

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

# RIGO

VERFFABRIEK

Trade name : SKYLT\_Titanium\_Verharder  
Revision date : 28.07.2021  
Print date : 04-04-2022

Version (Revision) : 4.0.0 (3.0.0)

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

### 1.1 Product identifier

SKYLT\_Titanium\_Verharder

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

The product is intended for professional use.

#### Relevant identified uses

Hardener for coating materials

### 1.3 Details of the supplier of the safety data sheet

#### Supplier

RIGO Verffabriek BV

**Street :** Dokweg 40

**Postal code/City :** 1976 CA IJmuiden

**Telephone :** +31 (0)255 548448

**Information contact :** veilig@rigoverffabriek.nl

### 1.4 Emergency Telephone Number:

+31 (0)255 548448 Call a doctor/physician or call 111 (less urgent 999)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008 [CLP]

Aquatic Chronic 3 ; H412 - Hazardous to the aquatic environment : Chronic 3 ; Harmful to aquatic life with long lasting effects.

Acute Tox. 4 ; H332 - Acute toxicity (inhalative) : Category 4 ; Harmful if inhaled.

Skin Sens. 1 ; H317 - Skin sensitisation : Category 1 ; May cause an allergic skin reaction.

STOT SE 3 ; H335 - STOT-single exposure : Category 3 ; May cause respiratory irritation.

#### Classification procedure

H317: Obtained on the basis of the calculation method

H332: Obtained on the basis of the calculation method

H335: Obtained on the basis of the calculation method

H412: Obtained on the basis of the calculation method

### 2.2 Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

##### Hazard pictograms



Exclamation mark (GHS07)

##### Signal word

Warning

##### Hazard components for labelling

HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3

HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP HDI ; CAS No. : 666723-27-9

HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP IPDI ; CAS No. : 1574548-27-8

HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0

##### Hazard statements

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H332 Harmful if inhaled.  
H317 May cause an allergic skin reaction.  
H335 May cause respiratory irritation.  
H412 Harmful to aquatic life with long lasting effects.

#### Precautionary statements

P261 Avoid breathing mist/spray.  
P271 Use only outdoors or in a well-ventilated area.  
P312 Call a POISON CENTER or doctor if you feel unwell.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.

#### Special rules for supplemental label elements for certain mixtures

EUH204 Contains isocyanates. May produce an allergic reaction.

### 2.3 Other hazards

None

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Hazardous ingredients

HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; EC No. : 223-242-0; CAS No. : 3779-63-3

Weight fraction :  $\geq 25 - < 50$  %

Classification 1272/2008 [CLP] : Acute Tox. 4 ; H332 Skin Sens. 1 ; H317 STOT SE 3 ; H335

HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP HDI ; EC No. : 679-494-0; CAS No. : 666723-27-9

Weight fraction :  $\geq 25 - < 50$  %

Classification 1272/2008 [CLP] : Acute Tox. 4 ; H332 Skin Sens. 1 ; H317 STOT SE 3 ; H335 Aquatic Chronic 3 ; H412

HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP IPDI ; EC No. : 808-295-5; CAS No. : 1574548-27-8

Weight fraction :  $\geq 10 - < 20$  %

Classification 1272/2008 [CLP] : Skin Sens. 1 ; H317 STOT SE 3 ; H335 Aquatic Chronic 3 ; H412

HEXAMETHYLENE-DI-ISOCYANATE ; EC No. : 212-485-8; CAS No. : 822-06-0

Weight fraction :  $\geq 0,05 - < 0,5$  %

Classification 1272/2008 [CLP] : Acute Tox. 3 ; H331 Resp. Sens. 1 ; H334 Skin Irrit. 2 ; H315 Skin Sens. 1 ; H317 Eye Irrit. 2 ; H319 STOT SE 3 ; H335

#### Additional information

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

#### Components according to regulation (EG) Nr. 648/2004

None

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General information

When in doubt or if symptoms are observed, get medical advice. Never give anything by mouth to an unconscious person or a person with cramps.

#### Following inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. If unconscious but breathing normally, place in recovery position and seek medical advice.

#### In case of skin contact

Change contaminated, saturated clothing. After contact with skin, wash immediately with plenty of water and soap.

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Clean with detergents. Avoid solvent cleaners.

### After eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

### Following ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

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

Notes for the doctor First Aid, decontamination, treatment of symptoms.

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

None

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

alcohol resistant foam Carbon dioxide (CO<sub>2</sub>) Extinguishing powder Water spray jet

#### Unsuitable extinguishing media

Strong water jet

### 5.2 Special hazards arising from the substance or mixture

In case of fire may be liberated: Carbon dioxide (CO<sub>2</sub>) Nitrogen oxides (NO<sub>x</sub>) Isocyanates Hydrogen cyanide (hydrocyanic acid) In case of fire and/or explosion do not breathe fumes.

### 5.3 Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

#### Special protective equipment for firefighters

Cool endangered containers with water in case of fire. Do not allow run-off from fire-fighting to enter drains or water courses.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

##### Protective equipment

Use personal protection equipment. Provide adequate ventilation. Remove all sources of ignition.

### 6.2 Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

### 6.3 Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal. Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Add the decontaminant to the remnants and let stand for several days in a non-sealed container until no further reaction is observed. Once reaction is finished, close container and dispose of.

### 6.4 Reference to other sections

Disposal: see section 13

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Provide adequate ventilation as well as local exhaust at critical locations. Respiratory protection is required for not

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sufficiently ventilated working places and during the spraying processing. Use ventilation to extract vapours from freshly coated articles/objects and surfaces. Precautions against fire and explosion Avoid contact with skin, eyes and clothes. Do not breathe gas/vapour/aerosol. When using do not eat, drink, smoke, sniff. Wash hands before eating, drinking or smoking. Keep work clothes separately. Take off immediately all contaminated clothing.

## 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a cool, well-ventilated place.

## 7.3 Specific end use(s)

None

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### DNEL-/PNEC-values

##### DNEL/DMEL

Limit value type : DNEL worker (local) ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )

Exposure route : Inhalation

Exposure frequency : Short-term

Limit value : 1 mg/m<sup>3</sup>

Limit value type : DNEL worker (local) ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )

Exposure route : Dermal

Exposure frequency : Long-term

Remark : High hazard (no threshold derived) Most sensitive endpoint: sensitization (skin)

Limit value type : DNEL worker (local) ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )

Exposure route : Dermal

Exposure frequency : Short-term

Remark : High hazard (no threshold derived) Most sensitive endpoint: sensitization (skin)

Limit value type : DNEL worker (local) ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )

Exposure route : Inhalation

Exposure frequency : Long-term

Limit value : 0,5 mg/m<sup>3</sup>

Limit value type : DNEL worker (local) ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )

Exposure route : Inhalation

Exposure frequency : Short-term

Limit value : 0,07 mg/m<sup>3</sup>

Limit value type : DNEL worker (local) ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )

Exposure route : Inhalation

Exposure frequency : Long-term

Limit value : 0,035 mg/m<sup>3</sup>

##### PNEC

Limit value type : PNEC (Aquatic, freshwater) ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )

Limit value : 0,127 mg/l

Limit value type : PNEC (Aquatic, marine water) ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )

Limit value : 0,0127 mg/l

Limit value type : Soil ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )

Limit value : 53182 mg/kg

Limit value type : PNEC (Sediment, freshwater) ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )

Limit value : 266700 mg/kg

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Limit value type :	PNEC (Sediment, marine water) ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )
Limit value :	26670 mg/kg
Limit value type :	PNEC (Sewage treatment plant) ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )
Limit value :	38,3 mg/l
Limit value type :	PNEC (Aquatic, freshwater) ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )
Limit value :	77,4 µg/l
Limit value type :	PNEC (Aquatic, marine water) ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )
Limit value :	7,74 µg/l
Limit value type :	Soil ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )
Limit value :	0,0026 mg/kg dry weight
Limit value type :	PNEC (Sediment, freshwater) ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )
Limit value :	0,01334 mg/kg dry weight
Limit value type :	PNEC (Sediment, marine water) ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )
Limit value :	0,00133 mg/kg dry weight
Limit value type :	PNEC (Sewage treatment plant) ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )
Limit value :	8,42 mg/l

## 8.2 Exposure controls

### Personal protection equipment

#### Eye/face protection

Eye glasses with side protection.

#### Skin protection

Wear suitable working clothes.

#### Hand protection

Suitable glove type according to DIN EN 374.

Gloves for repeated or prolonged exposure (breakthrough time > 480 min):

Butyl rubber, Thickness > 0,3 mm.

FKM (fluoro rubber) Thickness > 0,7 mm.

Gloves for splash protection and short protection (breakthrough time > 30 min):

Nitrile rubber (NBR), Thickness > 0,25 mm.

Splash protection gloves should be replaced immediately if they come into contact with chemicals.

Due to many conditions (e.g. temperature, wear) the practical use of a chemical protective glove in practice can be much shorter than the breakthrough time determined through testing. Check safety gloves for correct condition before each use.

#### Respiratory protection

In case of insufficient ventilation in the workplace and during spray-injection molding, nose and mouth protection is required. Wear a respirator conforming to EN140 with Type A/P2 filter or better. People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**Colour :** Colourless.

**Odour :** odourless

#### Safety characteristics

**Physical state :**

Liquid

**Melting point/freezing point :**

not relevant

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<b>Freezing point :</b>			not relevant
<b>Initial boiling point and boiling range :</b>	approx.	193	°C
<b>Decomposition temperature :</b>		No data available	
<b>Flash point :</b>	approx.	88	°C
<b>Lower explosion limit :</b>		No data available	
<b>Upper explosion limit :</b>		No data available	
<b>Density - dependent of color :</b>	( 20 °C )	approx.	1,13 g/cm <sup>3</sup>
<b>Relative density :</b>	( 20 °C )		No data available
<b>Water solubility :</b>	( 20 °C )		practically insoluble
<b>log P O/W :</b>			No data available
<b>Cinematic viscosity :</b>	( 40 °C )		No data available
<b>Solid content :</b>		approx.	70 Weight-%
<b>Odour threshold :</b>			No data available
<b>Relative vapour density :</b>	( 20 °C )		No data available
<b>Vapourisation rate :</b>			No data available
<b>Flammable solids :</b>			Not applicable.
<b>Flammable gases :</b>			Not applicable.
<b>Oxidising liquids :</b>			Not relevant.
<b>Explosive properties :</b>			Not relevant.

## 9.2 Other information

None

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No information available.

### 10.2 Chemical stability

No information available.

### 10.3 Possibility of hazardous reactions

No information available.

### 10.4 Conditions to avoid

No information available.

### 10.5 Incompatible materials

Exothermic reaction with: Amines. Alcohols Water.

### 10.6 Hazardous decomposition products

No information available.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Acute oral toxicity

Parameter :	LD50 ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )
Exposure route :	Oral
Species :	Rat
Effective dose :	> 2500 mg/kg
Method :	OECD 423
Parameter :	LD50 ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP HDI ; CAS No. : 666723-27-9 )
Exposure route :	Oral

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Species : Rat  
Effective dose : => 5000 mg/kg  
Method : OECD 423  
Parameter : LD50 ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP IPDI ; CAS No. : 1574548-27-8 )  
Exposure route : Oral  
Species : Rat  
Effective dose : > 2000 mg/kg  
Parameter : LD50 ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )  
Exposure route : Oral  
Species : Rat  
Effective dose : 959 mg/kg bw/day  
Method : OECD 401

### Acute dermal toxicity

Parameter : LD50 ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )  
Exposure route : Dermal  
Species : Rabbit  
Effective dose : > 2000 mg/kg  
Parameter : LD50 ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP HDI ; CAS No. : 666723-27-9 )  
Exposure route : Dermal  
Species : Rabbit  
Effective dose : > 2000 mg/kg  
Parameter : LD50 ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP HDI ; CAS No. : 666723-27-9 )  
Exposure route : Dermal  
Species : Rat  
Effective dose : > 2000 mg/kg  
Method : OECD 402  
Parameter : LD50 ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP IPDI ; CAS No. : 1574548-27-8 )  
Exposure route : Dermal  
Species : Rabbit  
Effective dose : > 2000 mg/kg  
Method : OECD 402  
Parameter : LD50 ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )  
Exposure route : Dermal  
Species : Rat  
Effective dose : > 7000 mg/kg bw/day  
Method : OECD 402

### Acute inhalation toxicity

Parameter : ATEmix calculated  
Exposure route : Inhalation (dust/mist)  
Effective dose : 2,73 mg/l  
Exposure time : 4 h

### Corrosion

#### Skin corrosion/irritation

Parameter : Skin corrosion/irritation ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )  
Species : Rabbit  
Exposure time : 4 h  
Result : Slightly irritant  
Method : OECD 404

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Parameter : Skin corrosion/irritation ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP IPDI ; CAS No. : 1574548-27-8 )  
Species : Rabbit  
Result : Non-irritant  
Method : OECD 404

**Serious eye damage/eye irritation**

Parameter : Serious eye damage/eye irritation ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )

Species : Rabbit  
Result : Slightly irritant  
Method : OECD 405

Parameter : Serious eye damage/eye irritation ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP IPDI ; CAS No. : 1574548-27-8 )

Species : Rabbit  
Result : Non-irritant  
Method : OECD 405

**Irritation to respiratory tract**

No information available.

**Respiratory or skin sensitisation**

**Skin sensitisation**

Parameter : Skin sensitisation ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )

Species : Mouse  
Result : Sensitising.  
Method : OECD 429

Parameter : Skin sensitisation ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )

Species : guinea pig  
Result : Sensitising.  
Method : OECD 406

Parameter : Skin sensitisation ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP HDI ; CAS No. : 666723-27-9 )

Species : Mouse  
Result : Sensitising.  
Method : OECD 429

Parameter : Skin sensitisation ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP IPDI ; CAS No. : 1574548-27-8 )

Species : Mouse  
Result : Sensitising.  
Method : OECD 429

**Repeated dose toxicity (subacute, subchronic, chronic)**

**Subacute inhalation toxicity**

Parameter : NOAEL(C) ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )

Exposure route : Inhalation  
Species : Rat  
Effective dose : 3,3 mg/m<sup>3</sup>  
Exposure time : 90 dagen  
Method : OECD 413

Parameter : NOAEL(C) ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP HDI ; CAS No. : 666723-27-9 )

Exposure route : Inhalation  
Species : Rat  
Effective dose : 3,3 mg/m<sup>3</sup>  
Exposure time : 90 dagen



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Method : OECD 413

### Chronic inhalation toxicity

Parameter : NOAEC ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )  
Exposure route : Inhalation  
Species : Rat  
Effective dose : 0,164 ppm  
Method : OECD 453

### CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

#### Carcinogenicity

No information available.

#### Germ cell mutagenicity

No information available.

#### Reproductive toxicity

No information available.

### STOT-single exposure

No information available.

### STOT-repeated exposure

No information available.

### Aspiration hazard

No information available.

## 11.5 Additional information

Over-exposure, especially when spraying coatings containing isocyanate without the necessary precautions, entails the risk of concentration-dependent irritating effects on eyes, nose throat, and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations, including concentrations below the occupational exposure limit. Prolonged contact with the skin may cause tanning and irritant effects. Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction.

## SECTION 12: Ecological information

Do not allow to enter ground-water, surface water or drains, even not in small quantities.

### 12.1 Toxicity

#### Aquatic toxicity

##### Acute (short-term) fish toxicity

Parameter : LC50 ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )  
Species : Danio rerio  
Effective dose : > 100 mg/l  
Exposure time : 96 h  
Parameter : LC50 ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP HDI ; CAS No. : 666723-27-9 )  
Species : Danio rerio  
Effective dose : approx. 35,2 mg/l  
Exposure time : 96 h  
Method : OECD 203  
Parameter : LC50 ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP IPDI ; CAS No. : 1574548-27-8 )  
Species : Danio rerio  
Effective dose : approx. 35,2 mg/l  
Exposure time : 96 h  
Method : OECD 203

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Parameter : LC50 ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )  
Species : Danio rerio (zebrafish)  
Effective dose : 22 mg/l  
Exposure time : 96 hour(s)  
Parameter : LC0 ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )  
Species : Danio rerio  
Effective dose : => 82,8 mg/l  
Exposure time : 96 hour(s)  
Method : EU method C.1

**Acute (short-term) toxicity to crustacea**

Parameter : EC50 ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )  
Species : Daphnia magna (Big water flea)  
Effective dose : > 100 mg/l  
Exposure time : 48 h  
Parameter : EC50 ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP HDI ; CAS No. : 666723-27-9 )  
Species : Daphnia magna (Big water flea)  
Effective dose : > 100 mg/l  
Exposure time : 48 h  
Method : OECD 202  
Parameter : EC50 ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP IPDI ; CAS No. : 1574548-27-8 )  
Species : Daphnia magna (Big water flea)  
Effective dose : > 100 mg/l  
Exposure time : 48 h  
Method : OECD 202  
Parameter : EC0 ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )  
Species : Daphnia magna (Big water flea)  
Effective dose : => 89,1 mg/l  
Exposure time : 48 hour(s)  
Method : EU method C.2

**Acute (short-term) toxicity to algae and cyanobacteria**

Parameter : ErC50 ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )  
Species : Scenedesmus subspicatus  
Effective dose : > 1000 mg/l  
Exposure time : 72 h  
Method : DIN 38412 / part 15  
Parameter : ErC50 ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP HDI ; CAS No. : 666723-27-9 )  
Species : Desmodesmus subspicatus  
Effective dose : 72 mg/l  
Exposure time : 72 h  
Method : OECD 201  
Parameter : ErC50 ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP IPDI ; CAS No. : 1574548-27-8 )  
Species : Desmodesmus subspicatus  
Effective dose : 72 mg/l  
Exposure time : 72 h  
Method : OECD 201  
Parameter : ErC50 ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )  
Species : Desmodesmus subspicatus  
Effective dose : > 77,4 mg/l

**Toxicity to microorganisms**

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# RIGO

VERFFABRIEK

**Trade name :** SKYLT\_Titanium\_Verharder  
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**Print date :** 04-04-2022

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Parameter : Bacteria toxicity ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )  
Evaluation parameter : Activated sludge  
Effective dose : 3,828 mg/l  
Exposure time : 3 h  
Method : OECD 209  
Parameter : EC50 ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP HDI ; CAS No. : 666723-27-9 )  
Evaluation parameter : Activated sludge  
Effective dose : > 10000 mg/l  
Method : OECD 209  
Parameter : Bacteria toxicity ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP IPDI ; CAS No. : 1574548-27-8 )  
Evaluation parameter : Activated sludge  
Effective dose : > 10000 mg/l  
Method : OECD 209  
Parameter : EC50 ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )  
Effective dose : 842 mg/l  
Exposure time : 3 hour(s)  
Method : OECD 209

## 12.2 Persistence and degradability

### Biodegradation

Parameter : Biodegradation ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )  
Evaluation parameter : Aerobic  
Effective dose : 1 %  
Exposure time : 28 dagen  
Evaluation : Not readily biodegradable (according to OECD criteria)  
Parameter : Biodegradation ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP HDI ; CAS No. : 666723-27-9 )  
Evaluation parameter : Aerobic  
Effective dose : 0 %  
Exposure time : 28 dagen  
Method : OECD 301F  
Parameter : Biodegradation ( HYDROFIEL ALIFATISCH POLYISOCYANAAT GEBASEERD OP IPDI ; CAS No. : 1574548-27-8 )  
Evaluation parameter : Aerobic  
Effective dose : 0 %  
Exposure time : 28 dagen  
Evaluation : Not readily biodegradable (according to OECD criteria)  
Method : OECD 301F  
Parameter : BOD (% of ThOD) ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )  
Effective dose : 42 %

## 12.3 Bioaccumulative potential

Parameter : Bioconcentration factor (BCF) ( HEXAMETHYLEEN-1,6-DIISOCYANAAT HOMOPOLYMEER ; CAS No. : 3779-63-3 )  
Concentration : 3,2  
Parameter : Bioconcentration factor (BCF) ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )  
Concentration : 58  
Parameter : Partition coefficient n-octanol /water (log P O/W) ( HEXAMETHYLENE-DI-ISOCYANATE ; CAS No. : 822-06-0 )  
Concentration : 3,77

## 12.4 Mobility in soil

No information available.

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## 12.5 Results of PBT and vPvB assessment

No information available.

## 12.6 Other adverse effects

Isocyanate reacts with water at the interface forming CO<sub>2</sub> and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by watersoluble solvents. Previous experience shows that polyurea is inert and non-degradable.

## 12.7 Additional ecotoxicological information

None

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

The generation of waste should be avoided or minimised wherever possible. Disposal of this product and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

### 14.1 UN number

No dangerous good in sense of these transport regulations.

### 14.2 UN proper shipping name

No dangerous good in sense of these transport regulations.

### 14.3 Transport hazard class(es)

No dangerous good in sense of these transport regulations.

### 14.4 Packing group

No dangerous good in sense of these transport regulations.

### 14.5 Environmental hazards

No dangerous good in sense of these transport regulations.

### 14.6 Special precautions for user

No dangerous good in sense of these transport regulations. Moisture-sensitive. Do not expose to temperatures above 50 °C. Keep away from foodstuffs, acids and alkalis.

## SECTION 15: Regulatory information

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

#### National regulations

#### Additional information

The European Commission for the Association of Paint and Printing Ink Manufacturers - CEPE - provides the following information for dyes containing isocyanate: Ready-to-use dyes containing isocyanates may cause irritation of mucous membranes - in particular irritate the respiratory tract and provoke hypersensitivity reactions. There is a risk of sensitization by inhalation of vapors or spray mist. When handling isocyanate-containing dyes, all measures for solvent-containing dyes must be carefully observed. In particular, spray mists and vapors should not be inhaled. Allergic, asthmatic and persons susceptible to respiratory diseases should not work with dyes containing isocyanate.

### 15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this preparation were not carried out.

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### SECTION 16: Other information

#### 16.1 Indication of changes

01. Relevant identified uses · 02. Label elements · 03. Hazardous ingredients

#### 16.2 Abbreviations and acronyms

ADR = Europese overeenkomst met betrekking tot het vervoer van gevaarlijke goederen over de weg  
ATE = Acut toxiciteitschatting  
BCF = Bioconcentration Factor, bioconcentratiefactor  
BOD = Biochemical Oxygen Demand/Biological Oxygen Demand  
CAS No = Chemical Abstracts Service Number (see ACS - American Chemical Society)  
CLP = Indeling, etikettering en verpakking van stoffen en mengsels [Verordening (EG) No. 1272/2008]  
CMR = Carcinogenic, Mutagenic or toxic to Reproduction (substances)  
COD = Chemical Oxygen Demand  
CSR = Chemical Safety Report  
DNEL = Derived No-Effect Level, de afgeleide dosis zonder effect  
EbC50 = Median effective concentration (biomass, e.g. of algae)  
EC50 = Median effective concentration  
ED50 = Effective Dose  
EINECS = European Inventory of Existing Commercial Chemical Substances (EU, outdated, now replaced by EC Number)  
ErC50 = Median effective concentration (growth rate, e.g. of algae)  
IATA = International Air Transport Association, internationaal Lucht Transport Vereniging  
IMDG = International Maritime Dangerous Goods Code, internationaal Maritiem Transport voor Gevaarlijke goederen  
ISO = International Organization for Standardization  
IUCLID = International Uniform Chemical Information Database  
Kow = Octanol/Water Partition Coefficient  
LC50 = Concentration required to kill 50% of test organisms  
LD50 = Dose required to kill 50% of test organisms  
LEL = Lower Explosive Limit/Lower Explosion Limit  
LOAEL = Lowest observed adverse effect level  
NOAEL = No Observed Adverse Effect Level  
NOEC = No observed effect concentration  
NOEL = No Observable Effect Level  
OECD = Organization for Economic Cooperation and Development  
OEL = Occupational Exposure Limits  
PBT = Persistent, Bioaccumulatief en Toxisch  
PNEC = Voorspelde geen effect concentratie  
RAR = Risk Assessment Report (EU)  
REACH = Registration, Evaluation and Authorization of Chemicals  
REL = Recommended Exposure Limit  
SI = International System of Units  
STEL = Short-Term Exposure Limit  
SVOC = Semi-Volatile Organic Compound  
TLV = Threshold Limit Value  
TWA = Time-Weighted Average  
VOC = Volatile Organic Compound  
vPvB = Very Persistent and Very Bioaccumulative, zeer persistent en zeer bioaccumulatief  
WEEL = Workplace Environmental Exposure Limit

#### 16.3 Key literature references and sources for data

None

#### 16.4 Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

The classification of mixtures and applied evaluation method in accordance with regulation (EC) Nr. 1272/2008 [CLP] has been appointed in section 2.1

#### 16.5 Relevant H- and EUH-phrases (Number and full text)

H315 Causes skin irritation.

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H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

**16.6 Training advice**

None

**16.7 Additional information**

None

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The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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