

According to directive 1907/2006/EC, 2020/878
Version 6.0 Revision date: 12-09-2022
Trade name: G 127

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

1.1 Product identification:

Product name: G 127
UFI: 3750-60SQ-J000-ESP1

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

Usage: Polyurethane hardener.
Recommended restrictions on use: For industrial and professional use only.

1.3 Details of the supplier of the safety data sheet:

Responsible distributor : ASSYST bvba / A.S.O.W. bvba
Hellegatstraat 13a
2590 Berlaar
Belgium
Tel: +32 495 50 61 14 / +32 496 83 70 27
Website: www.assyst.org / www.artsuppliesonweb.com
Email: ao@assyst.org / vera.opsommer@assyst.org

1.4 Emergency phone number:

For Belgium:

Call the **Poison Control Center (070 245 245 - free)**, if not available: **02 264 96 30** (normal rate) or your doctor. In life-threatening situations, always call the European emergency number **112**.

NHS 24 Direct

For help from a GP, visit your GP surgery's website, use an online service to contact your GP, or call the surgery. **For urgent medical help**, use the NHS 111 online service, or **call 111** if you are unable to get help online. **For life-threatening emergencies, call 999** for an ambulance. There is more information about getting medical help on the NHS website.

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture:

Classification according to directive (EC) No 1272/2008 and its amendments.

The product is classified according to current legislation.

Classification in accordance with Regulation (EC) No 1272/2008 as amended.

Health hazards

Acute toxicity, Category 4 - H332: Harmful by inhalation.

Skin corrosion/irritation, Category 2 - H315: Causes skin irritation.

Eye irritation, Category 2 - H319: Causes severe 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 tract irritation.

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

Inhalation hazard, Category 1 - H304: May be fatal if swallowed and enters airways.

Chronic aquatic toxicity, Category 2 - H411: Toxic to aquatic organisms with long-lasting effects.

2.2 Labelling elements:

Labelling according to regulation (EC) No 1272/2008 [CLP/GHS]:



Hazard pictograms:

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Signal word Danger.

Hazardous ingredients to be declared on the label:

- ✓ Polymeric MDI
- ✓ Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenylisocyanate
- ✓ Bis(isopropyl)naphthalene
- ✓ 4,4'-methylenediphenyl diisocyanate
- ✓ DIPHENYLMETHANE DIISOCYANATE

Hazard statements:

H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes severe eye irritation.
H332 Harmful by inhalation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory tract irritation.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic organisms with long-lasting effects.

Precautions

Prevention:

P260 Do not breathe mist or vapour.
P273 Avoid discharge into the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Action:

P301 + P310 IF INGESTED: Seek immediate medical attention from a poison control centre/doctor.
P304 + P340 + P312 IF INHALED: Remove the person to fresh air and ensure that he/she can breathe easily. In case of feeling unwell, call a POISON CENTER/doctor.
P308 + P313 AFTER (possible) exposure: consult a doctor.
P331 DO NOT induce vomiting.
P391 Clean up any leaks/spills.

Additional labelling:

"By 24 August 2023, appropriate training must be completed for industrial or professional use."

2.3 Other hazards:

This substance/mixture contains components that can be considered persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

Ecological information:

The substance/mixture does not contain any components believed 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 level 0.1% or higher.

Toxicological information:

The substance/mixture does not contain any components believed 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 level 0.1% or higher.

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SECTION 3: Composition and information on ingredients

3.2 Mixtures:

Description:

Chemical description : Mixture based on diphenylmethane diisocyanate.

Chemical Name	CAS No. EC No. Index no. Registration number	Classification (Regulation (EC) No 1272/008)	Concentration (%)
Polymeric MDI	9016-87-9 - 01-2119457024-46	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	>= 25 - < 30
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenylisocyanate	Not allocated - 01-2119457015-45	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 (Respiratory system) STOT RE 2; H373 Carc. 2; H351	>= 25 - < 30
Bis(isopropyl)naphthalene	38640-62-9 254-052-6 - 01-2119565150-48	Asp. Tox. 1; H304 Aquatic Chronic 1; H410 M-factor (Chronic aquatic toxicity): 1	>= 20 - < 25
Terphenyl, hydrogenated	61788-32-7 262-967-7 - 01-2119488183-33	Acute Tox.4; H332 Aquatic Chronic2; H411	>= 12,5 - < 20
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 specific concentration limits Eye Irrit. 2; H319 >= 5 % STOT SE 3; H335 >= 5 % Skin Irrit. 2; H315 >= 5 % Resp. Sens. 1; H334 >= 0,1 %	>= 5 - < 7
DIPHENYLMETHANE DIISOCYANATE	25686-28-6 500-040-3 - 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	>= 5 - < 7

For explanation of abbreviations, see section 16.

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SECTION 4: First aid measures

4.1 Description of first-aid measures:

General advice:

Keep warm and put in a quiet environment.
Show this safety data sheet to the doctor on duty.
Remove contaminated clothing immediately.

By inhalation:

Getting into the fresh air.
Keep victim warm and calm.
In case of irregular breathing or respiratory arrest, apply artificial respiration.
In case of labored breathing, administer oxygen.
If symptoms persist, consult a doctor.

On contact with skin:

Immediately wash with soap and plenty of water.
DO NOT use solvents or paint thinner.
In case of spillage on clothing, remove clothing.
If skin irritation persists, consult a doctor.

On contact with eyes:

Rinse immediately with plenty of water, including under the eyelids, for at least 15 minutes.
If eye irritation persists, consult a specialist.
As far as easy to do, remove any contact lenses.

If swallowed:

Keep calm.
Do not induce vomiting without medical advice.
Keep breathing passages clear.
If symptoms persist, consult a doctor.

4.2 Main acute and delayed symptoms and effects:

Symptoms:

Breathing difficulties
Flood of tears
Redness
Irritation

4.3 Indication of immediate medical attention and special treatment required:

Treatment:

The procedure for first aid should be drawn up together with the company doctor.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media:

Suitable extinguishing agents:

Foam
Sand
Carbon dioxide (CO₂)

Unsuitable extinguishing media:

Strong water jet

5.2 Special hazards arising from the substance or mixture:

Specific hazards in firefighting:

Decomposes on fire under release of toxic gas: nitrous vapours.
Heat can increase pressure in sealed containers.
Cool closed containers near the fire with water spray.

5.3 Advice for firefighters:

Special protective equipment for firefighters:

In case of fire, wear a compressed air mask.

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Use personal protective equipment.

Further information:

In case of fire and/or explosion, avoid breathing fumes.

Use extinguishing agents suitable for the local conditions and environment.

Immediately evacuate personnel to a safe area.

Prevent extinguishing water from contaminating surface water or groundwater systems.

Combustion residues and contaminated fire fighting water must be disposed of according to local regulations.

SECTION 6: Measures in case of accidental release of the substance or mixture

6.1 Personal precautions, protective equipment and emergency procedures:

Personal precautions:

See protective measures in sections 7 and 8.

Evacuate personnel to a safe area.

Use personal protective equipment.

Ensure adequate ventilation.

Only qualified personnel with appropriate protective equipment should act.

Inform the competent authority in case of gas leaks, or runoff into waterways, soil or sewers.

6.2 Environmental precautions:

Environmental precautions:

Avoid uncontrolled discharge of product into the environment.

Try to prevent the material from draining into sewers or watercourses.

In case of significant leaks that cannot be contained, the local government should be notified.

6.3 Methods and materials for containment and cleaning:

Cleaning methods:

Absorb in inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Limit spill and collect with non-combustible absorbent materials, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local/national regulations (see section 13).

Incorporate and transfer into properly labelled containers.

6.4 Reference to other sections:

For personal protection, see section 8.

SECTION 7: Handling and storage:

7.1 Precautions for safe handling of the substance or mixture:

Safe handling advice:

Ensure adequate ventilation and/or extraction in the workplace.

People prone to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory diseases should not be employed in processes involving the use of this mixture.

Avoid inhalation, ingestion and contact with skin and eyes.

Use only in areas with adequate extraction.

No smoking, eating and drinking in the workplace.

Advice on protection against fire and explosion:

Keep away from open flames, hot surfaces and ignition sources.

Hygiene measures:

Ensure adequate air ventilation.

Wash hands and face before stopping work and immediately after using the product.

7.2 Conditions for safe storage, including incompatibilities:

Requirements for storage areas and containers:

Store containers tightly closed in a dry, cool and well-ventilated place.

To maintain product quality do not expose to heat or direct sunlight.

Store in correctly labelled containers.

Advice for mixed storage:

Keep away from oxidising agents, strong acids or alkaline materials, amines, alcohols and water.

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Keep away from food and drink.

Keep product and empty packaging away from heat and ignition sources.

Recommended storage temperature:

> 10°C

Wetness:

Keep packaging dry and tightly closed to avoid moisture absorption and contamination.

More information on storage stability:

Stable at normal room temperature and pressure.

7.3 Specific end use:

Specific use:

Before using this substance/mixture, refer to the technical guidelines.

SECTION 8: Exposure controls/personal protection measures

8.1 Control parameters:

Limits exposure on appeal.

Components	CAS No.	Type of value (Mode of exposure)	Control parameters	Basic
Terphenyl, hydrogenated	61788-32-7	TWA	2 ppm 19 mg/m3	2017/164/EU
		Further information: Indicative		
		STEL	5 ppm 48 mg/m3	2017/164/EU
		Further information: Indicative		
		TGG 15 min	5 ppm 48 mg/m3	BE OEL
4,4'-methylenediphenyl diisocyanate	101-68-8	TGG 8 hr	0.005 ppm 0.052 mg/m3	BE OEL

Derived no-effect doses (DNEL) according to Regulation (EC) Number 1907/2006:

Substance name	End use	Route of exposure	Possible health condition	Value
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenylisocyanate	Employees	Skin touch	Acute - systemic effects	50 mg/kg
	Employees	Inhalation	Acute - systemic effects	0.1 mg/m3
	Employees	Skin touch	Acute - local effects	28.7 mg/cm2
	Employees	Inhalation	Acute - local effects	0.1 mg/m3
	Employees	Inhalation	Long-term - systemic effects	0.05 mg/m3
	Employees	Inhalation	Long-term - systemic effects	0.05 mg/m3
	Consumers	Skin touch	Acute - systemic effects	25 mg/kg
	Consumers	Inhalation	Acute - systemic effects	0.05 mg/m3
	Consumers	Ingestion	Acute - systemic effects	20 mg/kg
	Consumers	Skin touch	Acute - local effects	17.2 mg/cm2
	Consumers	Inhalation	Acute - local effects	0.05 mg/m3
	Consumers	Inhalation	Long-term - systemic effects	0.025 mg/m3
	Consumers	Inhalation	Long-term - systemic effects	0.025 mg/m3
	Bis(isopropyl)naphthalene	Consumers	Ingestion	Long-term - systemic effects
Consumers		Skin touch	Long-term - systemic effects	2.1 mg/kg
Employees		Skin touch	Long-term - systemic effects	4.3 mg/kg
Consumers		Inhalation	Long-term - systemic effects	7.4 mg/m3
Employees		Inhalation	Long-term - systemic effects	30 mg/m3
Terphenyl, hydrogenated		Employees	Skin touch	Long-term local effects
	Employees	Skin touch	Long-term - systemic effects	46.3 mg/kg
	Employees	Inhalation	Long-term local effects	83.8 mg/m3
	Employees	Inhalation	Long-term - systemic effects	8.38 mg/m3
	Employees	Inhalation	Long-term - systemic effects	8.38 mg/m3

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	Consumers	Ingestion	Long-term - systemic effects	0.3 mg/kg
	Consumers	Skin touch	Long-term local effects	0.12 mg/cm ²
	Consumers	Skin touch	Long-term - systemic effects	27.8 mg/kg
	Consumers	Inhalation	Long-term local effects	25 mg/m ³
	Consumers	Inhalation	Long-term - systemic effects	2.5 mg/m ³
4,4'-methylenediphenyl diisocyanate	Employees	Skin touch	Acute - systemic effects	50 mg/kg
	Employees	Skin touch	Acute - local effects	28.7 mg/cm ²
	Employees	Inhalation	Acute - systemic effects	0.1 mg/m ³
	Employees	Inhalation	Acute - local effects	0.1 mg/m ³
	Employees	Inhalation	Long-term - systemic effects	0.05 mg/m ³
	Employees	Inhalation	Long-term local effects	0.05 mg/m ³
	Consumers	Skin touch	Acute - systemic effects	25 mg/kg
	Consumers	Inhalation	Acute - systemic effects	0.05 mg/m ³
	Consumers	Ingestion	Acute - systemic effects	20 mg/kg
	Consumers	Skin touch	Acute - local effects	17.2 mg/cm ²
	Consumers	Inhalation	Acute - local effects	0.05 mg/m ³
	Consumers	Inhalation	Long-term - systemic effects	0.025 mg/m ³
	Consumers	Inhalation	Long-term local effects	0.025 mg/m ³
DIPHENYLMETHANE DIISOCYANATE	Employees	Skin touch	Acute - systemic effects	50 mg/kg
	Employees	Inhalation	Acute - systemic effects	0.1 mg/m ³
	Employees	Skin touch	Acute - local effects	28.7 mg/cm ²
	Employees	Inhalation	Acute - local effects	0.1 mg/m ³
	Employees	Inhalation	Acute - systemic effects	0.05 mg/m ³
	Employees	Inhalation	Acute - local effects	0.05 mg/m ³

Predicted no-effect concentration (PNEC) according to Regulation (EC) Number 1907/2006:

Substance name	Environmental compartment	Value
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenylisocyanate	Freshwater	1 mg/l
	Seawater	0.1 mg/l
	Bottom	1 mg/kg
	Sewage treatment plant	1 mg/l
Bis(isopropyl)naphthalene	Sewage treatment plant	0.15 mg/l
	Freshwater	0.00026 mg/l
	Seawater	0.000026 mg/l
	Freshwater deposits	0.94 mg/kg
	Sea deposits	0.094 mg/kg
Terphenyl, hydrogenated	Bottom	0.19 mg/kg
	Freshwater	0.0001 mg/l
	Seawater	0.00001 mg/l
	Freshwater deposition	3.16 mg/kg
	Sea deposits	0.316 mg/kg
	Bottom	0.631 mg/kg
4,4'-methylenediphenyl diisocyanate	Sewage treatment plant	10.3 mg/l
	Sporadic release	0.001 mg/l
	Freshwater	> 1 mg/l
DIPHENYLMETHANE DIISOCYANATE	Seawater	> 0.1 mg/l
	Bottom	1 mg/kg
	Sewage treatment plant	> 1 mg/l
	Freshwater	> 1 mg/l
DIPHENYLMETHANE DIISOCYANATE	Seawater	> 0.1 mg/l
	Bottom	> 1 mg/kg
	Sewage treatment plant	> 1 mg/l

8.2 Exposure control measures:

Technical controls:

Recommended minimum speed for exhaust ventilation.

Effective ventilation at all workplaces.

Effective extraction ventilation system.

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Ensure that extracted air cannot return to the workplace through the ventilation system.

Personal protection devices:

Eye protection:

Do not wear contact lenses.

Safety glasses with side shields in accordance with EN 166

Provide eyewash facilities and safety showers close to the workplace.

Hand protection

Material:

Protective gloves according to EN 374.

Skin and body protection:

Protective clothing.

Respiratory protection:

Unless adequate local exhaust ventilation is provided, or exposure assessment shows that exposures are within recommended exposure guidelines, use respiratory protection.

When handling the substance, respiratory protection should be worn if there is a risk of exposure to the vapour of the substance.

The equipment must comply with EN 14387.

The filter class of the respiratory protection must be suitable for the maximum pollution concentration (gas/vapour/aerosol/particles) that can be generated when handling the product.

Compressed air masks should be used if this concentration is exceeded.

Protective measures:

Avoid contact with skin.

Wear suitable personal protective equipment.

Persons suffering from skin sensitisation problems, asthma, allergies, chronic or recurrent respiratory diseases should not perform work involving the use of this mixture.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical state:	liquid
Colour:	red brown
Smell:	musty
Odour threshold value:	Not performed
Melting/freezing point:	Not applicable
Boiling point/boiling range:	> 200°C
Upper explosion limit / Upper flammability limit:	Not applicable
Lower explosion limit / Lower flammability limit:	Not applicable
Flash point:	100°C
Ignition temperature:	Not applicable
Self-ignition temperature:	Not applicable
Decomposition temperature:	No data available
pH:	5 Concentration: 1 %
Viscosity	
Viscosity, dynamic:	20 - 40 mPa.s (25°C)
Viscosity, kinematic:	Not performed
Solubility	
Solubility in water:	Not performed
Solubility in other solvents:	Not performed
Partition coefficient: n-octanol/water:	No data available
Vapour pressure:	Not applicable

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Density:	1.1 g/cm ³ (25 °C)
Bulk specific gravity:	Not exported
Relative vapour density:	Not performed
Particle characteristics	
Particle size:	Not applicable
9.2 Other information	
Explosives:	Not applicable
Oxidising properties:	Not applicable
Self-ignition:	Not applicable
Evaporation rate:	Not performed
Surface tension:	Not performed
Sublimation point:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity:

Stable under recommended storage conditions.
Container may be pressurised by carbon dioxide formation due to reaction with humid air and/or water.

10.2 Chemical Stability:

No decomposition if stored and applied as indicated.

10.3 Potential Hazardous Reactions:

Dangerous reactions:

Reacts violently with water.
CO₂ formation in closed vessels causes overpressure and danger of bursting open.

10.4 Conditions to avoid:

Conditions to avoid:

Direct sources of heat.

10.5 Chemically interacting Materials:

Materials to avoid:

Humid air
Acids and bases
Amines

10.6 Hazardous Decomposition Products:

Container may be pressurised by carbon dioxide formation due to reaction with humid air and/or water.
Stable under normal conditions.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

Acute Toxicity

Product:

Acute oral toxicity:

Comments: No data available

Acute toxicity by inhalation:

Acute toxicity estimates: 1.9 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: Calculation method

Acute dermal toxicity:

Comments: No data available

Acute toxicity (other route of administration):

Comments: No data available

Constituents:

Polymeric MDI:

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Acute oral toxicity:

LD50 (Rat, male and female): > 10,000 mg/kg
Method: Guideline test OECD 401

Acute toxicity by inhalation:

LC50 (Rat, male and female): 0.31 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Method: Guideline test OECD 403

Assessment: Harmful by inhalation.

Acute dermal toxicity:

LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: Guideline test OECD 402

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

Acute oral toxicity:

LD50 (Rat, male and female): > 10,000 mg/kg
Method: Tested according to Annex V of Directive 67/548/EEC.
GLP: yes

Acute dermal toxicity:

LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: Guideline test OECD 402

Bis(isopropyl)naphthalene:

Acute toxicity by inhalation:

LC50 (Rat, male and female): > 5.64 mg/l
Exposure time: 4 h

Test atmosphere: dust/mist

Method: Guideline test OECD 403

GLP: yes

Acute dermal toxicity:

LD50 (Rat, male and female): > 4,000 mg/kg
Method: Guideline test OECD 402

GLP: yes

Terphenyl, hydrogenated:

Acute oral toxicity:

LD50 (Rat, male and female): > 10,000 mg/kg
Method: Guideline test OECD 401

GLP: yes

Acute toxicity by inhalation:

LC50 (Rat, male and female): > 4.7 mg/l
Exposure time: 4 h

Test atmosphere: dust/mist

Method: Guideline test OECD 403

GLP: yes

Acute dermal toxicity:

LD50 (Rabbit, male and female): > 2,000 mg/kg
Method: Guideline test OECD 402

GLP: yes

4,4'-methylenediphenyl diisocyanate:

Acute oral toxicity:

LD50 (Rat, male and female): > 2,000 mg/kg
Method: Tested according to Annex V of Directive 67/548/EEC.

GLP: yes

Acute toxicity by inhalation:

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LC50 (rat, man): 1.5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Guideline test OECD 403
GLP: yes

DIPHENYLMETHANE DIISOCYANATE:

Acute oral toxicity:

LD50 (Rat, female): > 5,000 mg/kg
Method: Guideline test OECD 425
GLP: yes

Acute dermal toxicity:

LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: Guideline test OECD 402

Skin corrosion/irritation

Product:

Comments: No data available

Constituents:

Polymeric MDI:

Species: Rabbit
Method: Guideline test OECD 404
Result: minor irritation

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

Species: Rabbit
Method: Guideline test OECD 404
Result: skin irritation
GLP: yes

Bis(isopropyl)naphthalene:

Species: Rabbit
Method: Guideline test OECD 404
Result: no skin irritation
GLP: yes

Terphenyl, hydrogenated:

Species: Rabbit
Result: no skin irritation
GLP: yes

4,4'-methylenediphenyl diisocyanate:

Species: Rabbit
Method: Guideline test OECD 404
Result: no skin irritation
GLP: yes

DIPHENYLMETHANE DIISOCYANATE:

Species: Rabbit
Method: Guideline test OECD 404
Result: skin irritation
GLP: yes

Serious eye damage/eye irritation

Product:

Comments: No data available

Constituents:

Polymeric MDI:

Species: Rabbit
Method: Guideline test OECD 405

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Result: no eye irritation

GLP: yes

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

Species: Rabbit

Method: Guideline test OECD 405

Result: no eye irritation

GLP: yes

Bis(isopropyl)naphthalene:

Species: Rabbit

Method: Guideline test OECD 405

Result: no eye irritation

GLP: yes

4,4'-methylenediphenyl diisocyanate:

Species: Rabbit

Method: Guideline test OECD 405

Result: no eye irritation

DIPHENYLMETHANE DIISOCYANATE:

Species: Rabbit

Method: Guideline test OECD 405

Result: no eye irritation

GLP: yes

Respiratory/skin sensitisation

Product:

Comments: No data available

Constituents:

Polymeric MDI:

Test type: Maximisation test

Route of exposure: Skin contact

Species: Guinea pig

Assessment: Does not cause skin hypersensitivity.

Method: Guideline test OECD 406

Result: negative

Test type: Mouse Local Lymph Node assay (LLNA)

Route of exposure: Skin contact

Type: Mouse

Assessment: May cause sensitisation by skin contact.

Method: Guideline test OECD 429

Result: positive

Route of exposure: intra tracheal

Species: Rat

Assessment: May cause sensitisation by inhalation.

Result: positive

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

Species: Rat

Result: Causes sensitisation.

GLP: yes

Bis(isopropyl)naphthalene:

Test type: Maximisation test

Route of exposure: Skin

Species: Guinea pig

Method: Guideline test OECD 406

Result: Does not cause skin hypersensitivity.

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GLP: yes

4,4'-methylenediphenyl diisocyanate:

Test type: Buehler test

Route of exposure: Skin

Species: Guinea pig

Method: Guideline test OECD 406

Result: Does not cause skin hypersensitivity.

GLP: yes

DIPHENYLMETHANE DIISOCYANATE:

Test type: Maximisation test

Species: Guinea pig

Method: Guideline test OECD 406

Result: May cause sensitisation by skin contact.

GLP: yes

Species: Rat

Result: May cause sensitisation by inhalation.

GLP: yes

Mutagenicity in gametes

Constituents:

Polymeric MDI:

Genotoxicity in vitro: Test type: Ames test

Research species: Salmonella typhimurium

metabolic activation: with and without metabolic activation

Method: Guideline test OECD 471

Result: negative

Genotoxicity in vivo: Test type: Test microcore

Research species: Rat (han)

Method of application: Inhalation

Exposure time: 3x1h/day over 3 weeks)

Method: Guideline test OECD 474

Result: negative

Mutagenicity in germ cells- Assessment: In vitro tests showed no mutagenic effects, From in vivo tests showed no mutagenic effects.

4,4'-methylenediphenyl diisocyanate:

Genotoxicity in vitro: Test type: Ames test

Research species: Salmonella typhimurium

metabolic activation: with and without metabolic activation

Method: Guideline test OECD 471

Result: negative

Genotoxicity in vivo: Test type: Test microcore

Research species: Rat (han)

Method of application: Inhalation

Exposure time: 3x1 h/ day over 3 weeks

Method: Guideline test OECD 474

Result: negative

Mutagenicity in germ cells- Assessment : In vitro tests have shown no mutagenic effects, From in vivo tests showed no mutagenic effects.

Carcinogenicity

Constituents:

Polymeric MDI:

Species: Rat, (male and female)

Method of application: Inhalation

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Exposure time: 2 h
Dose: 0 - 0.2 - 1 - 6 mg/m³
Treatment frequency: 6 hours/day, 5 days/week
Method: Guideline test OECD 453
Test substance: See user's free text
Carcinogenicity -Assessment: Suspected of causing cancer by inhalation.

4,4'-methylenediphenyl diisocyanate:

Species: Rat, (male and female)

Exposure time: 2 hrs

Dose: 0 - 0.2 - 1 - 6 mg/m³

Treatment frequency: 6 hours/ day, 5 days/ week

Method: Guideline test OECD 453

Carcinogenicity -Assessment: Suspected of causing cancer by inhalation.

Reproductive toxicity

Product:

Effects on fertility:

Comments: No data available

Effects on foetal development:

Comments: No data available

Constituents:

Polymeric MDI:

Reproductive toxicity - Assessment : Based on available data; classification criteria not met.

Did not show teratogenic effects in animal tests.

4,4'-methylenediphenyl diisocyanate:

Reproductive toxicity - Assessment : Based on available data; meets the classification criteria has not been met.

Did not show teratogenic effects in animal tests.

STOT from single exposure

Product:

Notes: Not applicable

Constituents:

Polymeric MDI:

Route of exposure: Inhalation

Target organs: Respiratory organs

Assessment: May cause respiratory irritation.

4,4'-methylenediphenyl diisocyanate:

Route of exposure: Inhalation

Target organs: respiratory system

Assessment: May cause respiratory irritation.

STOT on repeated exposure

Constituents:

Polymeric MDI:

Route of exposure: Inhalation

Target organs: respiratory system

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

4,4'-methylenediphenyl diisocyanate:

Route of exposure: Inhalation

Target organs: respiratory system

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

Repeated-dose toxicity

Product:

Comments: No data available

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Constituents:

Polymeric MDI:

Species: Rat, male and female
NOAEL: 0.2 mg/m³
Method of application: Inhalation
Exposure time: 2 h
Number of exposures: 6 hours a day, 5 days a week
Dose: 0 - 0.2 - 1 - 6 mg/m³
Method: Guideline test OECD 453

4,4'-methylenediphenyl diisocyanate:

Species: Rat, male and female
NOAEL: 0.2 mg/m³
Method of application: Inhalation
Exposure time: 2 hrs
Number of exposures: 6 hours/ day, 5 days/ week
Dose: 0 - 0.2 - 1 - 6 mg/m³
Method: Guideline test OECD 453
Target organs: Lungs, Nasal cavity

Aspiration toxicity

Constituents:

Polymeric MDI:

No classification for aspiration toxicity.

4,4'-methylenediphenyl diisocyanate:

No classification for aspiration toxicity.

11.2 Information on other hazards

Endocrine-disrupting properties

Product:

Assessment:

The substance/mixture does not contain any components believed 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 level 0.1% or higher.

Further information

Product:

Notes:

No data available

SECTION 12: Ecological information

12.1 Toxicity:

Product:

Toxicity to fish:

Comments: No data available

Toxicity to daphnia and other aquatic invertebrates:

Comments: No data available

Constituents:

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

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

NOEC: > 10 mg/l

Exposure time: 21 d

Species: Daphnia magna (large water flea)

Test type: semi-static test

Method: OECD Test Guideline 211

Bis(isopropyl)naphthalene:

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Toxicity to fish :

LC50 (Leuciscus idus (golden bindweed)): > 0.5 mg/l
Exposure time: 96 h
Test type: semi-static test
Method: Directive 67/548/EEC, Annex V, C.1.
GLP: yes

Toxicity to daphnia and other aquatic invertebrates :

EC50 (Daphnia magna (large water flea)): 1.7 mg/l
Exposure time: 48 h
Test type: semi-static test
Method: OECD Test Guideline 202
GLP: yes

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

NOEC: 0.013 mg/l
Exposure time: 21 d
Species: Daphnia magna (large water flea)
Test type: semi-static test
M-factor (Chronic aquatic toxicity) : 1

Terphenyl, hydrogenated:

Toxicity to daphnia and other aquatic invertebrates :

EC50 (Daphnia magna (large water flea)): > 1.34 mg/l
Exposure time: 48 h
Test type: static test
Method: OECD Test Guideline 202
GLP: yes

4,4'-methylenediphenyl diisocyanate:

Toxicity to algae :

ErC50 (Scenedesmus subspicatus): > 1,640 mg/l
Exposure time: 72 h
Test type: static test
Method: OECD Test Guideline 201
GLP: yes

DIPHENYLMETHANE DIISOCYANATE:

Toxicity to algae :

ErC50 (Scenedesmus subspicatus): > 1,640 mg/l
Exposure time: 72 h
Test type: static test
Method: OECD Test Guideline 201
GLP: yes

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

NOEC: > 10 mg/l
Exposure time: 21 d
Species: Daphnia magna (large water flea)
Test type: semi-static test
Method: OECD Test Guideline 211

12.2 Persistence and Degradability:

Product:

Biodegradability:

Comments: No data available

Physicochemical removability:

Comments: No data available

Constituents:

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

Biodegradability : Test type: aerobic

Result: Not readily biodegradable.

Bis(isopropyl)naphthalene:

Biodegradability : Test type: aerobic

Result: Not readily biodegradable.

Method: Guideline test OECD 310

GLP: yes

12.3 Bioaccumulation:

Product:

Bioaccumulation:

Comments: No data available

Constituents:

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

Partition coefficient: n-octanol/water : log Pow: 4,51 (22 °C)

pH: 7

Method: OECD Test Guideline 117

Bis(isopropyl)naphthalene:

Bioaccumulation: Species: Cyprinus carpio (Carp)

Bioconcentration factor (BCF): > 500

Method: Guideline test OECD 305

GLP: yes

Terphenyl, hydrogenated:

Partition coefficient: n-octanol/water : log Pow: 6,5

Method: OECD Test Guideline 117

GLP: yes

4,4'-methylenediphenyl diisocyanate:

Bioaccumulation: Species: Cyprinus carpio (Carp)

Exposure time: 28 d

Concentration: 0.00008 mg/l

Bioconcentration factor (BCF): 200

Method: Guideline test OECD 305

GLP: yes

12.4 Mobility in soil:

No data available

12.5 Results of PBT and vPvB assessment:

Product:

Assessment:

This substance/mixture does not contain any components that can be considered persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment:

The substance/mixture does not contain components believed 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 level 0.1% or higher.

12.7 Other Harmful Effects:

Product:

Additional ecological information:

Remarks: There is a risk of environmental damage if this substance is handled or disposed of improperly.

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SECTION 13: Disposal instructions

13.1 Waste treatment methods:

Product:

According to local and national regulations.
Container dangerous when empty.
Do not dispose together with household waste.
Do not mix streams during waste collection.

Contaminated packaging:

Empty containers should be disposed of at an authorised waste treatment facility for reuse or disposal.

SECTION 14: Information relating to transport

14.1 UN number

ADR/RID/ADN:	UN 3082
IMDG:	UN 3082
IATA:	UN 3082

14.2 Proper cargo name according to UN model regulations

ADR/RID/ADN:	ENVIRONMENTALLY HAZARDOUS LIQUID, N.O.S. (Bis(isopropyl)naphthalene isomers)
IMDG:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bis(isopropyl)naphthalene isomers)
IATA:	Environmentally hazardous substance, liquid, n.o.s. (Bis(isopropyl)naphthalene isomers)

14.3 Transport hazard class(es)

ADR/RID/ADN:	9
IMDG:	9
IATA:	9

14.4 Packing group

ADR/RID/ADN

Packaging group:	III
Classification code:	M6
Hazard identification no.:	90
Labels:	9
Tunnel restriction code:	-

Comments: ADR: These substances when carried in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids, are not subject to any other provisions of ADR provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

IMDG

Packaging group:	III
Labels:	9
EmS Code:	F-A, S-F
Notes:	IMDG: Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provisions of this Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class all provisions of this Code relevant to any additional hazards continue to apply.

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IMDG Code segregation group - none

IATA (cargo)

Packing requirement (cargo aircraft): 964
Packing group: III
Labels: Miscellaneous
Notes: IATA: These substances when transported in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass of 5 kg or less for solids, are not subject to any other provisions of these Regulations provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

IATA (Passenger)

Packing requirement (passenger aircraft): 964
Packaging requirement (LQ): Y964
Packaging group: III
Labels: Miscellaneous

14.5 Environmental hazards

ADR/RID/AND

Environmentally hazardous: yes

IMDG

Marine pollution: yes

IATA

Environmentally hazardous: yes

14.6 Special precautions for the user

Notes:

The transport of dangerous goods, including loading and unloading, must be carried out in accordance with regulations by personnel who have received the necessary training.

The transport classification(s) given herein are for information only, and based solely on the properties of the unpackaged material as described in this safety data sheet.

Transport classifications may vary in terms of mode of transport, packaging size and variations in regional or national regulations.

14.7 Sea transport in bulk in accordance with IMO instruments

Not applicable for product, as delivered.

SECTION 15: Statutory information

15.1 Safety, health and environmental regulations and legislation specific to the substance or mixture:

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII):

Restriction conditions for the following dates should be considered:

Number on the list: 3

- ✓ Polymeric MDI (Number on the list: 74, 56)
- ✓ Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate (Number on the list: 74)
- ✓ 4,4'-methylenediphenyl diisocyanate (Number on the list: 74, 56)
- ✓ DIPHENYLMETHANE DIISOCYANATE (Number on the list: 74)

REACH - Candidate list of substances of very high concern for authorisation (Article 59):

Terphenyl, hydrogenated

Regulation (EC) No 1005/2009 on ozone-depleting substances:

Not applicable

Regulation (EE) 2019/1021 on persistent organic pollutants (recast):

Not applicable

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Regulation (EC) No 649/2012 of the European Parliament and of the Council concerning the export and import of dangerous chemicals:

Not applicable

REACH - List of substances subject to authorisation (Annex XIV):

Not applicable

REGULATION (EU) 2019/1148 on the marketing and use of explosives precursors:

Not applicable

Overviews of toxic chemicals and precursor (intermediate) compounds of the International Convention on Chemical Weapons ("International Chemical Weapons Convention (CWC)"):

Not applicable

Council Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors:

Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances:

E2

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Other regulations:

As for the composition of the product, we deliberately do not add any of the substances indicated in European Directive 2011/65/EU (RoHS 2, RoHS3 and China RoHS).

The product therefore complies with the said guidelines.

Also, no conflict minerals are deliberately added to the product.

15.2 Chemical safety assessment:

Not applicable.

SECTION 16: Other information

Full text of the H statements

H304 :	May be fatal if swallowed and enters airways.
H315 :	Causes skin irritation.
H317 :	May cause an allergic skin reaction.
H319 :	Causes severe eye irritation.
H332 :	Harmful by inhalation.
H334 :	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 :	May cause respiratory tract irritation.
H351 :	Suspected of causing cancer.
H373 :	May cause damage to organs on prolonged or repeated exposure.
H410 :	Very toxic to aquatic organisms, with long-lasting effects.
H411 :	Toxic to aquatic organisms with long-lasting effects.

Full text of other abbreviations

Acute Tox. :	Acute toxicity
Aquatic Chronic :	Chronic aquatic toxicity
Asp. Tox. :	Danger by inhalation
Carc. :	Carcinogenicity
Eye Irrit. :	Eye irritation
Resp. Sens. :	Respiratory sensitisation
Skin Irrit. :	Skin corrosion/irritation
Skin Sens. :	Skin sensitisation
STOT RE :	Specific target organ toxicity - repeated exposure
STOT SE :	Specific target organ toxicity - single exposure
2017/164/EU:	Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values

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The information in this safety data sheet is correct to the best of our knowledge at the date of issue indicated.
This information is intended only as guidance for safe handling, use, processing, storage, transportation,
disposal, and release, and should not be considered a guarantee or indication of quality.