

Safety Data Sheet

According to Annex II to REACH - Regulation 2015/830

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Code: 411 00 12700-2713-310 ml
411 00 17810-4527-400 ml

Product name: MECCANOGLASS

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

Intended use: One-component adhesive for the automotive industry

1.3. Details of the supplier of the safety data sheet

Name: Meccanocar Italia S.r.l.
Full address: Via San Francesco, 22
District and Country: 56033 Capannoli (PI)
Italy
Tel. +39 0587 609433
Fax +39 0587 607145

e-mail address of the competent person responsible for the Safety Data Sheet: moreno.meini@meccanocar.it

1.4. Emergency telephone number

For urgent inquiries refer to: National Poisons Information Service: +44 121 507 4123

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2015/830. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:
Respiratory sensitization, category 1

H334

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

2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



Signal words: Danger

Hazard statements:

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
EUH204 Contains isocyanates. May produce an allergic reaction.

Precautionary statements:

P261 Avoid breathing vapours.
P342+P311 If experiencing respiratory symptoms: call a POISON CENTER / doctor.
P304+P340 IF INHALED: remove person to fresh air and keep comfortable for breathing.
P284 [In case of inadequate ventilation] wear respiratory protection.
P501 Dispose of contents / container in accordance with local regulations.

Contains: DIPHENYLMETHANE-4,4'-DIISOCYANATE
 METHYLENEDIPHENYL
 4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
DIPHENYLMETHANE-4,4'-DIISOCYANATE CAS 101-68-8	0,89 ≤ x < 1	Carc. 2 H351, Acute Tox. 4 H332, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317, Classification note according to Annex VI to the CLP Regulation: 2 C
EC 202-966-0 INDEX 615-005-00-9 Reg. no. 01-2119457014-47-XXXX		
METHYLENEDIPHENYL CAS 5873-54-1	0,89 ≤ x < 1	Carc. 2 H351, Acute Tox. 4 H332, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317
EC 227-534-9 INDEX - Reg. no. 01-2119480143-45-XXXX		
4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS		

CAS 25686-28-6

0,89 ≤ x < 1

Carc. 2 H351, Acute Tox. 4 H332, STOT RE 2 H373, Eye Irrit. 2 H319, Skin Irrit. 2 H315, STOT SE 3 H335, Resp. Sens. 1 H334, Skin Sens. 1 H317

EC 500-040-3

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Reg. no. 01-2119457013-49-XXXX

The full wording of hazard (H) phrases is given in section 16 of the sheet.

SECTION 4. First aid measures

4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.

INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

4.2. Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.

4.3. Indication of any immediate medical attention and special treatment needed

Information not available

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage**7.1. Precautions for safe handling**

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection**8.1. Control parameters**

Regulatory References:

ESP	España	LÍMITES DE EXPOSICIÓN PROFESIONAL PARA AGENTES QUÍMICOS EN ESPAÑA 2019 (INSST)
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
NOR	Norge	Fastsatt av Arbeids- og sosialdepartementet 21. august 2018 med hjemmel i lov 17. juni 2005 nr. 62 om arbeidsmiljø, arbeidstid, stillingsvern mv. (arbeidsmiljøloven) § 1-3, § 1-4 og § 4-5
	TLV-ACGIH	ACGIH 2019

4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Predicted no-effect concentration - PNEC

Normal value in fresh water	1	mg/l
Normal value in marine water	0,1	mg/l
Normal value of STP microorganisms	1	mg/l

MECCANOGLASS

Normal value for the terrestrial compartment 1 mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation	0,05 mg/m3		0,025 mg/m3		0,1 mg/m3		0,05 mg/m3	

METHYLENEDIPHENYL

Predicted no-effect concentration - PNEC

Normal value in fresh water 1 mg/l

Normal value in marine water 0,1 mg/l

Normal value of STP microorganisms 1 mg/l

Normal value for the terrestrial compartment 1 mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation	0,05 mg/m3		0,025 mg/m3		0,1 mg/m3		0,05 mg/m3	

DIPHENYLMETHANE-4,4'-DIISOCYANATE**Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
VLA	ESP	0,052	0,005			
VLEP	FRA	0,1	0,01	0,2	0,02	
TLV	NOR	0,05	0,005			
TLV-ACGIH		0,051	0,005			

Predicted no-effect concentration - PNEC

Normal value in fresh water 1 mg/l

Normal value in marine water 0,1 mg/l

Normal value of STP microorganisms 1 mg/l

Normal value for the terrestrial compartment 1 mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation	0,05 mg/m3		0,025 mg/m3		0,1 mg/m3		0,05 mg/m3	

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

HAND PROTECTION

Protect hands with category III work gloves (see standard EN 374).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category I professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type B filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	paste
Colour	black
Odour	characteristic
Odour threshold	Not available
pH	Not available
Melting point / freezing point	Not available
Initial boiling point	Not available
Boiling range	Not available
Flash point	> 100 °C
Evaporation rate	Not available
Flammability (solid, gas)	not flammable
Lower inflammability limit	Not available
Upper inflammability limit	Not available
Lower explosive limit	Not available
Upper explosive limit	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1,33
Solubility	Not available

Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	250000-350000 cps
Explosive properties	Not available
Oxidising properties	Not available

9.2. Other information

Information not available

SECTION 10. Stability and reactivity

10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Decomposes at 274°C/525°F.

With water it develops carbon dioxide and forms an insoluble solid polymer and consequently any wet material recovered must be stored in open containers.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

DIPHENYLMETHANE-4,4'-DIISOCYANATE

May react dangerously with: alcohols, amines, ammonia, sodium hydroxide, acids, water, strong acids, strong bases.

10.4. Conditions to avoid

None in particular. However the usual precautions used for chemical products should be respected.

10.5. Incompatible materials

Information not available

10.6. Hazardous decomposition products

DIPHENYLMETHANE-4,4'-DIISOCYANATE

May develop: nitric oxide, carbon oxides, hydrogen cyanide.

SECTION 11. Toxicological information

11.1. Information on toxicological effects

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

DIPHENYLMETHANE-4,4'-DIISOCYANATE

WORKERS: inhalation; contact with the skin.

POPULATION: inhalation of ambient air; contact with the skin of products containing the substance.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Causes symptoms of irritation of the eye mucous membranes, upper respiratory and digestive tract and also to the skin; lung irritation of the bronchitis type (chest pains, cough, asthmatic wheezing), neurological symptoms (dizziness, balance disorders, headaches and consciousness disturbances). In severe cases, may give rise to delayed pulmonary edema (INRS, 2009). May cause hypersensitivity pneumonia which, in the event of continuous exposure, may progress to interstitial fibrosis (INRS, 2009).

Interactive effects

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Cross sensitisations with other isocyanates are possible, in particular with TDI (toluene diisocyanate).

ACUTE TOXICITY

LC50 (Inhalation) of the mixture:

Not classified (no significant component)

LD50 (Oral) of the mixture:

Not classified (no significant component)

LD50 (Dermal) of the mixture:

Not classified (no significant component)

4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Method: OECD 425

Reliability: 1

Species: Rat (Sprague-Dawley; female)

Route of exposure: Oral

Results: LD50 > 5000 mg / kg bw

Method: OECD 403

Reliability: 1

Species: Rat (Wistar; male / female)

Route of exposure: Inhalation (aerosol)

Results: LC50 = 367.95 mg / m3 air

Method: Equivalent or similar to OECD 402-Read across

Reliability: 2

Species: Rabbit (male / female)

Route of exposure: Dermal

Results: LD50 > 9400 mg / kg bw

METHYLENEDIPHENYL

Method: 84/449 / EEC-Read across

Reliability: 1

Species: Rat (Wistar; male / female)

Route of exposure: Oral

Results: LD50> 2000 mg / kg bw

Method: OECD 403

Reliability: 1

Species: Rat (Wistar; male / female)

Route of exposure: Inhalation (aerosol)

Results: LC50 = 367.95 mg / m3 air

Method: Equivalent or similar to OECD 402-Read across

Reliability: 2

Species: Rabbit (male / female)

Route of exposure: Dermal

Results: LD50> 9400 mg / kg bw

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Method: 84/449 / EEC-Read across

Reliability: 1

Species: Rat (Wistar; male / female)

Route of exposure: Oral

Results: LD50> 2000 mg / kg bw

Method: Equivalent or similar to OECD 402

Reliability: 2

Species: Rabbit (male / female)

Route of exposure: Dermal

Results: LD50> 9400 mg / kg bw

Method: OECD 403

Reliability: 1

Species: Rat (Wistar; male / female)

Route of exposure: Inhalation (aerosol)

Results: LC50 = 367.95 mg / m3 air

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Method: OECD 404

Reliability: 1

Species: Rabbit (New Zealand White)

Route of exposure: Dermal

Results: Category 2 (irritant)

METHYLENEDIPHENYL

Method: OECD 404

Reliability: 1

Species: Rabbit (HC: NZW)

Route of exposure: Dermal

Results: Irritating

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Method: OECD 404-Read across

Reliability: 1

Species: Rabbit (HC: NZW)

Route of exposure: Dermal

Results: Irritating

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Method: OECD 405-Read across

Reliability: 1

Species: Rabbit (HC: NZW)

Route of exposure: Ocular

Results: Not irritating

METHYLENEDIPHENYL

Method: OECD 405

Reliability: 1

Species: Rabbit (HC: NZW)

Route of exposure: Ocular

Results: Not irritating

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Method: OECD 404-Read across

Reliability: 1

Species: Rabbit (HC: NZW)

Route of exposure: Ocular

Results: Irritating

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the respiratory system

Respiratory sensitization

4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Method: Not indicated-Read across

Reliability: 2

Species: guinea pig (Dunkin-Hartley; male / female)

Route of exposure: Inhalation

Results: Sensitizing

METHYLENEDIPHENYL

Method: Not indicated

Reliability: 2

Species: guinea pig (Dunkin-Hartley; male / female)

Route of exposure: Inhalation

Results: Sensitizing

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Method: Not indicated

Reliability: 2

Species: guinea pig (Dunkin-Hartley; female)

Route of exposure: Inhalation

Results: Sensitizing

Skin sensitization

4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Method: OECD 406

Reliability: 1

Species: guinea pig (Hartley; male / female)

Route of exposure: Dermal

Results: Sensitizing

METHYLENEDIPHENYL

Method: Equivalent or similar to OECD 406-Read across

Reliability: 2

Species: guinea pig (Hartley; male / female)

Route of exposure: Dermal

Results: Not sensitizing

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Method: Equivalent or similar to OECD 406-Read across

Reliability: 2

Species: guinea pig (Hartley; male / female)

Route of exposure: Dermal

Results: Not sensitizing

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Method: OECD 471 in vitro test

Reliability: 1

Species: S. typhimurium

Results: Negative with and without metabolic activation

Method: OECD 489-test in vivo

Reliability: 1

Species: Rat (Wistar; male)

Route of exposure: Inhalation (aerosol)

Results: Negative

METHYLENEDIPHENYL

Method: EU Method B.13 / 14-in vitro test

Reliability: 2

Species: S. typhimurium

Results: Negative with and without metabolic activation

Method: OECD 489-test in vivo

Reliability: 1

Species: Rat (Wistar; male)

Route of exposure: Inhalation (aerosol)

Results: Negative

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Method: EU Method B.13 / 14-in vitro test

Reliability: 2

Species: S. typhimurium

Results: Negative with and without metabolic activation

Method: OECD 489-test in vivo

Reliability: 1

Species: Rat (Wistar; male)
Route of exposure: Inhalation (aerosol)
Results: Negative

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Method: Equivalent or similar to OECD 453-read across
Reliability: 2
Species: Rat (Wistar; male / female)
Route of exposure: Inhalation (aerosol)
Results: Negative

METHYLENEDIPHENYL

Method: Equivalent or similar to OECD 453-Read across
Reliability: 2
Species: Rat (Wistar; male / female)
Route of exposure: Inhalation (aerosol)
Results: Negative, NOAEC = 0.2 mg / m3 air

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Classified in Group 3 (not classifiable as a human carcinogen) by the International Agency for Research on Cancer (IARC) - (IARC, 1999).

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

Adverse effects on development of the offspring 4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Method: OECD 414-Read across
Reliability: 1
Species: Rat (Wistar)
Route of exposure: Inhalation (aerosol)
Results: Positive, NOAEC (development) = 4mg / m3 air

METHYLENEDIPHENYL

Method: OECD 414-Read across
Reliability: 1
Species: Rat (Wistar)
Route of exposure: Inhalation (aerosol)
Results: Positive, NOAEC (development) = 4 mg / m3 air

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Method: OECD 414-Read across
Reliability: 1
Species: Rat (Wistar)
Route of exposure: Inhalation (aerosol)
Results: Positive, NOAEC (development) = 4 mg / m3 air

STOT - SINGLE EXPOSURE

MECCANOGLASS

Does not meet the classification criteria for this hazard class

4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Based on available data and through expert judgment, the substance is classified in the target organ toxicity class for single exposure.

METHYLENEDIPHENYL

Based on available data and through expert judgment, the substance is classified in the target organ toxicity class for single exposure.

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Based on available data and through expert judgment, the substance is classified in the target organ toxicity class for single exposure.

Target organ

4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Respiratory System

METHYLENEDIPHENYL

Respiratory System

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Respiratory System

Route of exposure

4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Inhalation

METHYLENEDIPHENYL

Inhalation

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Inhalation

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Method: Equivalent or similar to OECD 453-Read across

Reliability: 2

Species: Rat (Wistar; male / female)

Route of exposure: Inhalation (aerosol)

Results: Negative, NOAEC = 0.2 mg / m³ air

METHYLENEDIPHENYL

Method: Equivalent or similar to OECD 453-Read across
 Reliability: 2
 Species: Rat (Wistar; male / female)
 Route of exposure: Inhalation (aerosol)
 Results: Negative, NOAEC = 0.2 mg / m3 air

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Method: Equivalent or similar to OECD 453-Read across
 Reliability: 2
 Species: Rat (Wistar; male / female)
 Route of exposure: Inhalation (aerosol)
 Results: Negative, NOAEC = 0.2 mg / m3 air

Target organ
 4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Respiratory System

METHYLENEDIPHENYL

Respiratory System

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Respiratory System

Route of exposure
 4,4 ' METHYLENE DIPHENYL DIISOCYANATE, OLIGOMERS

Inhalation

METHYLENEDIPHENYL

Inhalation

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Inhalation

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

SECTION 12. Ecological information

12.1. Toxicity

DIPHENYLMETHANE-4,4'-DIISOCYANATE

LC50 - for Fish	1000 mg/l/96h
EC50 - for Crustacea	1000 mg/l/48h
EC50 - for Algae / Aquatic Plants	1640 mg/l/72h

EC10 for Algae / Aquatic Plants	1640 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants	1640 mg/l

METHYLENEDIPHENYL

LC50 - for Fish	1000 mg/l/96h
EC50 - for Crustacea	1000 mg/l/48h
EC10 for Crustacea	10 mg/l/28d
Chronic NOEC for Crustacea	10 mg/l

**4,4' METHYLENE DIPHENYL
DIISOCYANATE, OLIGOMERS**

LC50 - for Fish	1000 mg/l/96h
EC50 - for Crustacea	1000 mg/l/48h
EC10 for Crustacea	10 mg/l/28d
Chronic NOEC for Crustacea	10 mg/l

12.2. Persistence and degradability**DIPHENYLMETHANE-4,4'-DIISOCYANATE**

Solubility in water	0,1 - 100 mg/l
NOT rapidly degradable	

12.3. Bioaccumulative potential**DIPHENYLMETHANE-4,4'-DIISOCYANATE**

Partition coefficient: n-octanol/water	4,51
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12.4. Mobility in soil

Information not available

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

12.6. Other adverse effects

Information not available

SECTION 13. Disposal considerations**13.1. Waste treatment methods**

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Information not relevant

SECTION 15. Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Seveso Category - Directive 2012/18/EC: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

Product

Point 3

Contained substance

Point 56 METHYLENEDIPHE
NYL Reg. no.: 01-
2119480143-45-
XXXX

Point 56 DIPHENYLMETHAN
E-4,4'-
DIISOCYANATE
Reg. no.: 01-
2119457014-47-
XXXX

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Carc. 2	Carcinogenicity, category 2
Acute Tox. 4	Acute toxicity, category 4
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Resp. Sens. 1	Respiratory sensitization, category 1
Skin Sens. 1	Skin sensitization, category 1
H351	Suspected of causing cancer.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
EUH204	Contains isocyanates. May produce an allergic reaction.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament

2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
16. Regulation (EU) 2019/521 (XII Atp. CLP)

- The Merck Index. - 10th Edition

- Handling Chemical Safety

- INRS - Fiche Toxicologique (toxicological sheet)

- Patty - Industrial Hygiene and Toxicology

- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition

- IFA GESTIS website

- ECHA website

- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

Product's classification is based on the calculation methods set out in Annex I of the CLP Regulation, unless otherwise indicated in sections 11 and 12.

The data for evaluation of chemical-physical properties are reported in section 9.