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 15370-2980**

Product name **POLYURETHANE ADHESIVE D4**

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

Intended use **One-component polyurethane water-hardening adhesive for carpentry and construction**

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:

Carcinogenicity, category 2	H351	Suspected of causing cancer.
Eye irritation, category 2	H319	Causes serious eye irritation.
Skin irritation, category 2	H315	Causes skin irritation.
Specific target organ toxicity - single exposure, category 3	H335	May cause respiratory irritation.
Respiratory sensitization, category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Hazardous to the aquatic environment, chronic toxicity, category 3	H412	Harmful to aquatic life with long lasting effects.

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:

H351	Suspected of causing cancer.
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.
H412	Harmful to aquatic life with long lasting effects.
EUH204	Contains isocyanates. May produce an allergic reaction.

Precautionary statements:

P304+P340	IF INHALED: remove person to fresh air and keep comfortable for breathing.
P201	Obtain special instructions before use.
P308+P313	IF exposed or concerned: Get medical advice / attention.
P273	Avoid release to the environment.
P284	[In case of inadequate ventilation] wear respiratory protection.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Contains: DIPHENYLMETHANE-4,4'-DIISOCYANATE
METHYLENEDIPHENYL

DIPHENYLMETHANE-2,2'-DIISOCYANATE

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 EC 202-966-0 INDEX 615-005-00-9	7 ≤ x < 8	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

Reg. no. 01-2119457014-47-XXXX		
METHYLENEDIPHENYL		
CAS 5873-54-1	7 ≤ x < 8	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		
2,2'-DIMORPHOLYL DIETHYL ETHER		
CAS 6425-39-4	1 ≤ x < 1,5	Eye Irrit. 2 H319
EC 229-194-7		
INDEX -		
Reg. no. 01-2119969278-20-XXXX		
DIETILMETILBENZENDIAMMINA		
CAS 68479-98-1	0,8 ≤ x < 0,9	Acute Tox. 4 H302, Acute Tox. 4 H312, STOT RE 2 H373, Eye Irrit. 2 H319, Aquatic Chronic 1 H410 M=1
EC 270-877-4		
INDEX 612-130-00-0		
Reg. no. 01-2119486805-25-XXXX		
DIPHENYLMETHANE-2,2'-DIISOCYANATE		
CAS 2536-05-2	0,1 ≤ x < 0,15	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 219-799-4		
INDEX 615-005-00-9		
Reg. no. 01-2119927323-43-XXXX		
PHOSPHORIC ACID		
CAS 7664-38-2	0 ≤ x < 0,05	Met. Corr. 1 H290, Acute Tox. 4 H302, Skin Corr. 1B H314, Eye Dam. 1 H318, Classification note according to Annex VI to the CLP Regulation: B
EC 231-633-2		
INDEX 015-011-00-6		
Reg. no. 01-2119485924-24-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
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Third edition,published 2018)
ITA	Italia	DIRETTIVA (UE) 2017/164 DELLA COMMISSIONE del 31 gennaio 2017
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
PRT	Portugal	Ministério da Economia e do Emprego Consolida as prescrições mínimas em matéria de protecção dos trabalhadores contra os riscos para a segurança e a saúde devido à exposição a agentes químicos no trabalho - Diário da República, 1.ª série - N.º 111 - 11 de junho de 2018
EU	OEL EU	Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2019

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

	Effects on consumers				Effects on workers			
Route of exposure	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

	Effects on consumers				Effects on workers			
Route of exposure	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	

2,2'-DIMORPHOLYL DIETHYL ETHER

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,1	mg/l
Normal value in marine water	0,01	mg/l
Normal value for fresh water sediment	8,2	mg/kg
Normal value for marine water sediment	0,82	mg/kg
Normal value of STP microorganisms	100	mg/l
Normal value for the food chain (secondary poisoning)	10	mg/kg
Normal value for the terrestrial compartment	1,58	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				0,5 mg/kg bw/d				
Inhalation				1,8 mg/m3				7,28 mg/m3
Skin				0,5 mg/kg bw/d				1 mg/kg bw/d

DIETILMETILBENZENDIAMMINA

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,001	mg/l
Normal value in marine water	0	mg/l
Normal value for fresh water sediment	0,029	mg/kg
Normal value for marine water sediment	0,003	mg/kg
Normal value of STP microorganisms	17	mg/l
Normal value for the food chain (secondary poisoning)	2	mg/kg
Normal value for the terrestrial compartment	0,56	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				0,1 mg/kg bw/d				
Inhalation				0,1 mg/m3				0,13 mg/m3
Skin				1 mg/kg bw/d				1 mg/kg bw/d

DIPHENYLMETHANE-2,2'-DIISOCYANATE

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

	Effects on consumers				Effects on workers			
Route of exposure	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	

PHOSPHORIC ACID

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
VLA	ESP	1		2		
VLEP	FRA	1	0,2	2	0,5	
WEL	GBR	1		2		
VLEP	ITA	1		2		
TLV	NOR	1				
VLE	PRT	1		2		
OEL	EU	1		2		
TLV-ACGIH		1		3		

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				0,1 mg/kg bw/d				
Inhalation			0,36 mg/m3	4,57 mg/m3	2 mg/m3		1 mg/m3	10,7 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.

Provide an emergency shower with face and eye wash station.

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 II 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 A 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.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

PHOSPHORIC ACID

Wear suitable gloves (neoprene gloves)

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	paste
Colour	beige
Odour	typical
Odour threshold	Not available
pH	Not available
Melting point / freezing point	Not available
Initial boiling point	Not available
Boiling range	Not available
Flash point	Not available
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	1,45 Kg/l
Solubility	Not available
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available

Decomposition temperature	Not available
Viscosity	30000-40000 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.

PHOSPHORIC ACID

Decomposes at temperatures above 200°C/392°F.

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.

PHOSPHORIC ACID

Risk of explosion on contact with: nitromethane.May react dangerously with: alkalis,sodium borohydride.

Exothermic reaction with water.
Reacts violently with strong alkalis.
In contact with reactive metals (such as steel, carbon and aluminum) it can produce hydrogen.
High temperature formation of phosphorus oxides.

10.4. Conditions to avoid

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

DIETILMETILBENZENDIAMMINA

Exposure to the air.

10.5. Incompatible materials

DIETILMETILBENZENDIAMMINA

Strong acids. Strong oxidizing agents.

PHOSPHORIC ACID

Incompatible with: metals,strong alkalis,aldehydes,organic sulphides,peroxides.

10.6. Hazardous decomposition products

DIPHENYLMETHANE-4,4'-DIISOCYANATE

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

DIETILMETILBENZENDIAMMINA

Carbon oxides. Nitrogen oxides (NOx).

PHOSPHORIC ACID

May develop: phosphoryl oxides.

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:
> 5 mg/l
LD50 (Oral) of the mixture:
Not classified (no significant component)
LD50 (Dermal) of the mixture:
Not classified (no significant component)

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

2,2'-DIMORPHOLYL DIETHYL ETHER

Method: Equivalent or similar to OECD 401
Reliability: 2
Species: Rat (Crl: COBS CD (SD) BR; male / female)
Route of exposure: Oral

Results: LD50 = 2025 mg / kg bw
Method: Equivalent or similar to OECD 402
Reliability: 2
Species: Rabbit (New Zealand White; male / female)
Route of exposure: Dermal
Results: LD50 = 3038 mg / kg bw

DIETILMETILBENZENDIAMMINA

Method: OECD 401
Reliability: 1
Species: Rat (Wistar; male / female)
Route of exposure: Oral
Results: LD50 = 738 mg / kg bw
Method: OECD 402
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Dermal
Results: LD50> 2000 mg / kg bw

DIPHENYLMETHANE-2,2'-DIISOCYANATE

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

SKIN CORROSION / IRRITATION

Causes skin irritation

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

2,2'-DIMORPHOLYL DIETHYL ETHER

Method: OECD 404

Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Dermal
Results: Not classified

DIETILMETILBENZENDIAMMINA

Method: OECD 404
Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Dermal
Results: Not irritating

DIPHENYLMETHANE-2,2'-DIISOCYANATE

Method: OECD 404
Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Dermal
Results: Category 2 (irritant)

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

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

2,2'-DIMORPHOLYL DIETHYL ETHER

Method: OECD 405
Reliability: 1
Species: Rabbit (Vienna White)
Route of exposure: Ocular
Results: Category 2B (slightly irritating to eyes)

DIETILMETILBENZENDIAMMINA

Method: Equivalent or similar 16 CFR Section 1500.42 Test for eye irritants
Reliability: 2
Species: Rabbit (New Zealand White)
Route of exposure: Ocular
Results: Irritating

DIPHENYLMETHANE-2,2'-DIISOCYANATE

Method: OECD 405-Read across
Reliability: 1
Species: Rabbit (HC: NZW)
Route of exposure: Ocular
Results: Not irritating

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin
Sensitising for the respiratory system
May produce an allergic reaction.Contains:
2,2'-DIMORPHOLYL DIETHYL ETHER

Method: OECD 406
Reliability: 2
Species: guinea pig (Hartley; male / female)
Route of exposure: Dermal
Results: Not classified

Respiratory sensitization
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

DIPHENYLMETHANE-2,2'-DIISOCYANATE

Method: Equivalent or similar to OECD-GD 39
Reliability: 2
Species: Rat (Brown Norway; male)
Route of exposure: Inhalation
Results: Sensitizing

Skin sensitization
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

DIETILMETILBENZENDIAMMINA

Method: Not indicated
Reliability: 2
Species: guinea pig
Route of exposure: Dermal
Results: Not sensitizing

DIPHENYLMETHANE-2,2'-DIISOCYANATE

Method: Equivalent or similar to OECD 406
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

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

2,2'-DIMORPHOLYL DIETHYL ETHER

Method: OECD 471 in vitro test
Reliability: 1
Species: S. typhimurium, E. Coli
Results: Negative with and without metabolic activation
Method: OECD 474-test in vivo
Reliability: 1
Species: Mouse (ICR; male / female)
Route of exposure: Oral
Results: Negative

DIETILMETILBENZENDIAMMINA

Method: OECD 473 in vitro test

Reliability: 1
Species: Lymphocytes
Results: Negative with and without metabolic activation
Method: OECD 474-test in vivo
Reliability: 1
Species: Mouse (ICR; male / female)
Route of exposure: Oral
Results: Negative

DIPHENYLMETHANE-2,2'-DIISOCYANATE

Method: OECD 471 in vitro test
Reliability: 1
Species: S. typhimurium
Results: Negative with and without metabolic activation
Method: OECD 474-in vivo test-Read across
Reliability: 1
Species: Rat (Brown Norway; male)
Route of exposure: Inhalation
Results: Negative

PHOSPHORIC ACID

Method: OECD 471 in vitro test
Reliability: 1
Species: S. typhimurium, E. Coli
Results: Negative with and without metabolic activation

CARCINOGENICITY

Suspected of causing cancer

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).

DIETILMETILBENZENDIAMMINA

Method: Equivalent or similar to OECD 451
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Oral
Results: Positive

DIPHENYLMETHANE-2,2'-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

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

Adverse effects on sexual function and fertility
2,2'-DIMORPHOLYL DIETHYL ETHER

Method: OECD 422
Reliability: 2
Species: Rat (Wistar; male / female)
Route of exposure: Oral
Results: NOAEL (fertility) = 300 mg / kg bw / day

PHOSPHORIC ACID

Method: OECD Combined Repeated Dose and Reproductive / Developmental Toxicity Screening Test
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Oral
Results: Negative, NOAEL (fertility)> = 500 mg / kg bw / day

Adverse effects on development of the offspring
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

2,2'-DIMORPHOLYL DIETHYL ETHER

Method: OECD 414
Reliability: 1
Species: Rat (Wistar)
Route of exposure: Oral
Results: NOAEL (development) = 75 mg / kg bw / day

DIETILMETILBENZENDIAMMINA

Method: OECD 414
Reliability: 1
Species: Rat (Wistar)
Route of exposure: Oral
Results: NOEL (development) = 2.63 mg / kg bw / day

DIPHENYLMETHANE-2,2'-DIISOCYANATE

Method: OECD 414-Read across
Reliability: 1
Species: Rat (Wistar)
Route of exposure: Inhalation (aerosol)

Results: NOAEC (development) = 4 mg / m3 air

PHOSPHORIC ACID

Method: Equivalent or similar to OECD 414
Reliability: 2
Species: Mouse (CD-1)
Route of exposure: Oral
Results: Negative, NOAEL (development)> = 370 mg / kg bw / day

STOT - SINGLE EXPOSURE

May cause respiratory irritation

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.

2,2'-DIMORPHOLYL DIETHYL ETHER

Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

DIETILMETILBENZENDIAMMINA

Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

DIPHENYLMETHANE-2,2'-DIISOCYANATE

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

PHOSPHORIC ACID

Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

Target organ
METHYLENEDIPHENYL

Respiratory System

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Respiratory System

DIPHENYLMETHANE-2,2'-DIISOCYANATE

Respiratory System

Route of exposure
METHYLENEDIPHENYL

Inhalation

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Inhalation

DIPHENYLMETHANE-2,2'-DIISOCYANATE

Inhalation

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

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

2,2'-DIMORPHOLYL DIETHYL ETHER

Method: OECD 422
Reliability: 2
Species: Rat (Wistar; male / female)
Route of exposure: Oral
Results: NOAEL = 300 mg / kg bw / day
Method: Equivalent or similar to OECD 452
Reliability: 2
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Inhalation (vapors)
Results: NOEC = 50 ppm

DIETILMETILBENZENDIAMMINA

Method: Equivalent or similar to OECD 408
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Oral
Results: NOAEL> = 125 ppm
Method: Not indicated
Reliability: 2
Species: Rabbit (New Zealand White; male / female)
Route of exposure: Dermal
Results: NOEL> = 100 mg / kg bw / day

DIPHENYLMETHANE-2,2'-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 = 0.19 mg / m3 air

PHOSPHORIC ACID

Method: Not indicated
Reliability: 2
Species: Rat
Route of exposure: Oral
Results: Negative

Target organ
METHYLENEDIPHENYL

Respiratory System

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Respiratory System

DIETILMETILBENZENDIAMMINA

Pancreas

DIPHENYLMETHANE-2,2'-DIISOCYANATE

Respiratory System

Route of exposure
METHYLENEDIPHENYL

Inhalation

DIPHENYLMETHANE-4,4'-DIISOCYANATE

Inhalation

DIPHENYLMETHANE-2,2'-DIISOCYANATE

Inhalation

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

SECTION 12. Ecological information

This product is dangerous for the environment and the aquatic organisms. In the long term, it have negative effects on aquatic environment.
12.1. Toxicity

PHOSPHORIC ACID

EC50 - for Crustacea	100 mg/l/48h
EC50 - for Algae / Aquatic Plants	100 mg/l/72h
EC10 for Algae / Aquatic Plants	100 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants	100 mg/l

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

DIPHENYLMETHANE-2,2'-DIISOCYANATE

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

DIETILMETILBENZENDIAMMINA

LC50 - for Fish	200 mg/l/96h
EC50 - for Crustacea	0,5 mg/l/48h
EC50 - for Algae / Aquatic Plants	104 mg/l/72h
EC10 for Algae / Aquatic Plants	54 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants	54 mg/l

2,2'-DIMORPHOLYL DIETHYL ETHER

LC50 - for Fish	2150 mg/l/96h
EC50 - for Crustacea	100 mg/l/48h
EC50 - for Algae / Aquatic Plants	100 mg/l/72h
EC10 for Algae / Aquatic Plants	100 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants	100 mg/l

12.2. Persistence and degradability

2,2'-DIMORPHOLYL DIETHYL ETHER
Not degradable in water, 4% in 28 days.

PHOSPHORIC ACID

Solubility in water	> 850000 mg/l

Degradability: information not available

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

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.

DIETILMETILBENZENDIAMMINA
Dispose of safely according to local / national regulations.
Absorb and incinerate.
Used drums are collected for cleaning by professional contractors. Waste containing DETDA is incinerated in an authorized incineration plant. Landfilling is not performed.

PHOSPHORIC ACID
The neutralized liquid can be poured in compliance with the normative legislation (the law regulates the emptying of waste water containing phosphorus).
The waste from the containers or the used container itself must be disposed of in accordance with local requirements.
Sodium carbonate, calcium carbonate and slaked lime (calcium hydroxide) can be used as neutralizing agents for the material which cannot be eliminated.
If phosphoric acid is used in the reactions of aqueous solutions, rinse the drum three times with water.
Respect local regulations for disposal.

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	METHYLENEDIPHENYL Reg. no.: 01-2119480143-45-XXXX
Point	56	DIPHENYLMETHANE-4,4'-DIISOCYANATE Reg. no.: 01-2119457014-47-XXXX
Point	56	DIPHENYLMETHANE-2,2'-DIISOCYANATE Reg. no.: 01-2119927323-43-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:

Met. Corr. 1	Substance or mixture corrosive to metals, category 1
Carc. 2	Carcinogenicity, category 2
Acute Tox. 4	Acute toxicity, category 4
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
Skin Corr. 1B	Skin corrosion, category 1B
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
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H290	May be corrosive to metals.
H351	Suspected of causing cancer.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H314	Causes severe skin burns and eye damage.
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.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
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
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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.