

Revision date : 2015/02/12 Page: 1/8 Version: 2.0 (30417630/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)

Chemical family: sealant

2. Hazards Identification

Emergency overview

IRRITANT. SENSITIZER. Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation.

State of matter: liquid Colour: yellow

Odour: aromatic, slight odour

Potential health effects

Acute toxicity:

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.

Irritation / corrosion:

Eye contact causes irritation. Skin contact causes irritation.

Irritating to eyes, respiratory system and skin. Skin contact may result in dermatitis, either irritative or allergic.

Assessment other acute effects:

Causes temporary irritation of the respiratory tract.

Sensitization:

Sensitization after skin contact possible. The substance may cause sensitization of the respiratory tract. 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-

Revision date : 2015/02/12 Page: 2/8 Version: 2.0 (30417630/SDS GEN CA/EN)

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. Animal tests indicate that skin contact may play a role in causing respiratory sensitization.

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. The substance may cause damage to the lung 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. Medical supervision of all employees who handle or come into contact with isocyanates is recommended. Contact may aggravate pulmonary disorders. Persons with history of respiratory disease or hypersensitivity should not be exposed to this product. Preemployment 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 isocyanates. Once a person is diagnosed as having pulmonary sensitization (allergic asthma) to isocyanates, further exposure is not recommended.

Signs and symptoms of overexposure:

skin irritation, Eye irritation, coughing, allergic symptoms

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 has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Degradation / environmental fate:

Not readily biodegradable (by OECD criteria). The product has not been tested. The statement has been derived from the properties of the individual components.

Bioaccumulation / bioconcentration:

The product has not been tested. The statement has been derived from the properties of the individual components.

Revision date : 2015/02/12 Page: 3/8

Version: 2.0 (30417630/SDS_GEN_CA/EN)

3. Composition / Information on Ingredients

CAS Number Content (W/W) Hazardous ingredients

101-68-8 \Rightarrow 30.0 - <= 60.0 % Diphenylmethane-4,4'-diisocyanate (MDI)

26447-40-5 >= 10.0 - <= 30.0 % Methylenediphenyl diisocyanate

4. First-Aid Measures

General advice:

First aid personnel should pay attention to their own safety. Immediately 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.

5. Fire-Fighting Measures

Flash point: 187.78 °C (ASTM D93, closed cup)

Flammability: not highly flammable

Suitable extinguishing media:

foam, water spray, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons:

water jet

Hazards during fire-fighting:

carbon dioxide, carbon monoxide, harmful vapours, nitrogen oxides, fumes/smoke, carbon black

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.

Revision date : 2015/02/12 Page: 4/8
Version: 2.0 (30417630/SDS GEN CA/EN)

6. Accidental release measures

Personal precautions:

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

Environmental precautions:

Contain contaminated water/firefighting water. 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.

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.

Storage

General advice:

Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect from direct sunlight.

8. Exposure Controls and Personal Protection

Components with occupational exposure limits

Diphenylmethane-4,4'- OSHA PEL CLV 0.02 ppm 0.2 mg/m3 ; CLV 0.02 ppm 0.2 mg/m3 ; diisocyanate (MDI) ACGIH TLV TWA value 0.005 ppm ;

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

Revision date : 2015/02/12 Page: 5/8

Version: 2.0 (30417630/SDS GEN CA/EN)

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. Wash soiled clothing immediately.

9. Physical and Chemical Properties

Form: liquid

Odour: aromatic, slight odour Odour threshold: No data available.

Colour: yellow

pH value: not soluble
Melting temperature: not applicable
boiling temperature: not applicable

% volatiles:

Solubility in water: (20 °C) Reacts with water., insoluble

Miscibility with water: (20 °C) Reacts with water.

Solubility in other solvents: insoluble

Other Information: If necessary, information on other physical and chemical parameters is

indicated in this section.

10. Stability and Reactivity

Conditions to avoid:

See MSDS section 7 - Handling and storage.

Substances to avoid:

strong acids, strong bases, strong oxidizing agents, strong reducing agents

Hazardous reactions:

The product is stable if stored and handled as prescribed/indicated.

Decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

Corrosion to metals:

Corrosive effects to metal are not anticipated.

11. Toxicological information

Acute toxicity

Oral:

Revision date : 2015/02/12 Page: 6/8 Version: 2.0 (30417630/SDS_GEN_CA/EN)

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:

Type of value: LC50 Species: rat Exposure time: 4 h

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.

Dermal:

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

Type of value: LD50

Species: rabbit (male/female) Value: > 9,400 mg/kg

Irritation / corrosion:

Skin:

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

Species: rabbit Result: Irritating. Method: Draize test

Eye:

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

Species: rabbit Result: Irritating. Method: Draize test

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.

Aspiration Hazard:

Revision date: 2015/02/12 Page: 7/8 Version: 2.0 (30417630/SDS GEN CA/EN)

Study scientifically not justified.

Other Information:

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses. The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

12. Ecological Information

Fish

Acute:

Brachydanio rerio/LC0 (96 h): > 1,000 mg/l Oryzias latipes/LC0 (96 h): > 3,000 mg/l

Aquatic invertebrates

Acute:

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

Aquatic plants

Toxicity to aquatic plants:

green algae/No observed effect concentration (72 h): 1,640 mg/l

Other adverse effects:

Do not release untreated into natural waters. Do not allow to enter soil, waterways or waste water channels. The product has not been tested. The statement has been derived from the properties of the individual components.

13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with national, state and local regulations. Residues should be disposed of in the same manner as the substance/product. Do not discharge into drains/surface waters/groundwater.

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

Revision date: 2015/02/12 Page: 8/8
Version: 2.0 (30417630/SDS GEN CA/EN)

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

VOC content:

600 g/l

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: for industrial and professional users

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

SDS Prepared by:

BASF NA Product Regulations

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END OF DATA SHEET