts: Absorb isocyanate with suitable absorbent material (see § 40 CFR, sections 260, 264 and 265 for further information). Shovel into open container. Do not make container pressure tight. Move container to a well-ventilated area (outside). Spill area can be decontaminated with the following recommended decontamination solution: Mixture of 90 % water, 8 % concentrated ammonia, 2 % detergent. Add at a 10 to 1 ratio. Allow to stand for at least 48 hours to allow escape of evolved carbon dioxide.

For large amounts: If temporary control of isocyanate vapor is required, a blanket of protein foam or other suitable foam (available from 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.

For residues: The following measures should be taken for final cleanup: Wash down spill area with decontamination solution. Allow solution to stand for at least 10 minutes.

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### 7. Handling and Storage

**Handling**

**General advice:**

Provide suitable exhaust ventilation at the processing machines. Ensure thorough ventilation of stores and work areas. Avoid aerosol formation. When handling heated product, vapours of the product should be ventilated, and respiratory protection used. Wear respiratory protection when spraying. Danger of bursting when sealed gastight. Protect against moisture. If bulging of drum occurs, transfer to well ventilated area, puncture to relieve pressure, open vent and let stand for 48 hours before resealing.

**Protection against fire and explosion:**

No explosion proofing necessary.

**Storage**

**General advice:**

Formation of CO<sub>2</sub> and build up of pressure possible. Keep container tightly closed and in a well-ventilated place. Outage of containers should be filled with dry inert gas at atmospheric pressure to avoid reaction with moisture.

**Storage incompatibility:**

General advice: Keep away from water. Segregate from foods and animal feeds. Segregate from acids and bases.

**Storage stability:**

Protect against moisture.

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### 8. Exposure Controls and Personal Protection

**Components with occupational exposure limits**

Diphenylmethane-4,4'-diisocyanate (MDI) OSHA PEL CLV 0.02 ppm 0.2 mg/m<sup>3</sup> ;

P-MDI OSHA PEL CLV 0.02 ppm 0.2 mg/m<sup>3</sup> ;

**Advice on system design:**

Provide local exhaust ventilation to maintain recommended P.E.L.

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### Personal protective equipment

#### **Respiratory protection:**

When workers are facing concentrations above the occupational exposure limits they must use appropriate certified respirators. When atmospheric levels may exceed the occupational exposure limit (PEL or TLV) NIOSH-certified 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. For emergency or non-routine, high exposure situations, including confined space entry, use a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

#### **Hand protection:**

Chemical resistant protective gloves, Suitable materials, Rubber gloves, Plastic gloves

Chemical resistant protective gloves should be worn to prevent all skin contact., Suitable materials may include, chloroprene rubber (Neoprene), nitrile rubber (Buna N), chlorinated polyethylene, polyvinylchloride (Pylox), butyl rubber, depending upon conditions of use.

#### **Eye protection:**

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

#### **Body protection:**

Cover as much of the exposed skin as possible to prevent all skin contact., Suitable materials may include, saran-coated material, depending upon conditions of use.

#### **General safety and hygiene measures:**

Wear protective clothing as necessary to prevent contact. Eye wash fountains and safety showers must be easily accessible. Observe the appropriate PEL or TLV value. Wear protective clothing as necessary to prevent contact. Wash soiled clothing immediately. Contaminated equipment or clothing should be cleaned after each use or disposed of.

## 9. Physical and Chemical Properties

Form:	liquid	
Odour:	faint odour, aromatic	
Odour threshold:	No data available.	
Colour:	dark amber	
pH value:		not applicable
Freezing point:	3 °C	( 1 ATM)
Boiling point:	200 °C	( 5 mmHg)
Sublimation point:		No applicable information available.
Vapour pressure:	0.00016 mmHg	( 20 °C)
Density:	1.22 g/cm <sup>3</sup>	( 20 °C)
Relative density:	1.22	( 25 °C)
Bulk density:	10.17 lb/USg	( 25 °C)
Vapour density:		not applicable
Partitioning coefficient n-octanol/water (log Pow):		not applicable
Viscosity, dynamic:	200 mPa.s	( 20 °C)
Solubility in water:		Reacts with water.
Solubility in other solvents:		No applicable information available.
Solubility (qualitative):	No applicable information available.	
Molar mass:	360 g/mol	
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.	

## 10. Stability and Reactivity

**Conditions to avoid:**

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Avoid moisture.

**Substances to avoid:**

acids, amines, alcohols, water, Alkalines, strong bases, Substances/products that react with isocyanates.

**Hazardous reactions:**

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

**Decomposition products:**

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

**Thermal decomposition:**

No decomposition if stored and handled as prescribed/indicated.

**Corrosion to metals:**

No corrosive effect on metal.

**Oxidizing properties:**

not fire-propagating

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## 11. Toxicological information

### Acute toxicity

**Oral:**

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*

*Type of value: LD50*

*Species: rat (male/female)*

*Value: > 2,000 mg/kg (Directive 84/449/EEC, B.1)*

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**Inhalation:**

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*

*Type of value: LC10*

*Species: rat*

*Value: 2.24 mg/l (OECD Guideline 403)*

*Exposure time: 1 h*

*An aerosol was tested.*

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**Dermal:**

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*

*Type of value: LD50*

*Species: rabbit (male/female)*

*Value: > 9,400 mg/kg*

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**Irritation / corrosion:**

**Skin:**

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*

*Species: rabbit*

*Result: Irritating.*

*Method: Draize test*

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### Eye:

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*  
*Species: rabbit*  
*Result: Irritating.*  
*Method: Draize test*

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### Sensitization:

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*  
*Buehler test*  
*Species: guinea pig*  
*Result: sensitizing*  
*Mouse Local Lymph Node Assay (LLNA)*  
*Species: mouse*  
*Result: sensitizing*  
*Can cause skin sensitization*  
*other*  
*Species: guinea pig*  
*Result: sensitizing*  
*Studies in animals suggest that dermal exposure may lead to pulmonary sensitization. However, the relevance of this result for humans is unclear.*

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### Repeated dose toxicity

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*  
*Experimental/calculated data:*  
*rat (Wistar) (male/female) Inhalation 2 yrs, 6 hr/day 0, 0.2, 1, 6 mg/m<sup>3</sup>, olfactory epithelium*  
*NOAEL: 0.2 mg/m<sup>3</sup>*  
*LOAEL: 1 mg/m<sup>3</sup>*  
*The substance may cause damage to the olfactory epithelium after repeated inhalation. These effects are not relevant to humans at occupational levels of exposure. Repeated inhalative uptake of the substance did not cause damage to the reproductive organs.*

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### Genetic toxicity

*Experimental/calculated data:*  
*OECD Guideline 471 Ames-test Salmonella typhimurium:with and without metabolic activation ambiguous*

*Experimental/calculated data:*  
*OECD Guideline 474 Micronucleus assay rat (male) Inhalation negative*  
*No clastogenic effect reported.*

### Carcinogenicity

*Experimental/calculated data:*  
*OECD Guideline 453 rat Inhalation 0, 0.2, 1, 6 mg/m<sup>3</sup>*  
*Result: Lung tumors*

### Development

*OECD Guideline 414 rat Inhalation 0, 1, 4, 12 mg/m<sup>3</sup>*  
*NOAEL Mat.: 4 mg/m<sup>3</sup>*  
*NOAEL Teratog.: 4 mg/m<sup>3</sup>*  
*The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.*

### Aspiration Hazard:

No aspiration hazard expected.

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### 12. Ecological Information

#### Aquatic toxicity

*Information on: Diphenylmethane-4,4'-diisocyanate (MDI)*

*Assessment of aquatic toxicity:*

*The product may hydrolyse. The test result maybe partially due to degradation products. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.*

#### Fish

Acute:

OECD Guideline 203 static

Brachydanio rerio/LC0 (96 h): > 1,000 mg/l

#### Aquatic invertebrates

Acute:

OECD Guideline 202, part 1 static

Daphnia magna/EC50 (24 h): > 1,000 mg/l

#### Aquatic plants

Toxicity to aquatic plants:

OECD Guideline 201 static

green algae/EC0 (72 h): 1,640 mg/l

#### Microorganisms

Toxicity to microorganisms:

OECD Guideline 209 aquatic

aerobic bacteria from a domestic water treatment plant/EC50 (3 h): > 100 mg/l

#### Degradability / Persistence

##### Biological / Abiological Degradation

Test method: OECD Guideline 302 C (aerobic), activated sludge

Method of analysis: BOD of the ThOD

Degree of elimination: 0 % (28 d)

Evaluation: Poorly biodegradable.

Poorly biodegradable.

The product is unstable in water. The elimination data also refer to products of hydrolysis.

#### Hydrolysis

Test method: (abiotic)

Half-life: 20 h (25 °C)

#### Bioaccumulation

OECD Guideline 305 E

carp (28 d) Bioconcentration factor 200

### 13. Disposal considerations

#### Waste disposal of substance:

Incinerate or dispose of in a licensed facility. Do not discharge substance/product into sewer system.



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**Container disposal:**  
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

### 14. Transport Information

**Land transport**  
TDG

Not classified as a dangerous good under transport regulations

**Sea transport**  
IMDG

Not classified as a dangerous good under transport regulations

**Air transport**  
IATA/ICAO

Not classified as a dangerous good under transport regulations

#### Further information

DOT: This product is regulated if the amount in a single receptacle exceeds the Reportable Quantity (RQ). Please refer to Section 15 of this MSDS for the RQ for this product.

### 15. Regulatory Information

#### Federal Regulations

**Registration status:**  
Chemical DSL, CA released / listed

**WHMIS classification:** D2A: Materials Causing Other Toxic Effects - Very toxic material



D2B: Materials Causing Other Toxic Effects - Toxic material



**THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.**

### 16. Other Information

**Recommended use:** polyurethane component industrial chemicals  
**Suitable for use in industrial sector:** Polymers industry; chemical industry

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our

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products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

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**SDS Prepared by:**  
BASF NA Product Regulations

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SDS Prepared on: 2014/02/28

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