

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1 Product identifier.

Product Name: ACE PUR 200 FR A

1.2 Relevant identified uses of the substance or mixture and uses advised against.

Use of the Substance/Mixture : Component of a Polyurethane System.

1.3 Details of the supplier of the safety data sheet.

Company: ACE COATINGS
Address: Campo Sagrado, 1133205
City: Gijón
Province: Asturias
Telephone: +34 985 323 328
E-mail: info@acecoatings.com
Web: www.acecoatings.com

1.4 Emergency telephone number: (Available 24 hours)
Telephone number
+34 977 822 245 (Only available during office hours)
EUROPE: +32 35 75 1234

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)
Acute toxicity, Category 4-H332: Harmful if inhaled.
Skin irritation, Category 2-H315: Causes skin irritation.
Eye irritation, Category 2-H319: Causes serious eye irritation
Respiratory sensitisation, Category 1-H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation, Category 1-H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2-H351: Suspected of causing cancer.
Specific target organ toxicity - single exposure, Category 3, Respiratory system-H335: May cause respiratory irritation.

Specific target organ toxicity - repeated exposure, Category 2-H373: May cause damage to organs through prolonged or repeated exposure.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.

P260 Do not breathe mist or vapours.

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/ doctor if you feel unwell.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Hazardous components which must be listed on the label:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate
4,4'-methylenediphenyl diisocyanate
4,4'-Methylenediphenyl diisocyanate, oligomers

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Additional Labelling:

"As from 24 August 2023 adequate training is required before industrial or professional use."

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
.Alpha.-hydro-.omega.-hydroxypoly[oxy(methyl-1,2-ethanediyl)], polymer with 1,1'-methylenebis[isocyanatobenzene]	39420-98-9 Polymer	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 Carc. 2; H351 STOT SE 3; H335 (Respiratory system) STOT RE 2; H373 (Respiratory Tract)	>= 50 - < 70
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate	- 01-2119457015-45	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 Carc. 2; H351 STOT SE 3; H335 (Respiratory system) STOT RE 2; H373 (Respiratory Tract)	>= 20 - < 30

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4,4'-methylenediphenyl diisocyanate	101-68-8 202-966-0 615-005-00-9 01-2119457014-47	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 Carc. 2; H351 STOT SE 3; H335 (Respiratory system) STOT RE 2; H373 (Respiratory system) specific concentration limit Eye Irrit. 2; H319 ≥ 5 % STOT SE 3; H335 ≥ 5 % Skin Irrit. 2; H315 ≥ 5 % Resp. Sens. 1; H334 ≥ 0,1 %	≥ 10 - < 20
4,4'-Methylenediphenyl diisocyanate, oligomers	- 500-040-3 01-2119457013-49	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 Carc. 2; H351 STOT SE 3; H335 (Respiratory system) STOT RE 2; H373 (Respiratory Tract)	≥ 1 - < 10

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

-General advice :

Move out of dangerous area.

Do not leave the victim unattended.

Get medical attention immediately if symptoms occur.

Show this safety data sheet to the doctor in attendance.

-Protection of first-aiders :

No action shall be taken involving any personal risk or without suitable training.

It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

If potential for exposure exists refer to Section 8 for specific personal protective equipment.

First Aid responders should pay attention to self-protection and use the recommended protective clothing

-If inhaled :

Call a physician or poison control centre immediately.

Keep patient warm and at rest.

Keep respiratory tract clear.

If breathing is difficult, give oxygen.

If breathing is irregular or stopped, administer artificial respiration.

If unconscious, place in recovery position and seek medical advice.

Consult a physician immediately if symptoms such as shortness of breath or asthma are observed.

A hyper-reactive response to even minimal concentrations of diisocyanates may develop in sensitised persons.

The exposed person may need to be kept under medical surveillance for 48 hours.

LC50 (rat) : ca. 490 mg/m³ (4 hours) : using experimentally produced respirable aerosol having aerodynamic diameter <5microns.

Methods used to generate the exposure concentrations in the animal studies use extreme laboratory conditions and does not represent actual exposure conditions of the material in the workplace, storage, transportation or expected use on the market due to the very low vapor pressure. Therefore, these test results cannot be used to for hazard classification of the material. Rather, an acute toxicity estimate is calculated based on weight of evidence and expert judgement and is used to justify a modified classification for acute inhalation toxicity.

-In case of skin contact :

In case of contact, immediately flush skin with soap and plenty of water.

Take off contaminated clothing and shoes immediately.

Wash contaminated clothing before reuse.

Thoroughly clean shoes before reuse.

Call a physician if irritation develops or persists.

An MDI study has demonstrated that a polyglycol-based skin cleanser (such as D-Tam™, PEG-400) or corn oil may be more effective than soap and water.

-In case of eye contact :

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

If easy to do, remove contact lens, if worn.

Protect unharmed eye.

Keep eye wide open while rinsing.

Seek medical advice.

-If swallowed :

Gently wipe or rinse the inside of the mouth with water.

DO NOT induce vomiting unless directed to do so by a physician or poison control center.

Keep respiratory tract clear.

Keep at rest.

If a person vomits when lying on his back, place him in the recovery position.

Never give anything by mouth to an unconscious person.

Take victim immediately to hospital.

If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

-Symptoms : Severe allergic skin reactions, bronchospasm and anaphylactic shock

-Risks : This product is a respiratory irritant and potential respiratory sensitizer: repeated inhalation of vapour or aerosol at levels above the occupational exposure limit could cause respiratory sensitisation.

Symptoms may include irritation to the eyes, nose, throat and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing.

The onset of the respiratory symptoms may be delayed for several hours after exposure.

A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

-Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Foam, Carbon dioxide (CO₂), Dry powder.

-Unsuitable extinguishing media: Water may be used if no other available and then in copious quantities. Reaction between water and hot isocyanate may be vigorous.

5.2 Special hazards arising from the substance or mixture

-Specific hazards during firefighting: Do not allow run-off from fire fighting to enter drains or water courses. The pressure in sealed containers can increase under the influence of heat. Exposure to

decomposition products may be a hazard to health.

-Hazardous combustion products: Combustion products may include: carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbons and HCN. In the event of extreme heat (>500 degrees C), aniline is suspected of being formed. Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Local authorities should be advised if significant spillages cannot be contained.

If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

-Methods for cleaning up : Clean-up methods - small spillage Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

Clean contaminated surface thoroughly.

Sweep up or vacuum up spillage and collect in suitable container for disposal.

Neutralize small spillages with decontaminant.

The compositions of liquid decontaminants are given in Section 16.

Remove and dispose of residues.

Clean-up methods - large spillage if the product is in its solid form:

Spilled MDI flakes should be picked up carefully.

The area should be vacuum cleaned to remove remaining dust particles completely.

If the product is in its liquid form:

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Leave to react for at least 30 minutes.

Shovel into open-top drums for further decontamination.

Wash the spillage area with water.

Test atmosphere for MDI vapour.

Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13., The compositions of liquid decontaminants are given in Section 16.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

-Technical measures : Ensure that eyewash stations and safety showers are close to the workstation location.

-Local/Total ventilation : Use only with adequate ventilation.

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-Advice on safe handling :

For personal protection see section 8.

Avoid formation of aerosol.

Do not breathe vapours or spray mist.

Do not breathe vapours/dust.

Do not swallow.

Do not get in eyes or mouth or on skin.

Do not get on skin or clothing.

Avoid exposure - obtain special instructions before use.

Smoking, eating and drinking should be prohibited in the application area.

Provide sufficient air exchange and/or exhaust in work rooms.

Keep container closed when not in use.

Open drum carefully as content may be under pressure.

Dispose of rinse water in accordance with local and national regulations.

Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Industrial use of aprotic polar solvents for cleaning can release hazardous primary aromatic amines (>0.1%)

-Advice on protection against fire and explosion: Normal measures for preventive fire protection.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep containers tightly closed in a dry, cool and wellventilated place. Keep in properly labelled containers. Observe label precautions. Protect from moisture. Electrical installations / working materials must comply with the technological safety standards. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

-Advice on common storage : For incompatible materials please refer to Section 10 of this SDS.

-Further information on storage stability: Stable under normal conditions.

7.3 Specific end use(s)

Specific use(s) : No data available

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
4,4'-methylenediphenyl diisocyanate	101-68-8	VLA-ED	0,005 ppm 0,052 mg/m ³	ES VLA
Further information	Sensitizer agent			

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
4,4'-methylenediphenyl diisocyanate	Workers	Inhalation	Long-term local effects	0,05 mg/m ³
	Workers	Inhalation	Acute local effects	0,1 mg/m ³
	Consumers	Inhalation	Long-term local effects	0,025 mg/m ³
	Consumers	Inhalation	Acute local effects	0,05 mg/m ³
4,4'-Methylenediphenyl diisocyanate, oligomers	Workers	Inhalation	Long-term systemic effects	0,05 mg/m ³
	Workers	Inhalation	Acute systemic effects	0,1 mg/m ³
	Workers	Inhalation	Long-term local effects	0,05 mg/m ³
	Workers	Inhalation	Acute local effects	0,1 mg/m ³
	Workers	Dermal	Acute systemic effects	50 mg/kg bw/day
	Workers	Dermal	Acute local effects	28,7 mg/cm ²
	Consumers	Inhalation	Long-term systemic effects	0,025 mg/m ³
	Consumers	Inhalation	Acute systemic effects	0,05 mg/m ³
	Consumers	Inhalation	Long-term local effects	0,025 mg/m ³
	Consumers	Inhalation	Acute local effects	0,05 mg/m ³
	Consumers	Dermal	Acute systemic effects	25 mg/kg bw/day

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	Consumers	Dermal	Acute local effects	17,2 mg/cm ²
	Consumers	Oral	Acute systemic effects	20 mg/kg bw/day
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate	Workers	Inhalation	Long-term local effects	0,05 mg/m ³
	Workers	Inhalation	Acute local effects	0,1 mg/m ³
	Consumers	Inhalation	Long-term local effects	0,025 mg/m ³
	Consumers	Inhalation	Acute local effects	0,05 mg/m ³

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
4,4'-methylenediphenyl diisocyanate	Fresh water	3,7 µg/l
Remarks:	Assessment Factors	
	Freshwater - intermittent	37 µg/l
	Assessment Factors	
	Marine water	0,37 µg/l
	Assessment Factors	
	Fresh water sediment	11,7 mg/kg dry weight (d.w.)
	Equilibrium method	
	Marine sediment	1,17 mg/kg dry weight (d.w.)
	Equilibrium method	
	Soil	2,33 mg/kg dry weight (d.w.)
	Equilibrium method	

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4,4'-Methylenediphenyl diisocyanate, oligomers	Fresh water	1 mg/l
	Marine water	0,1 mg/l
	Sewage treatment plant	1 mg/l
	Soil	1 mg/kg dry weight (d.w.)
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate	Fresh water	1 mg/l
	Marine water	0,1 mg/l
	Intermittent use/release	10 mg/l
	Sewage treatment plant	1 mg/l
	Soil	1 mg/kg dry weight (d.w.)

8.2 Exposure controls

Personal protective equipment

-Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Chemical splash goggles.

Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.

Ensure that eyewash stations and safety showers are close to the workstation location.

-Hand protection:

Remarks : Protective gloves should be worn when handling freshly made polyurethane products to avoid contact with trace residual materials which may be hazardous in contact with skin.

Use chemical resistant gloves classified under Standard EN374: protective gloves against chemicals and microorganisms. Examples of glove materials that might provide suitable protection include: Butyl rubber, Chlorinated polyethylene, Polyethylene, Ethyl vinyl alcohol copolymers laminated ("EVAL"), Polychloroprene (Neoprene*), Nitrile/butadiene rubber ("nitrile" or "NBR"), Polyvinyl chloride ("PVC" or "vinyl"), Fluoroelastomer (Viton*).

When prolonged or frequently repeated contact may occur, a glove with protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN374) is recommended.

When only brief contact is expected, a glove with protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN374) is recommended.

Notice: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all requisite workplace factors such as, but not limited to : other chemicals that may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), as well as instructions/specifications provided by the glove supplier. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. By industrial use of aprotic polar solvents for cleaning : Butyl rubber (0.7mm), Nitrile rubber (0.4mm), Chloroprene (0.5mm)

-Skin and body protection :

Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Recommended:

Overall (preferably heavy cotton) or Tyvek-Pro Tech 'C' , Tyvek Pro 'F' disposable coverall.

-Respiratory protection :

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

In emergency, non-routine and unknown exposure situations, including confined space entries, a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied air respirator (SAR) with auxiliary self-contained air supply, should be used.

-Protective measures :

Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Ensure that eye flushing systems and safety showers are located close to the working place.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : light yellow

Odour : No data is available on the product itself.

Odour Threshold : No data is available on the product itself.

pH : substance/mixture reacts with water

Melting point/freezing point : No data is available on the product itself.

Boiling point : > 300 °C

Flash point : 175 °C

Method: ASTM D 92, open cup

Flammability (solid, gas) : No data is available on the product itself.
Upper explosion limit / Upper flammability limit: No data is available on the product itself.
Lower explosion limit / Lower flammability limit: No data is available on the product itself.
Vapour pressure : No data is available on the product itself.
Relative vapour density : No data is available on the product itself.
Relative density : 1,11 (25 °C)
Density : 1,11 g/cm³ (25 °C)
Solubility(ies)
Water solubility : No data is available on the product itself.
Solubility in other solvents : No data is available on the product itself.
Partition coefficient: noctanol/water : No data is available on the product itself.
Auto-ignition temperature : No data is available on the product itself.
Decomposition temperature : No data is available on the product itself.
Viscosity
Viscosity, dynamic : 765 mPa.s (25 °C)

9.2 Other information
No data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
No dangerous reaction known under conditions of normal use.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions : Reaction with water (moisture) produces CO₂-gas.
Exothermic reaction with materials containing active hydrogen groups.
The reaction becomes progressively more vigorous and can be violent at higher temperatures if the miscibility of the reaction partners is good or is supported by stirring or by the presence of solvents.
MDI is insoluble with, and heavier than water and sinks to the bottom but reacts slowly at the interface. A solid water-insoluble layer of polyurea is formed at the interface by liberating carbon dioxide gas.

10.4 Conditions to avoid
Conditions to avoid : Extremes of temperature and direct sunlight.
Exposure to air or moisture over prolonged periods.

10.5 Incompatible materials

Materials to avoid : Acids, Amines, Bases, Metals, water

10.6 Hazardous decomposition products

Combustion products may include: carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbons and HCN. In the event of extreme heat (>500 degrees C), aniline is suspected of being formed.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Acute oral toxicity : LD50 (Rat, male): > 10 000 mg/kg

Method: OECD Test Guideline 401

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Acute oral toxicity : LD50 (Rat, male and female): > 2 000 mg/kg

Assessment: The substance or mixture has no acute oral toxicity

4,4'-Methylenediphenyl diisocyanate, oligomers:

Acute oral toxicity : LD50 (Rat, female): > 5 000 mg/kg

Method: OECD Test Guideline 425

Acute inhalation toxicity -Product:

Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.

Remarks: Methods used to generate the exposure concentrations in the animal studies use extreme laboratory conditions and does not represent actual exposure conditions of the material in the workplace, storage, transportation or expected use on the market due to the very low vapor pressure. Therefore, these test results cannot be used to for hazard classification of the material. Rather, an acute toxicity estimate is calculated based on weight of evidence and expert judgement and is used to justify a modified classification for acute inhalation toxicity.

Acute toxicity estimate : 1,45 mg/l

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Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Acute dermal toxicity : LD50 (Rabbit, male and female): > 9 400 mg/kg

Method: OECD Test Guideline 402

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Acute dermal toxicity : LD50 (Rabbit, male and female): > 9 400 mg/kg

Method: OECD Test Guideline 402

4,4'-methylenediphenyl diisocyanate:

Acute dermal toxicity : LD50 (Rabbit): > 9 400 mg/kg

Remarks: Information given is based on data obtained from similar substances.

Acute toxicity (other routes of administration): No data available

Skin corrosion/irritation

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Species: Rabbit

Assessment: Irritant

Method: OECD Test Guideline 404

Result: Irritating to skin.

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Irritating to skin.

4,4'-methylenediphenyl diisocyanate:

Species: Rabbit

Assessment: Irritating to skin.

Method: OECD Test Guideline 404

Result: Irritating to skin.

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4,4'-Methylenediphenyl diisocyanate, oligomers:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Irritating to skin.

Serious eye damage/eye irritation

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Species: Rabbit

Assessment: Irritant

Method: No information available.

Result: Mild eye irritation

Remarks: Mild eye irritation

largely based on human evidence

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Species: Rabbit

Method: OECD Test Guideline 405

Result: Mild eye irritation

4,4'-methylenediphenyl diisocyanate:

Species: Rabbit

Method: OECD Test Guideline 405

Result: Mild eye irritation

4,4'-Methylenediphenyl diisocyanate, oligomers:

Species: Rabbit

Method: OECD Test Guideline 405

Result: Mild eye irritation

Respiratory or skin sensitisation

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Exposure routes: Skin

Species: Mouse

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Assessment: May cause sensitisation by skin contact.

Result: Causes sensitisation.

Exposure routes: Respiratory Tract

Species: Guinea pig

Assessment: May cause sensitisation by inhalation.

Result: Causes sensitisation.

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

Exposure routes: Respiratory Tract

Species: Guinea pig

Result: May cause sensitisation by inhalation.

4,4'-methylenediphenyl diisocyanate:

Exposure routes: Skin

Species: Guinea pig

Assessment: May cause sensitisation by skin contact.

Method: OECD Test Guideline 406

Result: Probability or evidence of skin sensitisation in humans

Test Type: Local lymph node assay (LLNA)

Exposure routes: Respiratory Tract

Species: Guinea pig

Result: May cause sensitisation by inhalation.

4,4'-Methylenediphenyl diisocyanate, oligomers:

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

Exposure routes: Respiratory Tract

Species: Guinea pig

Result: May cause sensitisation by inhalation.

Components:

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Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Assessment: Mild eye irritation

4,4'-methylenediphenyl diisocyanate:

Assessment: May cause allergy or asthma symptoms or breathing difficulties if inhaled., May cause an allergic skin reaction.

Germ cell mutagenicity

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Genotoxicity in vitro : Concentration: 200 ug/plate

Metabolic activation: with and without metabolic activation

Method: Directive 67/548/EEC, Annex, B.13/14

Result: negative

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Genotoxicity in vitro : Concentration: 200 ug/plate

Metabolic activation: with and without metabolic activation

Method: Directive 67/548/EEC, Annex, B.13/14

Result: negative

4,4'-methylenediphenyl diisocyanate:

Genotoxicity in vitro : Test Type: reverse mutation assay

Concentration: 200 ug/plate

Metabolic activation: with and without metabolic activation

Method: Directive 67/548/EEC, Annex, B.13/14

Result: negative

4,4'-Methylenediphenyl diisocyanate, oligomers:

Genotoxicity in vitro : Concentration: ca 50 ug/plate

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Components:

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Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Genotoxicity in vivo : Application Route: Inhalation

Exposure time: 3 Weeks

Dose: 118 mg/m³

Method: OECD Test Guideline 474

Result: negative

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Genotoxicity in vivo : Application Route: Inhalation

Exposure time: 3 w

Dose: 118 mg/m³

Method: OECD Test Guideline 474

Result: negative

4,4'-methylenediphenyl diisocyanate:

Genotoxicity in vivo : Test Type: Chromosome aberration test in vitro

Test species: Rat (male)

Cell type: Somatic

Application Route: Inhalation

Exposure time: 3 Weeks

Dose: 113 mg/m³

Method: OECD Test Guideline 474

Result: negative

Test Type: comet assay

Test species: Rat (male)

Cell type: Liver cells

Application Route: inhalation (dust/mist/fume)

Dose: 2.5/4.9/12 mg/m³

Method: OECD Test Guideline 489

Result: negative

4,4'-Methylenediphenyl diisocyanate, oligomers:

Genotoxicity in vivo : Application Route: Inhalation

Exposure time: 3 w

Dose: 118 mg/m³

Method: OECD Test Guideline 474

Result: negative

Germ cell mutagenicityAssessment: No data available

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Carcinogenicity

Product:

Remarks: Rats have been exposed for two years to a respirable aerosol of polymeric MDI which resulted in a chronic pulmonary irritation at high concentrations. Only at the top level (6 mg/m³), there was a significant incidence of a benign tumour of the lung (adenoma) and one malignant tumour (adenocarcinoma). There were no lung tumours at 1 mg/m³ and no effects at 0.2 mg/m³. Overall, the tumour incidence, both benign and malignant, and the number of animals with the tumours were not different from controls. The increased incidence of lung tumours is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung, which occurred throughout the study. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumour formation will occur.

Remarks: Industrial use of aprotic polar solvents for cleaning can release hazardous primary aromatic amines (>0.1%)

Based on animal studies, primary aromatic amines are considered as potential carcinogen to humans. Some of those chemicals are proven carcinogens to humans

Provided the recommended personal protective equipment and hygiene measures are applied, no adverse effects to human health are to be expected.

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Carcinogenicity -Assessment: Limited evidence of carcinogenicity in animal studies

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl

isocyanate: Carcinogenicity -Assessment: Limited evidence of carcinogenicity in animal studies

4,4'-methylenediphenyl diisocyanate:

Carcinogenicity -Assessment: Suspected human carcinogens

4,4'-Methylenediphenyl diisocyanate, oligomers:

Carcinogenicity -Assessment: Limited evidence of carcinogenicity in animal studies

Reproductive toxicity

Components:

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Effects on fertility : Species: Rat, male and female

Application Route: Inhalation

Method: OECD Test Guideline 414

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Result: No effects on fertility and early embryonic development were detected.

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Effects on foetal development: Species: Rat, male and female

Application Route: Inhalation

Method: OECD Test Guideline 414

Result: No teratogenic effects

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Species: Rat, female

Application Route: Inhalation

General Toxicity Maternal: No observed adverse effect level: 4mg/m³

Method: OECD Test Guideline 414

Result: No teratogenic effects

4,4'-methylenediphenyl diisocyanate:

Test Type: Pre-natal

Species: Rat, female

Application Route: Inhalation

Dose: 0/1/3/9 mg/m³

Duration of Single Treatment: 10 d

Frequency of Treatment: 7 days/week

General Toxicity Maternal: Lowest observed adverse effect level: 9 mg/m³

Developmental Toxicity: No observed adverse effect concentration: 3 mg/m³

Method: OECD Test Guideline 414

Method: OECD Test Guideline 443

4,4'-Methylenediphenyl diisocyanate, oligomers:

Species: Rat, male and female

Application Route: Inhalation

Method: OECD Test Guideline 414

Result: No teratogenic effects

Reproductive toxicity -Assessment: No data available

STOT - single exposure

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Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Exposure routes: inhalation (dust/mist/fume)

Target Organs: Respiratory Tract

Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

4,4'-methylenediphenyl diisocyanate:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

4,4'-Methylenediphenyl diisocyanate, oligomers:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

STOT - repeated exposure

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause damage to organs through prolonged or repeated exposure.

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause damage to organs through prolonged or repeated exposure.

4,4'-methylenediphenyl diisocyanate:

Exposure routes: Inhalation

Target Organs: Respiratory system

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Assessment: May cause damage to organs through prolonged or repeated exposure.

4,4'-Methylenediphenyl diisocyanate, oligomers:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Species: Rat, male and female

NOEC: 0,2

Exposure time: 2 yrNumber of exposures: 5 d

Method: OECD Test Guideline 453

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Species: Rat, male and female

NOEC: 0,2

Test atmosphere: dust/mist

Exposure time: 2 yrNumber of exposures: 5 d

Method: OECD Test Guideline 453

4,4'-methylenediphenyl diisocyanate:

Species: Rat, female

LOEC: 0,23

Test atmosphere: dust/mist

Exposure time: 2 years 17 hNumber of exposures: 5 days/week

Dose: 0, 0.2, 0.7, 2.1 mg/m³

Method: Chronic toxicity

4,4'-Methylenediphenyl diisocyanate, oligomers:

Species: Rat, male and female

NOEC: 0,2

Test atmosphere: dust/mist

Exposure time: 2 yrNumber of exposures: 5 d

Method: OECD Test Guideline 453

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Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:
Repeated dose toxicity -Assessment: Mild eye irritation
Aspiration toxicity: No data available

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution: No data available

Neurological effects: No data available

Further information

Ingestion: No data available

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

-Toxicity to fish :

LC50 (Brachydanio rerio (zebrafish)): > 1 000 mg/l

Exposure time: 96 h

Test Type: static test

Method: OECD Test Guideline 203

-Toxicity to daphnia and other aquatic invertebrates:

EC50 (Daphnia magna (Water flea)): > 1 000 mg/l

Exposure time: 24 h

Test Type: static test

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Test substance: Fresh water

Method: OECD Test Guideline 202

-Toxicity to microorganisms :

EC50 (activated sludge): > 100 mg/l

Exposure time: 3 h

Test Type: static test

Test substance: Fresh water

Method: OECD Test Guideline 209

-Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity):

NOEC: >= 10 mg/l

Exposure time: 21 d

Species: Daphnia magna (Water flea)

Test Type: semi-static test

Test substance: Fresh water

Method: OECD Test Guideline 211

-Toxicity to soil dwelling organisms:

NOEC: >= 1 000 mg/kg

Exposure time: 336 h

Species: Eisenia fetida (earthworms)

Method: OECD Test Guideline 207

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

-Toxicity to fish :

LC50 (Brachydanio rerio (zebrafish)): > 1 000 mg/l

Exposure time: 96 h

Test Type: static test

Test substance: Fresh water

Method: OECD Test Guideline 203

-Toxicity to daphnia and other aquatic invertebrates:

EC50 (Daphnia magna (Water flea)): > 1 000 mg/l

Exposure time: 24 h

Test Type: static test

Test substance: Fresh water

Method: OECD Test Guideline 202

-Toxicity to algae/aquatic plants:

EC50 (Desmodesmus subspicatus (green algae)): > 1 640 mg/l

Exposure time: 72 h

Test Type: static test

Test substance: Fresh water

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Method: OECD Test Guideline 201

-Toxicity to microorganisms :

EC50 (activated sludge): > 100 mg/l

Exposure time: 3 h

Test Type: static test

Test substance: Fresh water

Method: OECD Test Guideline 209

-Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity):

NOEC: >= 10 mg/l

Exposure time: 21 d

Species: Daphnia magna (Water flea)

Test Type: semi-static test

Test substance: Fresh water

Method: OECD Test Guideline 211

-Toxicity to soil dwelling organisms:

EC50: > 1 000 mg/kg

Exposure time: 336 h

Species: Eisenia fetida (earthworms)

Method: OECD Test Guideline 207

4,4'-methylenediphenyl diisocyanate:

-Toxicity to fish :

LC50 (Brachydanio rerio (zebrafish)): > 100 mg/l

End point: mortality

Exposure time: 96 h

Test substance: Fresh water

Method: OECD Test Guideline 203

-Toxicity to daphnia and other aquatic invertebrates:

EL50 (Daphnia magna (Water flea)): 9 mg/l

Exposure time: 48 h

Test Type: semi-static test

Test substance: Fresh water

Method: OECD Test Guideline 202

-Toxicity to algae/aquatic plants:

EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l

Exposure time: 72 h

Test Type: static test

Test substance: Fresh water

Method: OECD Test Guideline 201

GLP: yes

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Remarks: Information given is based on data obtained from similar substances.

-Toxicity to microorganisms :

EC50 (activated sludge): > 1 000 mg/l

Exposure time: 3 h

Test Type: static test

Method: OECD Test Guideline 209

-Toxicity to daphnia and other aquatic invertebrates:

NOEC: >= 10 mg/l

Exposure time: 21 d

(Chronic toxicity) Species: Daphnia magna (Water flea)

Test Type: semi-static test

Test substance: Fresh water

Method: OECD Test Guideline 211

Remarks: Information given is based on data obtained from similar substances.

-Toxicity to soil dwelling organisms:

NOEC: >= 1 000 mg/kg

Exposure time: 336 h

Species: Eisenia fetida (earthworms)

Method: OECD Test Guideline 222

Plant toxicity : EC50: >1000 milligram per kilogram

Exposure time: 14 d

Species: Avena sativa (oats)

EC50: >1000 milligram per kilogram

Exposure time: 14 d

Species: Lactuca sativa (lettuce)

4,4'-Methylenediphenyl diisocyanate, oligomers:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 1 000 mg/l

Exposure time: 96 h

Test Type: static test

Test substance: Fresh water

Method: OECD Test Guideline 203

-Toxicity to daphnia and other aquatic invertebrates:

EC50 (Daphnia magna (Water flea)): > 1 000 mg/l

Exposure time: 24 h

Test Type: static test

Test substance: Fresh water

Method: OECD Test Guideline 202

-Toxicity to algae/aquatic plants:

EC50 (Desmodesmus subspicatus (green algae)): > 1 640 mg/l

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Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201
-Toxicity to microorganisms :
EC50 (activated sludge): > 100 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 209
-Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity):
NOEC: >= 10 mg/l
Exposure time: 21 d
Species: Brachydanio rerio (zebrafish)
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 211
-Toxicity to soil dwelling organisms:
EC50: > 1 000 mg/kg
Exposure time: 336 h
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 207

12.2 Persistence and degradability

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:

Biodegradability : Inoculum: Domestic sewage

Concentration: 30 mg/l

Result: Not biodegradable

Biodegradation: 0 %

Exposure time: 28 d

Method: Inherent Biodegradability: Modified MITI Test (II)

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:

Biodegradability : Inoculum: Domestic sewage

Concentration: 30 mg/l

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Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: Inherent Biodegradability: Modified MITI Test (II)

4,4'-methylenediphenyl diisocyanate:
Biodegradability : Test Type: aerobic
Inoculum: activated sludge, non-adapted
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Stability in water : Degradation half life (DT50): 20 hrs (25 °C)
Remarks: Fresh water

4,4'-Methylenediphenyl diisocyanate, oligomers:
Biodegradability : Inoculum: Domestic sewage
Concentration: 30 mg/l
Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: Inherent Biodegradability: Modified MITI Test (II)

12.3 Bioaccumulative potential

Components:
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]:
Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 200
Remarks: Bioaccumulation is unlikely.
Partition coefficient: noctanol/water: log Pow: 4,51 (20 °C)
pH: 7
Method: OECD Test Guideline 117

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate:
Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 200
Remarks: Bioaccumulation is unlikely.

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Bioconcentration factor (BCF): 439
Remarks: Bioaccumulation is unlikely.
Partition coefficient: noctanol/water: log Pow: 4,51 (22 °C)
pH: 7
Method: OECD Test Guideline 117

4,4'-methylenediphenyl diisocyanate:
Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 28 d
Concentration: 0.08 µg/l
Bioconcentration factor (BCF): 200
Method: OECD Test Guideline 305
Remarks: Bioaccumulation is unlikely.
Partition coefficient: noctanol/water: log Pow: 4,52 (20 °C)
pH: 7
Method: OECD Test Guideline 117

4,4'-Methylenediphenyl diisocyanate, oligomers:
Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 200
Remarks: Bioaccumulation is unlikely.
Partition coefficient: noctanol/water: log Pow: 8,56 (20 °C)

12.4 Mobility in soil

Components:

4,4'-methylenediphenyl diisocyanate:
Distribution among environmental compartments:
Koc: 4,5
Method: QSAR
Stability in soil : Soil temperature: 22 °C
Dissipation time: 24 h
Method: OECD Test Guideline 307

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

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12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product : Do not dispose of waste into sewer.

Do not contaminate ponds, waterways or ditches with chemical or used container.

Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.

Dispose of as unused product.

Do not re-use empty containers.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number or ID number

Not regulated as dangerous goods

14.2 UN proper shipping name

Not regulated as dangerous goods

14.3 Transport hazard class(es)

Not regulated as dangerous goods

14.4 Packing group

Not regulated as dangerous goods

14.5 Environmental hazards

Not regulated as dangerous goods

14.6 Special precautions for user

Not applicable

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14.7 Maritime transport in bulk according to IMO instruments
Not applicable for product as supplied.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - List of substances subject to authorisation (Annex XIV): Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Conditions of restriction for the following entries should be considered: Number on list 3

4,4'-methylenediphenyl diisocyanate
(Number on list 74, 56)

2,4'-methylenediphenyl diisocyanate
(Number on list 74, 56)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances: Not applicable

Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

The components of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

AIIC : On the inventory, or in compliance with the inventory

NZIoC : Not in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory Inventories

AICS (Australia), AIIC (Australia), DSL (Canada), IECSC (China), ENCS (Japan), KECI (Korea),

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NZIOC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States of America (USA))

15.2 Chemical safety assessment

Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

SECTION 16: OTHER INFORMATION

Full text of H-Statements

H315 : Causes skin irritation.

H317 : May cause an allergic skin reaction.

H319 : Causes serious eye irritation.

H332 : Harmful if inhaled.

H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 : May cause respiratory irritation.

H351 : Suspected of causing cancer.

H373 : May cause damage to organs through prolonged or repeated exposure.

H373 : May cause damage to organs through prolonged or repeated exposure if inhaled.

Full text of other abbreviations

Acute Tox. : Acute toxicity

Carc. : Carcinogenicity

Eye Irrit. : Eye irritation

Resp. Sens. : Respiratory sensitisation

Skin Irrit. : Skin irritation

Skin Sens. : Skin sensitisation

STOT RE : Specific target organ toxicity - repeated exposure

STOT SE : Specific target organ toxicity - single exposure

ES VLA : Spain. Environmental Limits for exposure to Chemical agents - Table 1: Occupational Exposure Values

ES VLA / VLA-ED : Environmental Daily Limit Value

Further information

Other information :

Liquid decontaminants (percentages by weight or volume) :

Decontaminant 1 : *- sodium carbonate : 5 - 10 % *- liquid detergent : 0.2 - 2 % *- water : to make up to 100 %

Decontaminant 2 : *- concentrated ammonia solution : 3 - 8 % *- liquid detergent : 0.2 - 2 % *- water : to make up to 100 %

ACE PUR 200 FR A

Decontaminant 1 reacts slower with diisocyanates but is more environmentally friendly than decontaminant 2.

Decontaminant 2 contains ammonia. Ammonia presents health hazards. (See supplier safety information.)

Classification of the mixture: Classification procedure:

Acute Tox. 4 H332 Calculation method

Skin Irrit. 2 H315 Calculation method

Eye Irrit. 2 H319 Calculation method

Resp. Sens. 1 H334 Calculation method

Skin Sens. 1 H317 Calculation method

Carc. 2 H351 Calculation method

STOT SE 3 H335 Calculation method

STOT RE 2 H373 Calculation method

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THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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