

SEWERKOTE LLC

Safety Data Sheet Duramer® Hardener Part B

Revision date 01/12/2023

1. Identification

Product identifier used on the label

Duramer® Hardener Part B

Recommended use of the chemical and restriction on use

Recommended use*: Chemical, Industrial

Recommended use*: polyurethane component; industrial chemicals, sewer coating

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:

Sewerkote LLC

607 Ellis Rd Bldg 52 3-4

Durham, NC 27703, USA

Information Telephone (919)5981974

Emergency Telephone: Infotrac (24-hr) (800) 535-5053

Other means of identification

Chemical family: aromatic isocyanates

Synonyms: Carbodiimide Modified MDI

2. Hazards Identification

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

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Classification of the product

Acute Tox. 4 (Inhalation - mist) Acute toxicity

Skin Corr./Irrit. 2 Skin corrosion/irritation

Eye Dam./Irrit. 2B Serious eye damage/eye irritation

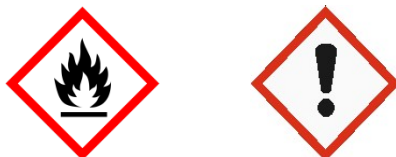
Resp. Sens. 1 Respiratory sensitization

Skin Sens. 1B Skin sensitization

STOT SE 3 (irritating to respiratory system) Specific target organ toxicity — single exposure STOT RE 2 (by inhalation) Specific target organ toxicity — repeated exposure

Label elements

Pictogram:



Signal Word: Danger

Hazard Statement:

H226 Flammable liquid and vapor.

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):

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P280 Wear protective gloves.

P271 Use only outdoors or in a well-ventilated area.

P270 Do not eat, drink or smoke when using this product.

P260 Do not breathe mist or vapour or spray.

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.

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Precautionary Statements (Response):

P301 + P312 + P330 + P331 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth. Do NOT induce vomiting

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P314 Get medical advice/attention if you feel unwell.

P302 + P352 + P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

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):

P403 + P233 + P405 + P235 Store in a well-ventilated place. Keep container tightly closed. Keep cool.

P405 Store locked up.

Precautionary Statements (Disposal):

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

Hazards not otherwise classified

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.

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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): ≥ 50.0 - $< 75.0\%$

Synonym: Diphenylmethane diisocyanate; 4,4'-Methylenediphenyl diisocyanate

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

CAS Number: 39310-05-9

Content (W/W): ≥ 20.0 - $< 25.0\%$

Synonym: 1,1'-Methylenebis[isocyanatobenzene] homopolymer

Methylenediphenyl diisocyanate

CAS Number: 26447-40-5

Content (W/W): ≥ 5.0 - $< 7.0\%$

Synonym: 1,1'-Methylenebis[isocyanatobenzene]; Methylenediphenyl diisocyanate

The exact nature and concentrations of the remaining components are being withheld as trade secrets.

See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

4. First-Aid Measures

Description of first aid measures

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 off immediately with a mild solvent such as propylene glycol methyl ether acetate (PMAC), or soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist or in

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all cases of doubt seek medical advice. Wash contaminated clothing before re-use. 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. Consult a physician.

If swallowed:

If swallowed, call a poison control center or doctor immediately. 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: Methylenediphenyl diisocyanate Symptoms: Overexposure may cause:, Eye irritation, skin irritation, erythema, nausea, headache, vomiting, dizziness, diarrhea, abdominal cramps, Inhalation may provoke the following symptoms:, irritation of respiratory tract, coughing

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

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.

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5. Fire-Fighting Measures

Fire/explosion:

Heated vapors may form explosive mixture with air. Use water spray, water fog, or alcohol resistant foam. NFPA Class 1B flammable liquid.

Extinguishing media

Suitable extinguishing media: water spray, dry powder, carbon dioxide, 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. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. May travel long distances along the ground before igniting and flashing back to vapor source. Fine sprays/mists may be combustible at temperatures below normal flash point. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

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

Evacuate personnel to safe areas. Remove all sources of ignition. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national

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regulations (see section 13). Do not flush into surface water or sanitary sewer system.

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 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. Use only non-sparking tools. Ensure thorough ventilation of stores and work areas. Avoid aerosol formation. Avoid inhalation of dusts/mists/vapours. When handling heated product, vapours of the product should be ventilated, and respiratory protection used. Wear respiratory protection when spraying. Use suitable chemically resistant gloves. 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 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.

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

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: Storage temperature: 16 - 27 °C

Storage/Transport pressure: Ambient

Load/Unload temperature: Ambient

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/m³ ;

Advice on system design:

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

ENGINEERING MEASURES

Air contaminant levels should be controlled below the PEL or TLV for this product (see Exposure Guidelines). Ensure adequate ventilation, especially in confined areas. Use explosion-proof equipment.

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), butyl rubber, depending upon conditions of use.

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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 of it if necessary.

EXPOSURE GUIDELINES

Component Exposure limit(s)

No established workplace exposure guidelines exist for this product or components.

PEL= Permissible Exposure Limits

TWA= Time Weighted Average (8 hr.)

TLV= Threshold Limit Value

STEL= Short Term Exposure Limit (15 min.)

EL= Excursion Limit

WEEL= Workplace Environmental Exposure Level

9. Physical and Chemical Properties

Form: liquid/paste

Odour: faintly aromatic

Odour threshold: not applicable

Colour: Depends on grade – blue, green, black, yellow

pH value: not applicable

Freezing point: 5 °C

Melting point: No data available.

Boiling point: 200.00 °C (5.000000 mmHg)

Sublimation point: No applicable information available.

Flash point: > 200 °C (open cup)

Flammability: not flammable (derived from flash point)

Flammability (liquid): No data

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Flammability (solid, gas): No data

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: : > 470 °C

Decomposition temperature: No data available

Vapour pressure: 0.00001 mmHg (25.00 °C)

Specific gravity: 0.8g/cm³ @ 20 °C, 68 °F

Density: 1.2174 g/cm³ (20 °C)

Relative density: No applicable information available.

Bulk density: 10.1600 lb/USg (25 °C)

Vapour density: not applicable

Partitioning coefficient noctanol/water (log Pow): not applicable

Self-ignition temperature: not self-igniting

Thermal decomposition: No decomposition if stored and handled as prescribed/indicated. Viscosity, dynamic: 40.000 mPa.s (25 °C)

Viscosity, kinematic: No applicable information available.

Solubility in water: Reacts with water.

Miscibility with water: Reacts with water.

Water Solubility: Insoluble.

Molar mass: No data available.

Evaporation rate: Value can be approximated from Henry's Law Constant or vapor pressure

Volatile organic compounds (VOC) content: Other; See Section 15

Other Information: If necessary, information on other physical and chemical parameters is indicated in this section.

10. Stability and Reactivity

Reactivity

Heated vapors or finely-dispersed mists may form explosive mixture with air.

Oxidizing agents may form explosive peroxides.

Corrosion to metals:

No corrosive effect on metal.

Chemical stability

The product is stable with no decomposition if stored and handled as prescribed/indicated.

Possibility of 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 polymeriza-

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

Conditions to avoid

Avoid moisture. Extremes of temperature and direct sunlight. Heat, flames and sparks.

Incompatible materials

alcohols, water, Alkalines, strong bases, Substances/products that react with isocyanates. Keep away from oxidizing agents, strongly acid or alkaline materials and amines. Keep away from reducing agents.

Hazardous decomposition products

In case of fire hazardous decomposition products may be produced such as: Carbon oxides

Decomposition products:

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

Thermal decomposition: No decomposition if stored and handled as prescribed/indicated.

Hazardous polymerization:

Hazardous polymerization does not occur.

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.

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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)

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.

Dermal

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

Type of value: LD50

Species: rabbit (male/female)

Value: > 9,400 mg/kg

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

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Eye

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 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)

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 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.

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

Assessment of sensitization:

Sensitization after skin contact possible.

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)

Experimental/calculated data: similar to OECD guideline 453 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. -----

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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.

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

Genetic toxicity in vitro: OECD Guideline 471 Ames-test Salmonella typhimurium:with and without metabolic activation ambiguous

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

Genetic toxicity in vivo: OECD Guideline 474 Micronucleus assay rat (male) Inhalation negative No clastogenic effect reported.

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: Methylenediphenyl diisocyanate

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). -----

Experimental/calculated data: OECD Guideline 453 rat Inhalation 0, 0.2, 1, 6 mg/m³ Result: Lung tumors

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.

Development

OECD Guideline 414 rat Inhalation 0, 1, 4, 12 mg/m³

NOAEL Mat.: 4 mg/m³

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NOAEL Teratog.: 4 mg/m³ 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.

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)

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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.

Information on Stability in Water (Hydrolysis)

t_{1/2} 20 h (25 °C)

Bioaccumulative potential

Assessment bioaccumulation potential

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

The substance will not evaporate into the atmosphere from the water surface. Adsorption to solid soil phase is not expected.

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13. Disposal considerations

Waste Code

D001 - Ignitability. Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures, contamination, and spillage may change the classification.

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.

Disposal methods

Dispose of only in accordance with local, state, and federal regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

Empty containers.

Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, triple-rinsed, properly bunged and promptly returned to a drum reconditioner, or properly disposed.

14. Transport Information

DOT Not regulated in non-bulk containers

Land transport USDOT 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

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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.

15. Regulatory Information

U.S. FEDERAL REGULATIONS

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.

CERCLA RQ 5000 LBS

CAS Number 101-68-8

Chemical name Diphenylmethane-4,4'-diisocyanate (MDI)

State regulations

State RTK

CAS Number

Chemical name

NJ

101-68-8

Diphenylmethane-4,4'-diisocyanate (MDI)

PA

101-68-8

Diphenylmethane-4,4'-diisocyanate (MDI)

TSCA Inventory Listing

All chemical substances in this product are either on the TSCA Active Inventory, or in compliance with the inventory.

SARA 302 Status

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Chemical Components No components listed

US. EPA CERCLA Hazardous Substances (40 CFR 302)

NFPA Hazard codes:

Health: 2 Fire: 1 Reactivity: 1 Special:

HMIS III rating

Health: 2^a Flammability: 1 Physical hazard: 1

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16. Other Information

SDS Prepared by:

Sewerkote LLC

SDS Prepared on: 01/12/2023

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.

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END OF DATA SHEET