

05.08.2020

**Kit components**

Product code	Description
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<b>450</b>	<b>Twecosolid set</b>
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Components:

448	Twecosolid basis
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449	Twecosolid verharder
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**Safety data sheet  
according to 1907/2006/EC, Article 31**

Printing date 05.08.2020

Version number 38

Revision: 05.08.2020

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

**· 1.1 Product identifier**

· Trade name: **Twecosolid basis**

· Article number: 448

· UFI: SYK2-V09K-400A-FCE6

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

· Sector of Use SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites  
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

SU19 Building and construction work

· Product category PC9a Coatings and paints, thinners, paint removers

· Process category PROC19 Manual activities involving hand contact

PROC10 Roller application or brushing

· Environmental release category ERC5 Use at industrial site leading to inclusion into/onto article

ERC8c Widespread use leading to inclusion into/onto article (indoor)

ERC8f Widespread use leading to inclusion into/onto article (outdoor)

· Article category AC13 Plastic articles

AC11 Wood articles

· Application of the substance / the mixture

See our technical datasheet for application details of this product.  
Clear coating material, Varnish

**· 1.3 Details of the supplier of the safety data sheet**

· Manufacturer/Supplier: De IJssel Coatings BV, Centrumbaan 960, NL 2841 MH Moordrecht

Tel: +31 182 372177, E-mail: info@de-ijssel-coatings.nl

· Further information obtainable from:

Research and Development.


**· 1.4 Emergency telephone number:**

De IJssel Coatings BV, Tel. +31 182 372177, E-mail: safety@de-ijssel-coatings.nl  
Office hours: working days from 08:00 to 17:00 hrs.

**SECTION 2: Hazards identification**

**· 2.1 Classification of the substance or mixture**

· Classification according to Regulation (EC) No 1272/2008

 GHS05 corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

 GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

**· 2.2 Label elements**

· Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

· Hazard pictograms



GHS05 GHS07

· Signal word

Danger

· Hazard-determining components of labelling:

isoforondiamine-isobutyraldimine

· Hazard statements

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

· Precautionary statements

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor.

P362+P364

Take off contaminated clothing and wash it before reuse.

P405

Store locked up.

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

**· 2.3 Other hazards**

· Results of PBT and vPvB assessment

· PBT: Not applicable.

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**Trade name: Tweecosolid basis**

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· vPvB: Not applicable.

**SECTION 3: Composition/information on ingredients****3.2 Chemical characterisation: Mixtures**

· Description: Mixture of substances listed below with nonhazardous additions.

· Dangerous components:

CAS: 54914-37-3 EINECS: 259-393-4 Reg.nr.: 01-2119978283-28	isoforondiamine-isobutyraldimine ⚠ Skin Corr. 1B, H314; ⚠ Eye Irrit. 2, H319; Skin Sens. 1, H317	50 – 100%
CAS: 64741-65-7 EINECS: 265-067-2 Index number: 649-275-00-4 Reg.nr.: 01-2120009436-62	Naphtha (petroleum), heavy alkylate ⚠ Flam. Liq. 3, H226; ⚠ Asp. Tox. 1, H304; ⚠ Aquatic Chronic 2, H411	1 – 2.5%

· Additional information: For the wording of the listed hazard phrases refer to section 16.

**SECTION 4: First aid measures****4.1 Description of first aid measures**

· General information: Immediately remove any clothing soiled by the product.

· After inhalation: Supply fresh air and to be sure call for a doctor.  
In case of unconsciousness place patient stably in side position for transportation.

· After skin contact: Immediately wash with water and soap and rinse thoroughly.

· After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

· After swallowing: Drink plenty of water and provide fresh air. Call for a doctor immediately.

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

No further relevant information available.

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

No further relevant information available.

**SECTION 5: Firefighting measures****5.1 Extinguishing media**· Suitable extinguishing agents: CO<sub>2</sub> or powder. Fight larger fires with alcohol resistant foam.**5.2 Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced.

**5.3 Advice for firefighters**

· Protective equipment: Mouth respiratory protective device.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**Mount respiratory protective device.  
Wear protective equipment. Keep unprotected persons away.**6.2 Environmental precautions:**

Do not allow to enter sewers/ surface or ground water.

**6.3 Methods and material for containment and cleaning up:**Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralising agent.  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.**6.4 Reference to other sections**See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.**SECTION 7: Handling and storage****7.1 Precautions for safe handling**Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.

(Contd. on page 3)

**Trade name: Tweecosolid basis**

(Contd. of page 2)

- Information about fire - and explosion protection: Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- Storage:
- Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep container tightly sealed.
- Recommended storage temperature: 5 - 30 °C
- **7.3 Specific end use(s)** No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

- Additional information about design of technical facilities: No further data; see item 7.
- **8.1 Control parameters**
- Ingredients with limit values that require monitoring at the workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· DNEL (Derived No Effect Level) for workers		
<b>54914-37-3 isoforondiamine-isobutyraldimine</b>		
Inhalative	Long-term - systemic effects, worker	150 mg/m <sup>3</sup> (Worker)
· PNEC (Predicted No Effect Concentration) values		
<b>54914-37-3 isoforondiamine-isobutyraldimine</b>		
Aquatic compartment - freshwater	0.023 mg/l (Freshwater)	
Aquatic compartment - marine water	0.0023 mg/l (Marine water)	
Aquatic compartment - sediment in freshwater	5.78 mg/kg sed dw (Sediment freshwater)	
Aquatic compartment - sediment in marine water	0.578 mg/kg sed dw (Sediment marine water)	
Terrestrial compartment - soil	0.00502 mg/kg dw (Soil)	
Sewage treatment plant	3.18 mg/l (stp)	

- Additional information: The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- Personal protective equipment:
- General protective and hygienic measures:
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing
  - Wash hands before breaks and at the end of work.
  - Avoid contact with the eyes.
  - Avoid contact with the eyes and skin.
- Respiratory protection: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- Protection of hands:
  - Protective gloves
  - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- Material of gloves: Nitrile rubber, NBR
  - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
  - Recommended thickness of the material: ≥ 0.3 mm
- Penetration time of glove material: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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**Trade name: Tweecosolid basis**

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For the mixture of chemicals mentioned below the penetration time has to be at least 480 minutes (Permeation according to EN 16523-1:2015: Level 6).

- For the permanent contact gloves made of the following materials are suitable: Nitrile rubber, NBR
- As protection from splashes gloves made of the following materials are suitable: Nitrile rubber, NBR
- Not suitable are gloves made of the following materials: Leather gloves  
Strong material gloves
- Eye protection: Tightly sealed goggles

**SECTION 9: Physical and chemical properties**

<b>· 9.1 Information on basic physical and chemical properties</b>	
· General Information	
· Appearance:	
Form:	Fluid
Colour:	According to product specification
· Odour:	Characteristic
· Odour threshold:	Not determined.
· pH-value at 20 °C:	7
· Change in condition	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	200 °C
· Flash point:	77 °C (Pensky Martens, ASTM D93)
· Flammability (solid, gas):	Not applicable.
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapour pressure:	Not determined.
· Density at 20 °C:	0.93 g/cm <sup>3</sup> (DIN 51757, ASTM D 1298)
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity:	
Dynamic at 20 °C:	500 mPas (Brookfield, ASTM D1544)
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	0.8 %
VOC (2004/42/EC):	0.83 %
Solids content:	96.6 %
· 9.2 Other information	No further relevant information available.

**SECTION 10: Stability and reactivity**

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

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- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- Acute toxicity Based on available data, the classification criteria are not met.
- LD/LC50 values relevant for classification:

Components	Type	Value	Species
<b>54914-37-3 isoforondiamine-isobutyraldimine</b>			
Oral	LD50	4,150 mg/kg	(Rat)
Dermal	LD50	5,000 mg/kg	(Rat)
<b>64741-65-7 Naphtha (petroleum), heavy alkylate</b>			
Oral	LD50	> 6,000 mg/kg	(Rat)
Dermal	LD50	> 3,000 mg/kg	(Rabbit)

- Primary irritant effect:
- Skin corrosion/irritation Causes severe skin burns and eye damage.
- Serious eye damage/irritation Causes serious eye damage.
- Respiratory or skin sensitisation May cause an allergic skin reaction.
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
- Germ cell mutagenicity Based on available data, the classification criteria are not met.
- Carcinogenicity Based on available data, the classification criteria are not met.
- Reproductive toxicity Based on available data, the classification criteria are not met.
- STOT-single exposure Based on available data, the classification criteria are not met.
- STOT-repeated exposure Based on available data, the classification criteria are not met.
- Aspiration hazard Based on available data, the classification criteria are not met.

### SECTION 12: Ecological information

- **12.1 Toxicity**
- Aquatic toxicity: No further relevant information available.

Type of test	Effective concentration	Method	Assessment
<b>ATE (Acute Toxicity Estimates)</b>			
Inhalative	LC50/4 h	> 520 mg/l	(Rat)
<b>64741-65-7 Naphtha (petroleum), heavy alkylate</b>			
Inhalative	LC50/4 h	> 7.8 mg/l	(Rat)

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- Additional ecological information:
- General notes: Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.  
Must not reach sewage water or drainage ditch undiluted or unneutralised.
- **12.5 Results of PBT and vPvB assessment**
- PBT: Not applicable.
- vPvB: Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- Recommendation Must not be disposed together with household garbage. Do not allow product to reach sewage system.

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· European waste catalogue	
08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 01 00	wastes from MFSU and removal of paint and varnish
08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances
HP8	Corrosive
HP13	Sensitising

· Uncleaned packaging:

· Recommendation:

Disposal must be made according to official regulations.

**SECTION 14: Transport information**

· <b>14.1 UN-Number</b>	
· ADR/RID/ADN, IMDG, IATA	UN3066
· <b>14.2 UN proper shipping name</b>	
· ADR/RID/ADN	3066 PAINT
· IMDG, IATA	PAINT
· <b>14.3 Transport hazard class(es)</b>	
· ADR/RID/ADN	
· Class	8 (C9) Corrosive substances.
· Label	8
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· IMDG, IATA	
· Class	8 Corrosive substances.
· Label	8
· <b>14.4 Packing group</b>	
· ADR/RID/ADN, IMDG, IATA	III
· <b>14.5 Environmental hazards:</b>	
· Marine pollutant:	No
· <b>14.6 Special precautions for user</b>	
· Hazard identification number (Kemler code):	Warning: Corrosive substances. 80
· EMS Number:	F-A,S-B
· Stowage Category	A
· Stowage Code	SW2 Clear of living quarters.
· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>	
Not applicable.	
· Transport/Additional information:	
-----	
· ADR/RID/ADN	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· Transport category	3
· Tunnel restriction code	E
-----	
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 3066 PAINT, 8, III

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

· Directive 2012/18/EU

· Named dangerous substances - ANNEX I

None of the ingredients is listed.

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- REGULATION (EC) No 1907/2006  
ANNEX XVII
- Conditions of restriction: 3

· DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II

None of the ingredients is listed.

- National regulations:
- Technical instructions (air):

Class	Share in %
NK	0.8

- **15.2 Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Relevant phrases
  - H226 Flammable liquid and vapour.
  - H304 May be fatal if swallowed and enters airways.
  - H314 Causes severe skin burns and eye damage.
  - H317 May cause an allergic skin reaction.
  - H319 Causes serious eye irritation.
  - H411 Toxic to aquatic life with long lasting effects.

- Classification according to Regulation (EC) No 1272/2008

The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

Skin corrosion/irritation Serious eye damage/eye irritation Skin sensitisation	The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.
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- Department issuing SDS:
- Contact:
- Abbreviations and acronyms:

Research and Development  
 Herman van den Berg, tel: +31 182 372177, e-mail: [safety@de-ijsel-coatings.nl](mailto:safety@de-ijsel-coatings.nl)  
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
 ICAO: International Civil Aviation Organisation  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 VOC: Volatile Organic Compounds (USA, EU)  
 DNEL: Derived No-Effect Level (REACH)  
 PNEC: Predicted No-Effect Concentration (REACH)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative  
 Flam. Liq. 3: Flammable liquids – Category 3  
 Skin Corr. 1B: Skin corrosion/irritation – Category 1B  
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1  
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2  
 Skin Sens. 1: Skin sensitisation – Category 1  
 Asp. Tox. 1: Aspiration hazard – Category 1  
 Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2  
 Literature data and/or investigation reports are available through the manufacturer.

- Sources:
- \* Data compared to the previous version altered.



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

**1.1 Product identifier**

- Trade name: **Tweecosolid verharder**
- Article number: 449
- UFI: ACK4-R0TE-4005-EF2A

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

- Sector of Use
  - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
  - SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
  - SU19 Building and construction work
- Product category PC9a Coatings and paints, thinners, paint removers
- Process category
  - PROC19 Manual activities involving hand contact
  - PROC10 Roller application or brushing
- Environmental release category
  - ERC5 Use at industrial site leading to inclusion into/onto article
  - ERC8c Widespread use leading to inclusion into/onto article (indoor)
  - ERC8f Widespread use leading to inclusion into/onto article (outdoor)
- Article category
  - AC13 Plastic articles
  - AC11 Wood articles
- Application of the substance / the mixture
  - See our technical datasheet for application details of this product.
  - Isocyanate hardener for polyurethanes

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

- Manufacturer/Supplier: De IJssel Coatings BV, Centrumbaan 960, NL 2841 MH Moordrecht  
Tel: +31 182 372177, E-mail: info@de-ijssel-coatings.nl

- Further information obtainable from: Research and Development.

**1.4 Emergency telephone number:**

De IJssel Coatings BV, Tel. +31 182 372177, E-mail: safety@de-ijssel-coatings.nl  
Office hours: working days from 08:00 to 17:00 hrs.

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

- Classification according to Regulation (EC) No 1272/2008

 GHS07

Acute Tox. 4 H332 Harmful if inhaled.  
Skin Sens. 1 H317 May cause an allergic skin reaction.  
STOT SE 3 H335 May cause respiratory irritation.

**2.2 Label elements**

- Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the CLP regulation.

- Hazard pictograms

 GHS07

- Signal word Warning

- Hazard-determining components of labelling:

Hexamethyleen-1,6-diisocyanaat homopolymeer  
hexamethylene-di-isocyanate

- Hazard statements

H332 Harmful if inhaled.  
H317 May cause an allergic skin reaction.  
H335 May cause respiratory irritation.

- Precautionary statements

P261 Avoid breathing mist/vapours/spray.  
P280 Wear protective gloves.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312 Call a POISON CENTER/doctor if you feel unwell.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- Additional information:

EUH204 Contains isocyanates. May produce an allergic reaction.

**2.3 Other hazards**

- Results of PBT and vPvB assessment

- PBT: Not applicable.

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· vPvB: Not applicable.

**SECTION 3: Composition/information on ingredients****3.2 Chemical characterisation: Mixtures**

· Description: Mixture of substances listed below with nonhazardous additions.

· Dangerous components:

CAS: 28182-81-2 NLP: 500-060-2 Reg.nr.: 01-2119488934-20	Hexamethyleen-1,6-diisocynaat homopolymeer ⚠ Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	50 – 100%
CAS: 822-06-0 EINECS: 212-485-8 Index number: 615-011-00-1 Reg.nr.: 01-2119457571-37	hexamethylene-di-isocyanate ⚠ Acute Tox. 3, H311; Acute Tox. 2, H330; ⚠ Resp. Sens. 1, H334; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335 Specific concentration limits: Resp. Sens. 1; H334: C ≥ 0.5 % Skin Sens. 1; H317: C ≥ 0.5 %	0.1 – 0.5%

· Additional information: For the wording of the listed hazard phrases refer to section 16.

**SECTION 4: First aid measures****4.1 Description of first aid measures**

- General information: Immediately remove any clothing soiled by the product. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation: Supply fresh air and to be sure call for a doctor. In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: If symptoms persist consult doctor.

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

No further relevant information available.

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

No further relevant information available.

**SECTION 5: Firefighting measures****5.1 Extinguishing media**

· Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

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

No further relevant information available.

**5.3 Advice for firefighters**

· Protective equipment: Mouth respiratory protective device.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Not required.

**6.2 Environmental precautions:**

Do not allow to enter sewers/ surface or ground water.

**6.3 Methods and material for containment and cleaning up:**Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.**6.4 Reference to other sections**See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

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**Trade name: Tweecosolid verharder**

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**SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling**
  - Ensure good ventilation/exhaustion at the workplace.
  - Prevent formation of aerosols.
- Information about fire - and explosion protection:
  - No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- Storage:
  - Requirements to be met by storerooms and receptacles: No special requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Keep container tightly sealed.
  - Recommended storage temperature: 5 - 30 °C
- **7.3 Specific end use(s)**
  - No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

- Additional information about design of technical facilities:
  - No further data; see item 7.
- **8.1 Control parameters**
- Ingredients with limit values that require monitoring at the workplace:
  - The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· DNEL (Derived No Effect Level) for workers		
<b>28182-81-2 Hexamethyleen-1,6-diisocynaat homopolymeer</b>		
Inhalative	Acute - local effects, worker	1 mg/m <sup>3</sup> (Worker)
	Long-term - local effects, worker	0.5 mg/m <sup>3</sup> (Worker)
<b>822-06-0 hexamethylene-di-isocyanate</b>		
Inhalative	Acute - systemic effects, worker	0.07 mg/m <sup>3</sup> (Worker)
	Long-term - systemic effects, worker	0.035 mg/m <sup>3</sup> (Worker)
	Long-term - local effects, worker	0.035 mg/m <sup>3</sup> (Worker)
· PNEC (Predicted No Effect Concentration) values		
<b>28182-81-2 Hexamethyleen-1,6-diisocynaat homopolymeer</b>		
Aquatic compartment - freshwater		0.199 mg/l (Freshwater)
Aquatic compartment - marine water		0.0199 mg/l (Marine water)
Aquatic compartment - sediment in freshwater		44,551 mg/kg sed dw (Sediment freshwater)
Aquatic compartment - sediment in marine water		4,455 mg/kg sed dw (Sediment marine water)
Terrestrial compartment - soil		8,884 mg/kg dw (Soil)
Sewage treatment plant		100 mg/l (stp)
<b>822-06-0 hexamethylene-di-isocyanate</b>		
Aquatic compartment - freshwater		0.0774 mg/l (Freshwater)
Aquatic compartment - marine water		0.00774 mg/l (Marine water)
Aquatic compartment - sediment in freshwater		0.01334 mg/kg sed dw (Sediment freshwater)
Aquatic compartment - sediment in marine water		0.001334 mg/kg sed dw (Sediment marine water)
Terrestrial compartment - soil		0.0026 mg/kg dw (Soil)
Sewage treatment plant		8.42 mg/l (stp)

- Additional information:
  - The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- Personal protective equipment:
- General protective and hygienic measures:
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing
  - Wash hands before breaks and at the end of work.

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- Respiratory protection: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- Protection of hands: Protective gloves  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- Material of gloves: Nitrile rubber, NBR  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.  
Recommended thickness of the material:  $\geq 0.3$  mm
- Penetration time of glove material: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.  
For the mixture of chemicals mentioned below the penetration time has to be at least 480 minutes (Permeation according to EN 16523-1:2015: Level 6).
- For the permanent contact gloves made of the following materials are suitable: Nitrile rubber, NBR
- As protection from splashes gloves made of the following materials are suitable: Nitrile rubber, NBR
- Not suitable are gloves made of the following materials: Leather gloves  
Strong material gloves
- Eye protection: Goggles recommended during refilling

**SECTION 9: Physical and chemical properties**

<b>· 9.1 Information on basic physical and chemical properties</b>	
· General Information	
· Appearance:	
Form:	Fluid
Colour:	Colourless
· Odour:	Characteristic
· Odour threshold:	Not determined.
· pH-value at 20 °C:	7
· Change in condition	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	190 °C
· Flash point:	203 °C (Pensky Martens, ASTM D93)
· Flammability (solid, gas):	Not applicable.
· Ignition temperature:	431 °C
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	2.8 Vol %
Upper:	12.7 Vol %
· Vapour pressure at 20 °C:	3 hPa
· Density at 20 °C:	1.142 g/cm <sup>3</sup> (DIN 51757, ASTM D 1298)
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.

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· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity: Dynamic at 20 °C:	700 mPas (Brookfield, ASTM D1544)
Kinematic:	Not determined.
· Solvent content: VOC (2004/42/EC):	0.00 %
· Solids content:	89.7 %
· <b>9.2 Other information</b>	No further relevant information available.

**SECTION 10: Stability and reactivity**

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

**SECTION 11: Toxicological information**

- **11.1 Information on toxicological effects**
- Acute toxicity Harmful if inhaled.
- LD/LC50 values relevant for classification:

Components	Type	Value	Species
<b>ATE (Acute Toxicity Estimates)</b>			
Dermal	LD50	18,642 mg/kg	

**822-06-0 hexamethylene-di-isocyanate**

Oral	LD50	738 mg/kg (Rat)
Dermal	LD50	593 mg/kg (Rat)

- Primary irritant effect:
- Skin corrosion/irritation Based on available data, the classification criteria are not met.
- Serious eye damage/irritation Based on available data, the classification criteria are not met.
- Respiratory or skin sensitisation May cause an allergic skin reaction.
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
- Germ cell mutagenicity Based on available data, the classification criteria are not met.
- Carcinogenicity Based on available data, the classification criteria are not met.
- Reproductive toxicity Based on available data, the classification criteria are not met.
- STOT-single exposure May cause respiratory irritation.
- STOT-repeated exposure Based on available data, the classification criteria are not met.
- Aspiration hazard Based on available data, the classification criteria are not met.

**SECTION 12: Ecological information**

- **12.1 Toxicity**
- Aquatic toxicity: No further relevant information available.

Type of test	Effective concentration	Method	Assessment
<b>ATE (Acute Toxicity Estimates)</b>			
Inhalative	LC50/4 h	11.6 mg/l	

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.

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- Additional ecological information:
- General notes: Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- PBT: Not applicable.
- vPvB: Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- Recommendation Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· European waste catalogue	
08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 01 00	wastes from MFSU and removal of paint and varnish
08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP13	Sensitising

- Uncleaned packaging:
- Recommendation: Disposal must be made according to official regulations.

**SECTION 14: Transport information**

· <b>14.1 UN-Number</b>	Void
· ADR/RID/ADN, ADN, IMDG, IATA	
· <b>14.2 UN proper shipping name</b>	Void
· ADR/RID/ADN, ADN, IMDG, IATA	
· <b>14.3 Transport hazard class(es)</b>	Void
· ADR/RID/ADN, ADN, IMDG, IATA	
· Class	
· <b>14.4 Packing group</b>	Void
· ADR/RID/ADN, ADN, IMDG, IATA	
· <b>14.5 Environmental hazards:</b>	No
· Marine pollutant:	
· <b>14.6 Special precautions for user</b>	Not applicable.
· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
· UN "Model Regulation":	Void

**SECTION 15: Regulatory information**

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

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

· DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II
None of the ingredients is listed.

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- National regulations:
- Technical instructions (air):

Class	Share in %
I	0.2

- **15.2 Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Relevant phrases
  - H302 Harmful if swallowed.
  - H311 Toxic in contact with skin.
  - H315 Causes skin irritation.
  - H317 May cause an allergic skin reaction.
  - H319 Causes serious eye irritation.
  - H330 Fatal if inhaled.
  - H332 Harmful if inhaled.
  - H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - H335 May cause respiratory irritation.
- Classification according to Regulation (EC) No 1272/2008
  - The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

Acute toxicity - inhalation Skin sensitisation Specific target organ toxicity (single exposure)	The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.
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- Department issuing SDS: Research and Development
- Contact: Herman van den Berg, tel: +31 182 372177, e-mail: [safety@de-ijsse-coatings.nl](mailto:safety@de-ijsse-coatings.nl)
- Abbreviations and acronyms:
  - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
  - ICAO: International Civil Aviation Organisation
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - DNEL: Derived No-Effect Level (REACH)
  - PNEC: Predicted No-Effect Concentration (REACH)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Acute Tox. 3: Acute toxicity - dermal – Category 3
  - Acute Tox. 2: Acute toxicity - inhalation – Category 2
  - Acute Tox. 4: Acute toxicity - inhalation – Category 4
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  - Resp. Sens. 1: Respiratory sensitisation – Category 1
  - Skin Sens. 1: Skin sensitisation – Category 1
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- Sources: Literature data and/or investigation reports are available through the manufacturer.
- \* Data compared to the previous version altered.