

Safety Data Sheet

LUPRANATE® LP30 ISOCYANATE

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Version: 7.0

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(30169787/SDS_GEN_US/EN)

1. Identification

Product identifier used on the label

LUPRANATE® LP30 ISOCYANATE

Recommended use of the chemical and restriction on use

Recommended use*: Chemical, Raw material

Recommended use*: polyurethane component; industrial chemicals

Suitable for use in industrial sector: Polymers industry; chemical industry

Unsuitable for use: Uses other than recommended

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:

BASF CORPORATION

100 Park Avenue

Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Chemical family:

aromatic isocyanates

Synonyms:

DIPHENYLMETHANE DIISOCYANATE

MDI

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

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Acute Tox.	4 (Inhalation - mist)	Acute toxicity
Eye Dam./Irrit.	2B	Serious eye damage/eye irritation
Skin Corr./Irrit.	2	Skin corrosion/irritation
Skin Sens.	1	Skin sensitization
Resp. Sens.	1	Respiratory sensitization
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure
STOT RE	2	Specific target organ toxicity — repeated exposure

Label elements

Pictogram:



Signal Word:

Danger

Hazard Statement:

H320	Causes eye irritation.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H373	May cause damage to organs (Olfactory organs) through prolonged or repeated exposure (inhalation).

Precautionary Statements (Prevention):

P280	Wear protective gloves.
P260	Do not breathe mist or vapour or spray.
P271	Use only outdoors or in a well-ventilated area.
P284	In case of inadequate ventilation wear respiratory protection.
P272	Contaminated work clothing should not be allowed out of the workplace.
P264	Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P312	Call a POISON CENTER or physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P314	Get medical advice/attention if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P337 + P313	If eye irritation persists: Get medical attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Precautionary Statements (Storage):

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P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents/container in accordance with local regulations.

Hazards not otherwise classified

No specific dangers known, if the regulations/notes for storage and handling are considered.

Labeling of special preparations (GHS):

CONTAINS ISOCYANATES. INHALATION OF ISOCYANATE 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. ANIMAL TESTS INDICATE THAT SKIN CONTACT MAY PLAY A ROLE IN CAUSING RESPIRATORY SENSITIZATION.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Diphenylmethane-4,4'-diisocyanate (MDI)

CAS Number: 101-68-8

Content (W/W): ≥ 75.0 - $\leq 100.0\%$

Synonym: Diphenylmethandiisocyanat

Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer

CAS Number: 25686-28-6

Content (W/W): ≥ 3.0 - $< 5.0\%$

Synonym: (POLYMER) Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer

diphenylmethane-2,4'-diisocyanate

CAS Number: 5873-54-1

Content (W/W): ≥ 1.0 - $< 3.0\%$

Synonym: 1-Isocyanato-2-[(4-isocyanatophenyl)methyl] benzene

1,3-Diazetidine-2,4-dione, 1,3-bis[4-[(4-isocyanatophenyl)methyl]phenyl]-

CAS Number: 17589-24-1

Content (W/W): > 0.0 - $< 0.2\%$

Synonym: 1,3-Diazetidine-2,4-dione, 1,3-bis[4-[(4-isocyanatophenyl)methyl]phenyl]-

4. First-Aid Measures

Description of first aid measures

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General advice:

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). 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. Remove contact lenses, if present. Immediate medical attention required.

If swallowed:

Rinse mouth and then drink 200-300 ml 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.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., Eye irritation, skin irritation, allergic symptoms

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

Symptoms: Overexposure may cause:, Eye irritation, skin irritation, erythema, chest discomfort, dyspnea, asthma, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps, Inhalation may provoke the following symptoms:, irritation of respiratory tract, coughing, wheezing

Information on: Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer

Symptoms: No data available.

Information on: diphenylmethane-2,4'-diisocyanate

Symptoms: Overexposure may cause:, Eye irritation, skin irritation, erythema, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps

Information on: 1,3-Diazetidine-2,4-dione, 1,3-bis[4-[(4-isocyanatophenyl)methyl]phenyl]-

Symptoms: Overexposure may cause:, Eye irritation, skin irritation, erythema, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps

Hazards: Symptoms can appear later.

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

Hazards: 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.

Indication of any immediate medical attention and special treatment needed

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Note to physician

Antidote: Specific antidotes or neutralizers to isocyanates do not exist.
Treatment: Treatment should be supportive and based on the judgement of the physician in response to the reaction of the patient.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
dry powder, carbon dioxide, water spray, foam

Unsuitable extinguishing media for safety reasons:
water jet

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
nitrous gases, fumes/smoke, isocyanate, vapour

Advice for fire-fighters

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.

6. Accidental release measures

Further accidental release measures:

High risk of slipping due to leakage/spillage of product.

Personal precautions, protective equipment and emergency procedures

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

Environmental precautions

Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up

For small amounts: Absorb isocyanate with suitable absorbent material (see § 40 CFR, sections 260, 264 and 265 for further information). Shovel into open container. Spill area can be decontaminated with the following recommended decontamination solution: Mixture of 90 % water, 5-8 % household ammonia, 2-5 % detergent. Allow solution to stand for at least 10 minutes. Pick up with suitable absorbent material. Place into appropriately labeled waste containers. Do not make container pressure tight. Move container to a well-ventilated area (outside). Allow to stand for at least 48 hours to allow escape of evolved carbon dioxide. Dispose of absorbed material in accordance with regulations.

For large amounts: For spills, stop leaks and provide diking to contain the material. Prevent entry into sewage systems, ground and surface waters. 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

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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: Spill area can be decontaminated with the following recommended decontamination solution: Mixture of 90 % water, 5-8 % household ammonia, 2-5 % detergent. Wash down spill area with decontamination solution. Allow solution to stand for at least 10 minutes. Pick up with suitable absorbent material. Place into appropriately labeled waste containers. Do not make container pressure tight. Move container to a well-ventilated area (outside). Allow to stand for at least 48 hours to allow escape of evolved carbon dioxide. Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Precautions for safe handling

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. Clean up contamination as soon as they occur. Provide basic employee training to prevent/minimize exposures.

Protection against fire and explosion:

No special precautions necessary.

Conditions for safe storage, including any incompatibilities

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

Suitable materials for containers: Carbon steel (Iron), High density polyethylene (HDPE), Low density polyethylene (LDPE), tinned carbon steel (Tinplate), Stainless steel 1.4301 (V2)

Unsuitable materials for containers: Paper/Fibreboard

Further information on storage conditions: Formation of CO₂ 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 stability:

Protect against moisture.

If moisture enters isocyanate containers, CO₂ forms and pressure builds up.

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

Diphenylmethane-4,4'-diisocyanate (MDI)	ACGIH, US:	TWA value 0.005 ppm ;
	OSHA Z1:	CLV 0.02 ppm 0.2 mg/m ³ ;

Advice on system design:

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

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

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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), 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. Wash soiled clothing immediately. Remove contaminated clothing immediately and clean before re-use or dispose if necessary.

9. Physical and Chemical Properties

Form:	liquid
Odour:	aromatic, faint odour
Odour threshold:	not applicable
Colour:	light yellow
pH value:	not applicable
Melting point:	20 - 25 °C
onset of melting:	20 °C
Freezing point:	No data available.
Boiling point:	200 °C (5 mmHg)
Sublimation point:	No applicable information available.
Flash point:	> 250 °C
Flammability:	not flammable
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.
Autoignition:	> 250 °C
SADT:	Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.
Vapour pressure:	< 0.01 Pa (25 °C) 0.00001 mmHg (25 °C)
Density:	1.22 g/cm ³ (15 °C)

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	1.21 g/cm ³ (20 °C)
	1.19 g/cm ³ (50 °C)
Relative density:	approx. 1.22 (20 °C)
Bulk density:	10.2 lb/USg
Vapour density:	No applicable information available.
Partitioning coefficient n-octanol/water (log Pow):	not applicable for mixtures
	No applicable information available.
Self-ignition temperature:	not self-igniting
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.
Viscosity, dynamic:	17 mPa.s (25 °C)
Viscosity, kinematic:	not determined
Solubility in water:	Hydrolyzes to form water-insoluble compounds.
Miscibility with water:	Reacts with water.
Solubility (quantitative):	No applicable information available.
Solubility (qualitative):	No applicable information available.
Molar mass:	No data available.
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:

No corrosive effect on metal.

Oxidizing properties:

not fire-propagating

Reactions with

water/air:

Reaction with:

water

Flammable gases:

no

Toxic gases:

no

Chemical stability

The product is chemically stable.

Peroxides:

The product does not contain peroxides. The product/the substance has not a tendency towards the formation of peroxide.

Possibility of hazardous reactions

The product is chemically stable.

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

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polymerization. Contact with certain rubbers and plastics can cause brittleness of the substance/product with subsequent loss in strength.

Conditions to avoid

Avoid moisture.

Incompatible materials

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

Hazardous decomposition products

Decomposition products:

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

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure

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

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Of moderate toxicity after short-term inhalation. 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.

Inhalation

Type of value: ATE

Species: rat

Value: 1.96 mg/l (OECD Guideline 403)

Exposure time: 4 h

An aerosol was tested.

Type of value: LC50

Species: rat

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

Exposure time: 1 h

An aerosol was tested.

The substance from the isocyanate substance class has been tested in a form (respirable aerosol) that is different from the forms in which the product is placed on the market and used. Therefore, the test result is not adequate for the purpose of classification and labelling of the product. Based on expert judgement and available data, a modified classification and labeling for acute inhalation toxicity is justified. The generation of a respirable aerosol must be prevented!

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

Type of value: LC50

Species: rat

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

Exposure time: 1 h

An aerosol was tested.

The European Union (EU) has classified this substance as 'harmful'.

The substance from the isocyanate substance class has been tested in a form (respirable aerosol) that is different from the forms in which the product is placed on the market and used. Therefore, the test result is not adequate for the purpose of classification and labelling of the product. Based on expert judgement and available data, a modified classification and labeling for acute inhalation toxicity is justified. The generation of a respirable aerosol must be prevented!

Assessment other acute effects

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

Irritation / corrosion

Assessment of irritating effects: Irritating to eyes, respiratory system and skin. Skin contact may result in dermatitis, either irritative or allergic.

Skin

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

Species: rabbit

Result: Irritant.

Method: OECD Guideline 404

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

Species: rabbit

Result: Irritant.

Method: OECD Guideline 404

Eye

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

Species: rabbit

Result: non-irritant

Method: OECD Guideline 405

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

Species: rabbit

Result: non-irritant

Method: OECD Guideline 405

Sensitization

Assessment of 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

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

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.

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

Buehler test

Species: guinea pig

Result: sensitizing

Mouse Local Lymph Node Assay (LLNA)

Species: mouse

Result: sensitizing

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

No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of 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.

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

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Experimental/calculated data: rat (Wistar) (male/female) Inhalation 2 yrs, 6 hr/day 0, 0.2, 1, 6 mg/m³, olfactory epithelium

NOAEL: 0.2 mg/m³

LOAEL: 1 mg/m³

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.

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/m³, olfactory epithelium

NOAEL: 0.2 mg/m³

LOAEL: 1 mg/m³

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.

Genetic toxicity

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

Carcinogenicity

Assessment of 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. IARC Group 3 (not classifiable as to human carcinogenicity).

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

Assessment of 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. IARC Group 3 (not classifiable as to human carcinogenicity).

Information on: Benzene, 1,1'-methylenebis[4-isocyanato-, homopolymer

Information on: diphenylmethane-2,4'-diisocyanate

Assessment of carcinogenicity: Indication of possible carcinogenic effect in animal tests.

Information on: 1,3-Diazetidine-2,4-dione, 1,3-bis[4-[(4-isocyanatophenyl)methyl]phenyl]-

Assessment of carcinogenicity: Indication of possible carcinogenic effect in animal tests. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Reproductive toxicity

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

Teratogenicity

Assessment of 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.

Other Information

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

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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.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. Based on long-term (chronic) toxicity study data, the product is very likely not harmful to aquatic organisms.

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.

Toxicity to fish

LC0 (96 h) > 1,000 mg/l, Brachydanio rerio (OECD Guideline 203, static)

Aquatic invertebrates

EC50 (24 h) > 1,000 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

Aquatic plants

EC0 (72 h) 1,640 mg/l (growth rate), Scenedesmus subspicatus (OECD Guideline 201, static)

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

OECD Guideline 209 aquatic

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

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

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

Elimination information

0 % BOD of the ThOD (28 d) (OECD Guideline 302 C) (aerobic, activated sludge) Poorly biodegradable.

Assessment of stability in water

In contact with water the substance will hydrolyse slowly.

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Information on Stability in Water (Hydrolysis)

$t_{1/2}$ 20 h (25 °C)

Bioaccumulative potential

Assessment bioaccumulation potential

Does not significantly accumulate in organisms.

Significant accumulation in organisms is not to be expected.

Bioaccumulation potential

Bioconcentration factor: 200 (28 d), Cyprinus carpio (OECD Guideline 305 E)

Mobility in soil

Assessment transport between environmental compartments

Adsorption to solid soil phase is not expected.

The substance will not evaporate into the atmosphere from the water surface.

Adsorption to solid soil phase is not expected.

Additional information

Adsorbable organically-bound halogen(AOX):

This product contains no organically-bound halogen.

Other ecotoxicological advice:

Do not release untreated into natural waters. Do not allow to enter soil, waterways or waste water channels.

13. Disposal considerations

Waste disposal of substance:

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

Container disposal:

Steel drums must be emptied and can be sent to a licensed drum reconditioner for reuse, a scrap metal dealer or an approved landfill. Do not attempt to refill or clean containers since residue is difficult to remove. Under no circumstances should empty drums be burned or cut open with gas or electric torch as toxic decomposition products may be liberated. Do not reuse empty containers.

14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

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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 SDS for the RQ for this product.

Product transported in single container exceeding the Reportable Quantity has to be assigned to RQ, NA3082, OTHER REGULATED SUBSTANCES, Liquid, N.O.S. (MDI), Class 9, Packing Group III.

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

EPCRA 313:

<u>CAS Number</u>	<u>Chemical name</u>
101-68-8	Diphenylmethane-4,4'-diisocyanate (MDI)

<u>CERCLA RQ</u>	<u>CAS Number</u>	<u>Chemical name</u>
5000 LBS	101-68-8	Diphenylmethane-4,4'-diisocyanate (MDI)

State regulations

<u>State RTK</u>	<u>CAS Number</u>	<u>Chemical name</u>
NJ	101-68-8	Diphenylmethane-4,4'-diisocyanate (MDI)
PA	101-68-8	Diphenylmethane-4,4'-diisocyanate (MDI)

Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

WARNING: This product can expose you to chemicals including METHANOL, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

NFPA Hazard codes:

Health: 2 Fire: 1 Reactivity: 1 Special:

HMIS III rating

Health: 2⁺ Flammability: 1 Physical hazard: 1

16. Other Information

SDS Prepared by:

BASF NA Product Regulations
SDS Prepared on: 2022/11/29

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