

Safety Data Sheet

FLF 100-120-130-140-150-150LT -160-170-180-190-200

Safety Data Sheet dated 23/2/2021, version 2

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

1.1. Product identifier

Mixture identification:

Trade name: FLF 100-120-130-140-150-150LT -160-170-180-190-200

Trade code: GHS FLF100

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

Recommended use:

Polyurethane coating

1.3. Details of the supplier of the safety data sheet

Company:

DEMAK POLYMERS srl

Strada del Cascinotto 163

10156 TORINO (ITALY)

tel +39 0112743048

fax +39 0112744888

+39 011 2978701

Competent person responsible for the safety data sheet:

albertomenozzi@demakgroup.com

1.4. Emergency telephone number

+39 011 2978701

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

⚠ Warning, Acute Tox. 4, Harmful if swallowed.

⚠ Warning, Skin Sens. 1, May cause an allergic skin reaction.

Aquatic Chronic 3, Harmful to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:



Warning

Hazard statements:

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

P261 Avoid breathing vapours.

P264 Wash ... Thoroughly after handling.

P273 Avoid release to the environment.

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

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

Special Provisions:

None

Contains

Propylene Oxide -Glycerol Polymer

GHS FLF100/2

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1,2,2,6,6-pentamethyl-4-piperidyl-sebacate

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$

Other Hazards:

No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
$\geq 30\%$ - $< 40\%$	Propylene Oxide - Glycerol Polymer	CAS: 25791-96-2	⚠ 3.1/4/Oral Acute Tox. 4 H302
$\geq 1\%$ - $< 3\%$	1,2,2,6,6-pentamethyl- 4-piperidyl-sebacate	CAS: 41556-26-7 EC: 255-437-1 REACH No.: 01- 2119491304 -40-0000	⚠ 3.4.2/1 Skin Sens. 1 H317 ⚠ 4.1/A1 Aquatic Acute 1 H400 ⚠ 4.1/C1 Aquatic Chronic 1 H410
$\geq 0.25\%$ - $< 0.5\%$	Reaction products of 2- (4,6-bis(2,4- dimethylphenyl)-1,3,5- triazin-2-yl)-5- hydroxyphenol with ((C10-16, rich in C12- 13 alkyloxy)methyl) oxyrane	Index number: 603-155-00-8 EC: 410-560-1	⚠ 4.1/A1 Aquatic Acute 1 H400 ⚠ 4.1/C1 Aquatic Chronic 1 H410
$< 0.1\%$	1-methoxy-2-propanol; monopropylene glycol methyl ether	Index number: 603-064-00-3 CAS: 107-98-2 EC: 203-539-1	⚠ 2.6/3 Flam. Liq. 3 H226 ⚠ 3.8/3 STOT SE 3 H336

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

In case of Ingestion:

Give nothing to eat or drink.

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In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

4.2. Most important symptoms and effects, both acute and delayed
None

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment:

None

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO₂).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from food, drink and feed.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

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Adequately ventilated premises.

7.3. Specific end use(s)

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2

EU - TWA(8h): 375 mg/m³, 100 ppm - STEL: 563 mg/m³, 150 ppm - Notes: Skin

ACGIH - TWA(8h): 50 ppm - STEL: 100 ppm - Notes: A4 - Eye and URT irr

DNEL Exposure Limit Values

1,2,2,6,6-pentamethyl-4-piperidyl-sebacate - CAS: 41556-26-7

Worker Industry: 2.5 mg/kg - Exposure: Human Dermal - Frequency: Short Term, systemic effects - Endpoint: Irritant

Worker Industry: 2.35 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, systemic effects - Endpoint: Irritant

Worker Industry: 2.35 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, systemic effects - Endpoint: Irritant

Worker Industry: 2.5 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects - Endpoint: Irritant

PNEC Exposure Limit Values

1,2,2,6,6-pentamethyl-4-piperidyl-sebacate - CAS: 41556-26-7

Target: Fresh Water - Value: 0.0022 mg/l

Target: Marine water - Value: 0.00022 mg/l

Target: Freshwater sediments - Value: 1.05 mg/kg

Target: Marine water sediments - Value: 0.11 mg/kg

Target: Soil (agricultural) - Value: 0.21 mg/kg

8.2. Exposure controls

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

Not needed for normal use.

Thermal Hazards:

None

Environmental exposure controls:

None

Appropriate engineering controls:

None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes
Physical state:	Liquid	--	--
Colour:	N.A.	--	--
Odour:	Odourless	--	--
Melting point/freezing point:	N.A.	--	--
Boiling point or initial	N.A.	--	--

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boiling point and boiling range:			
Flammability:	N.A.	--	--
Lower and upper explosion limit:	N.A.	--	--
Flash point:	N.A.	--	--
Auto-ignition temperature:	N.A.	--	--
Decomposition temperature:	N.A.	--	--
pH:	N.A.	--	--
Kinematic viscosity:	N.A.	--	--
Solubility in water:	N.A.	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient n-octanol/water (log value):	N.A.	--	--
Vapour pressure:	N.A.	--	--
Density and/or relative density:	N.A.	--	--
Relative vapour density:	N.A.	--	--
Particle characteristics:			
Particle size:	N.A.	--	--

9.2. Other information

Properties	Value	Method:	Notes
Viscosity:	300-800 mP	--	--

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

It may generate flammable gases on contact with elementary metals (alkalis and alkaline earth), nitrides, and powerful reducing agents.

It may catch fire on contact with oxidising mineral acids, elementary metals (alkalis and alkaline earth), nitrides, organic peroxides and hydroperoxides, oxidising agents, and reducing agents.

10.4. Conditions to avoid

Stable under normal conditions.

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- 10.5. Incompatible materials
None in particular.
- 10.6. Hazardous decomposition products
None.

SECTION 11: Toxicological information

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

Toxicological information of the product:

N.A.

Toxicological information of the main substances found in the product:

1,2,2,6,6-pentamethyl-4-piperidyl-sebacate - CAS: 41556-26-7

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat > 2000 mg/kg

Test: LD50 - Route: Skin - Species: Rat > 2000 mg/kg

Reaction products of 2-(4,6-bis(2,4-dimethylphenyl)-1,3,5-triazin-2-yl)-5-hydroxyphenol with ((C10-16, rich in C12-13 alkyloxy)methyl)oxyrane - Index number: 603-155-00-8

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat > 2000 mg/kg

c) serious eye damage/irritation:

Test: Eye Corrosive - Species: Rabbit Negative

If not differently specified, the information required in Regulation (EU)2020/878 listed below must be considered as N.A.:

- a) acute toxicity;
- b) skin corrosion/irritation;
- c) serious eye damage/irritation;
- d) respiratory or skin sensitisation;
- e) germ cell mutagenicity;
- f) carcinogenicity;
- g) reproductive toxicity;
- h) STOT-single exposure;
- i) STOT-repeated exposure;
- j) aspiration hazard.

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration $\geq 0.1\%$

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

1,2,2,6,6-pentamethyl-4-piperidyl-sebacate - CAS: 41556-26-7

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 0.97 mg/l - Duration h: 96 - Notes: (Iepomis sp.)OECD 203 ISO 7346

Endpoint: LC50 - Species: Fish = 7.9 mg/kg - Duration h: 96 - Notes: (Oncorhynchus mykiss) OECD 203 ISO 7346

Endpoint: EC50 - Species: Daphnia = 20 mg/l - Duration h: 24

Reaction products of 2-(4,6-bis(2,4-dimethylphenyl)-1,3,5-triazin-2-yl)-5-hydroxyphenol with ((C10-16, rich in C12-13 alkyloxy)methyl)oxyrane - Index number: 603-155-00-8

a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Daphnia > 100 mg/l

12.2. Persistence and degradability

N.A.

12.3. Bioaccumulative potential

N.A.

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- 12.4. Mobility in soil
N.A.
- 12.5. Results of PBT and vPvB assessment
vPvB Substances: None - PBT Substances: None
- 12.6. Endocrine disrupting properties
No endocrine disruptor substances present in concentration $\geq 0.1\%$
- 12.7. Other adverse effects
None

SECTION 13: Disposal considerations

- 13.1. Waste treatment methods
Recover if possible. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

- 14.1. UN number or ID number
Not classified as dangerous in the meaning of transport regulations.
- 14.2. UN proper shipping name
N.A.
- 14.3. Transport hazard class(es)
N.A.
- 14.4. Packing group
N.A.
- 14.5. Environmental hazards
ADR-Environmental Pollutant: No
IMDG-Marine pollutant: No
- 14.6. Special precautions for user
N.A.
- 14.7. Maritime transport in bulk according to IMO instruments
N.A.

SECTION 15: Regulatory information

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
 - Dir. 98/24/EC (Risks related to chemical agents at work)
 - Dir. 2000/39/EC (Occupational exposure limit values)
 - Regulation (EC) n. 1907/2006 (REACH)
 - Regulation (EC) n. 1272/2008 (CLP)
 - Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
 - Regulation (EU) n. 2020/878
 - Regulation (EU) n. 286/2011 (ATP 2 CLP)
 - Regulation (EU) n. 618/2012 (ATP 3 CLP)
 - Regulation (EU) n. 487/2013 (ATP 4 CLP)
 - Regulation (EU) n. 944/2013 (ATP 5 CLP)
 - Regulation (EU) n. 605/2014 (ATP 6 CLP)
 - Regulation (EU) n. 2015/1221 (ATP 7 CLP)
 - Regulation (EU) n. 2016/918 (ATP 8 CLP)
 - Regulation (EU) n. 2016/1179 (ATP 9 CLP)
 - Regulation (EU) n. 2017/776 (ATP 10 CLP)
 - Regulation (EU) n. 2018/669 (ATP 11 CLP)
 - Regulation (EU) n. 2018/1480 (ATP 13 CLP)
 - Regulation (EU) n. 2019/521 (ATP 12 CLP)
- Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

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None

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)

Regulation (EC) nr 648/2004 (detergents).

Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1

None

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Full text of phrases referred to in Section 3:

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H226 Flammable liquid and vapour.

H336 May cause drowsiness or dizziness.

Hazard class and hazard category	Code	Description
Flam. Liq. 3	2.6/3	Flammable liquid, Category 3
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3
Aquatic Acute 1	4.1/A1	Acute aquatic hazard, category 1
Aquatic Chronic 1	4.1/C1	Chronic (long term) aquatic hazard, category 1
Aquatic Chronic 3	4.1/C3	Chronic (long term) aquatic hazard, category 3

This safety data sheet has been completely updated in compliance to Regulation 2020/878. Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Acute Tox. 4, H302	Calculation method
Skin Sens. 1, H317	Calculation method
Aquatic Chronic 3, H412	Calculation method

This document was prepared by a competent person who has received appropriate training.

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Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre,
Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van
Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE:	Acute Toxicity Estimate
ATEmix:	Acute toxicity Estimate (Mixtures)
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.

Safety Data Sheet

DKH 30-40-50

Safety Data Sheet dated 23/2/2021, version 2

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

1.1. Product identifier

Mixture identification:

Trade name: DKH 30-40-50

Trade code: GHS 700-DKH

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

1.3. Details of the supplier of the safety data sheet

Company:

DEMAK POLYMERS srl

Strada del Cascinotto 163

10156 TORINO (ITALY)

tel +39 0112743048

fax +39 0112744888

+39 011 2978701

Competent person responsible for the safety data sheet:

albertomenozzi@demakgroup.com

1.4. Emergency telephone number

+39 011 2978701

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

⚠ Danger, Acute Tox. 2, Fatal if inhaled.

⚠ Warning, Skin Irrit. 2, Causes skin irritation.

⚠ Warning, Eye Irrit. 2, Causes serious eye irritation.

⚠ Danger, Resp. Sens. 1, May cause allergy or asthma symptoms or breathing difficulties if inhaled.

⚠ Warning, Skin Sens. 1, May cause an allergic skin reaction.

⚠ Warning, STOT SE 3, May cause respiratory irritation.

⚠ Aquatic Chronic 2, Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:



Danger

Hazard statements:

H330 Fatal if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

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

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P260 Do not breathe vapours.

P273 Avoid release to the environment.

P280 Wear protective gloves and eye/face protection.

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P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310 Immediately call a doctor.
P342+P311 If experiencing respiratory symptoms: Call a doctor.
P391 Collect spillage.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Special Provisions:

EUH204 Contains isocyanates. May produce an allergic reaction.

Contains

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$

Other Hazards:

No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
$\geq 40\%$ - $< 50\%$	3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate	Index number: 615-008-00-5 CAS: 4098-71-9 EC: 223-861-6 REACH No.: 01-2119490408-31-0002	⚠ 3.3/2 Eye Irrit. 2 H319 ⚠ 3.8/3 STOT SE 3 H335 ⚠ 3.2/2 Skin Irrit. 2 H315 ⚠ 3.4.1/1 Resp. Sens. 1 H334 ⚠ 3.4.2/1 Skin Sens. 1 H317 ⚠ 4.1/C2 Aquatic Chronic 2 H411 ⚠ 3.1/1/Inhal Acute Tox. 1 H330 Specific Concentration Limits: C $\geq 0,5\%$: Resp. Sens. 1 H334 C $\geq 0,5\%$: Skin Sens. 1 H317

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Do NOT induce vomiting.

In case of Inhalation:

If breathing is irregular or stopped, administer artificial respiration.

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- In case of inhalation, consult a doctor immediately and show him packing or label.
- 4.2. Most important symptoms and effects, both acute and delayed
None
- 4.3. Indication of any immediate medical attention and special treatment needed
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Treatment:
None

SECTION 5: Firefighting measures

- 5.1. Extinguishing media
Suitable extinguishing media:
Water.
Carbon dioxide (CO₂).
Extinguishing media which must not be used for safety reasons:
None in particular.
- 5.2. Special hazards arising from the substance or mixture
Do not inhale explosion and combustion gases.
Burning produces heavy smoke.
- 5.3. Advice for firefighters
Use suitable breathing apparatus .
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

- 6.1. Personal precautions, protective equipment and emergency procedures
Wear personal protection equipment.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.
Provide adequate ventilation.
Use appropriate respiratory protection.
See protective measures under point 7 and 8.
- 6.2. Environmental precautions
Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
Suitable material for taking up: absorbing material, organic, sand
- 6.3. Methods and material for containment and cleaning up
Wash with plenty of water.
- 6.4. Reference to other sections
See also section 8 and 13

SECTION 7: Handling and storage

- 7.1. Precautions for safe handling
Avoid contact with skin and eyes, inhalation of vapours and mists.
Use localized ventilation system.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
See also section 8 for recommended protective equipment.
Advice on general occupational hygiene:
Contaminated clothing should be changed before entering eating areas.
Do not eat or drink while working.
- 7.2. Conditions for safe storage, including any incompatibilities
Always keep in a well ventilated place.
Keep away from food, drink and feed.

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Incompatible materials:

None in particular.

Instructions as regards storage premises:

Cool and adequately ventilated.

7.3. Specific end use(s)

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate - CAS: 4098-71-9

EU - TWA: 0.005 ppm

ACGIH - TWA(8h): 0.005 ppm - Notes: Resp sens

DNEL Exposure Limit Values

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate - CAS: 4098-71-9

Worker Professional: 0.0453 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, local effects - Endpoint: Irritant - Notes: vie respiratorie

Worker Professional: 0.0453 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, local effects - Endpoint: Irritant - Notes: vie respiratorie

PNEC Exposure Limit Values

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate - CAS: 4098-71-9

Target: Fresh Water - Value: 0.06 mg/l

Target: Marine water - Value: 0.006 mg/l

Target: Freshwater sediments - Value: 218.92 mg/kg

Target: Marine water sediments - Value: 21.89 mg/kg

Target: Soil (agricultural) - Value: 44.01 mg/kg

Target: Microorganisms in sewage treatments - Value: 10.6 mg/l

8.2. Exposure controls

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

Use respiratory protection where ventilation is insufficient or exposure is prolonged.

Use adequate protective respiratory equipment.

Thermal Hazards:

None

Environmental exposure controls:

None

Appropriate engineering controls:

None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes
Physical state:	Liquid	--	--
Colour:	N.A.	--	--
Odour:	Odourless	--	--

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Melting point/freezing point:	N.A.	--	--
Boiling point or initial boiling point and boiling range:	N.A.	--	--
Flammability:	N.A.	--	--
Lower and upper explosion limit:	N.A.	--	--
Flash point:	N.A.	--	--
Auto-ignition temperature:	N.A.	--	--
Decomposition temperature:	N.A.	--	--
pH:	N.A.	--	--
Kinematic viscosity:	N.A.	--	--
Solubility in water:	N.A.	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient n-octanol/water (log value):	N.A.	--	--
Vapour pressure:	N.A.	--	--
Density and/or relative density:	N.A.	--	--
Relative vapour density:	N.A.	--	--
Particle characteristics:			
Particle size:	N.A.	--	--

9.2. Other information

Properties	Value	Method:	Notes
Viscosity:	300 -1000 mPas (23°C)	--	--

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

It may generate flammable gases on contact with elementary metals (alkalis and alkaline earth, alloys in powder or vapours) and powerful reducing agents.

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It may generate toxic gases on contact with oxidising mineral acids, and powerful oxidising agents.
It may catch fire on contact with oxidising mineral acids, and powerful oxidising agents.

- 10.4. Conditions to avoid
Stable under normal conditions.
- 10.5. Incompatible materials
None in particular.
- 10.6. Hazardous decomposition products
None.

SECTION 11: Toxicological information

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

Toxicological information of the product:

N.A.

Toxicological information of the main substances found in the product:

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate - CAS:
4098-71-9

a) acute toxicity:

Test: LC50 - Route: Inhalation Mist - Species: Rat = 0.031 mg/l - Duration: 4h

b) skin corrosion/irritation:

Test: Skin Corrosive - Route: Skin - Species: Rabbit Positive

d) respiratory or skin sensitisation:

Test: Respiratory Tract Irritant - Route: Inhalation Vapour - Species: Rabbit Positive

Test: Skin Sensitization - Route: Skin - Species: GUINEA PIG Positive

h) STOT-single exposure:

Test: Respiratory Tract Irritant - Route: Inhalation Positive - Notes: VIE RESPIRATORIE SUPERIORI

If not differently specified, the information required in Regulation (EU)2020/878 listed below must be considered as N.A.:

- a) acute toxicity;
- b) skin corrosion/irritation;
- c) serious eye damage/irritation;
- d) respiratory or skin sensitisation;
- e) germ cell mutagenicity;
- f) carcinogenicity;
- g) reproductive toxicity;
- h) STOT-single exposure;
- i) STOT-repeated exposure;
- j) aspiration hazard.

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration \geq 0.1%

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate; isophorone di-isocyanate - CAS:
4098-71-9

b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Daphnia = 3 mg/l

12.2. Persistence and degradability

N.A.

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

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N.A.

- 12.5. Results of PBT and vPvB assessment
vPvB Substances: None - PBT Substances: None
- 12.6. Endocrine disrupting properties
No endocrine disruptor substances present in concentration $\geq 0.1\%$
- 12.7. Other adverse effects
None

SECTION 13: Disposal considerations

- 13.1. Waste treatment methods
Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information



- 14.1. UN number or ID number
ADR-UN Number: 2290
IATA-UN Number: 2290
IMDG-UN Number: 2290
- 14.2. UN proper shipping name
ADR-Shipping Name: ISOPHORONE DIISOCYANATE
IATA-Shipping Name: ISOPHORONE DIISOCYANATE
IATA-Technical name: Isophorone Diisocyanate
IMDG-Shipping Name: ISOPHORONE DIISOCYANATE
IMDG-Technical name: Isophorone Diisocyanate
- 14.3. Transport hazard class(es)
ADR-Class: 6.1
ADR-Label: 6.1
IATA-Class: 6.1
IATA-Label: 6.1
IMDG-Class: 6.1
IMDG-Label: 6.1
- 14.4. Packing group
ADR-Packing Group: III
IATA-Packing group: III
IMDG-Packing group: III
- 14.5. Environmental hazards
ADR-Environmental Pollutant: Yes
IMDG-Marine pollutant: Marine Pollutant
IMDG-EmS: F-A , S-A
- 14.6. Special precautions for user
ADR-Subsidiary hazards: -
ADR-S.P.: -
ADR-Transport category (Tunnel restriction code): 2 (E)
IATA-Passenger Aircraft: 655
IATA-Subsidiary hazards: -
IATA-Cargo Aircraft: 663
IATA-S.P.: -
IATA-ERG: 6L
IMDG-Subsidiary hazards: -

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IMDG-Stowage and handling: Category B
IMDG-Segregation: Clear of living quarters.
14.7. Maritime transport in bulk according to IMO instruments
N.A.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Dir. 98/24/EC (Risks related to chemical agents at work)
Dir. 2000/39/EC (Occupational exposure limit values)
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) n. 2020/878
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:
None

Where applicable, refer to the following regulatory provisions :
Directive 2012/18/EU (Seveso III)
Regulation (EC) nr 648/2004 (detergents).
Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):
Seveso III category according to Annex 1, part 1
Product belongs to category: H2, E2

15.2. Chemical safety assessment
No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Full text of phrases referred to in Section 3:
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H315 Causes skin irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H411 Toxic to aquatic life with long lasting effects.
H330 Fatal if inhaled.

Hazard class and hazard category	Code	Description
Acute Tox. 1	3.1/1/Inhal	Acute toxicity (inhalation), Category 1

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Acute Tox. 2	3.1/2/Inhal	Acute toxicity (inhalation), Category 2
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Resp. Sens. 1	3.4.1/1	Respiratory Sensitisation, Category 1
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3
Aquatic Chronic 2	4.1/C2	Chronic (long term) aquatic hazard, category 2

This safety data sheet has been completely updated in compliance to Regulation 2020/878. Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Acute Tox. 2, H330	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Resp. Sens. 1, H334	Calculation method
Skin Sens. 1, H317	Calculation method
STOT SE 3, H335	Calculation method
Aquatic Chronic 2, H411	Calculation method

This document was prepared by a competent person who has received appropriate training.
Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre,
Commission of the European Communities
SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van
Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE: Acute Toxicity Estimate
ATEmix: Acute toxicity Estimate (Mixtures)
CAS: Chemical Abstracts Service (division of the American Chemical Society).
CLP: Classification, Labeling, Packaging.
DNEL: Derived No Effect Level.

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EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.