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according to 1907/2006/EC, Article 31

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

· **1.1 Product identifier**

· **Trade name: Robust™ Topp - Matt, Komp. B**
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
· **Application of the substance / the mixture** 2-component matt-finish final seal

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Steinhardt AS
Postboks 8627 Ranheim
7052 Trondheim
Norway

· **Further information obtainable from:**
Steinhardt AS
Postboks 8627 Ranheim
7052 Trondheim
Norway
+47 72607060. www.robustnorge.no
· **1.4 Emergency telephone number:**
(+47) 22591300
https://helsenorge.no/Giftinformasjon

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**

GHS06 skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.

GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335 May cause respiratory irritation.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· **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**

GHS06

· **Signal word** Danger

· **Hazard-determining components of labelling:**
Hydrophiles, aliphatisches Polyisocyanat
hexamethylene diisocyanate
· **Hazard statements**
H331 Toxic if inhaled.

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

· **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P273 Avoid release to the environment.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**
· **Description:** Aliphatic polyisocyanate.

· **Dangerous components:**

CAS: 160994-68-3	Hydrophiles, aliphatisches Polyisocyanat Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335; Aquatic Chronic 3, H412	50 - 100%
CAS: 822-06-0 EINECS: 212-485-8	hexamethylene diisocyanate Acute Tox. 1, 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	< 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**
· **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. If symptoms persist, 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:** CO2, foam, dry powder, water spray for large fires.
· **5.2 Special hazards arising from the substance or mixture**
In case of fire: Carbon monoxide, nitrogen oxide, isocyanate and traces of hydrogen cyanide.

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· **5.3 Advice for firefighters**
· **Protective equipment:**
During fire fighting respirator with independent air supply.
Contaminated water can not penetrate into the soil, groundwater and surface waters.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate / vent care. Remove persons not involved.
· **6.2 Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
· **6.3 Methods and material for containment and cleaning up:**
Mechanical, rest in touch with wet, absorbent material (sawdust, chemical binder,
Sand) cover. Record after 1 hour to waste container and do not cover (CO2 evolution). Keep damp in a safe ventilated area for several days. further disposal see chapter 13.
· **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 adequate / vent care. Contact with skin and eyes.
· **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:**
Keep container tightly closed in a cool, well-ventilated place.
· **Information about storage in one common storage facility:** Store separate from eatables
· **Further information about storage conditions:**
Store in a dry place.
Protect from frost.
· **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:**	
822-06-0 hexamethylene diisocyanate (< 2.5%)	
WEL	Short-term value: 0.07 mg/m³ Long-term value: 0.02 mg/m³ Sen; as -NCO

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
· **Respiratory protection:** Not required if good ventilation
· **Protection of hands:**
Protective gloves

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**
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.
Suitable protective gloves made from rubber, nitrile rubber, butyl rubber.

· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** *Goggles recommended during refilling*

· **Body protection:** *Protective clothing*

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	*Fluid*
Colour:	*colorless*
· **Odour:**	*weak, charakteristic*
· **Change in condition**	
Melting point/Melting range:	*Undetermined.*
Boiling point/Boiling range:	*300 °C*
· **Flash point:**	*184 °C*
· **Self-igniting:**	*Product is not selfigniting.*
· **Danger of explosion:**	*Product does not present an explosion hazard.*
· **Density at 20 °C:**	*1.15 g/cm³*
· **Solubility in / Miscibility with water:**	*Not miscible or difficult to mix.*
· **Viscosity:**	
Dynamic at 20 °C:	*1400 mPas*
· **9.2 Other information**	*Reacts with water.*

SECTION 10: Stability and reactivity

· **10.1 Reactivity** *No further relevant information available.*

· **10.3 Possibility of hazardous reactions**
Exothermic reactions with amines and alcohols with water gradual evolution of CO 2, in closed containers, pressure build-up and bursting.

· **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**
Toxic if inhaled.

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· ***LD/LC50 values relevant for classification:***

822-06-0 hexamethylene diisocyanate

Oral	*LD50*	*746 mg/kg (rat)*
Dermal	*LD50*	*599 mg/kg (rab)*

· ***Specific symptoms in biological assay:***
Specific symptoms in animal studies:
Below us, the available toxicological data on components.
Acute toxicity, by oral route:
Aliphatic polyisocyanate rat LD50:> 2,000 mg / kg
Hexamethylene-1 ,6-diisocyanate homopolymer rat LD50:> 5,000 mg / kg
Acute toxicity, by inhalation:
Hexamethylene-1 ,6-diisocyanate homopolymer rat LC50: 158 mg / l, 4 h
Method: OECD Test Guideline 403
Hexamethylene-1 ,6-diisocyanate LC50 rat: 0.124 mg / l, 4 h
Concentration of the saturated vapor of 1,6-HDI at 25 °C: 0.095 mg / l
Primary skin irritation:
Aliphatic polyisocyanate rabbit Result: slightly irritating
Hexamethylene-1 ,6-diisocyanate homopolymer rabbit Result: slightly irritating
Method: OECD Test Guideline 404
Hexamethylene-1 ,6-diisocyanate rabbit Result: strong irritant
Primary eye irritation:
Aliphatic polyisocyanate rabbit Result: slightly irritating
Hexamethylene-1 ,6-diisocyanate homopolymer rabbit Result: slightly irritating
Method: OECD Test Guideline 405
Hexamethylene-1 ,6-diisocyanate rabbit Result: strong irritant
· ***Primary irritant effect:***
· ***Skin corrosion/irritation*** *slightly irritating*
· ***Serious eye damage/irritation*** *slightly irritating*
· ***Respiratory or skin sensitisation***
May cause an allergic skin reaction.
· ***Other information (about experimental toxicology):***
sensitization:
aliphatic polyisocyanate
Skin sensitization of Magnusson / Kligman (maximization test): guinea pig
Result: positive
Method: OECD Test Guideline 406
Hexamethylene-1 ,6-diisocyanate homopolymer
Skin sensitization of Magnusson / Kligman (maximization test): guinea pig
Result: The product works on the guinea pig sensitization.
Method: OECD Test Guideline 406
No pulmonary sensitization in animal studies.
Both after intradermal as well as with inhalational induction was based polyisocyanate
Hexamethylene diisocyanate in guinea pigs not lungensensibilisierendes potential
be determined.
Hexamethylene-1 ,6-diisocyanate
Skin sensitization of Magnusson / Kligman (maximization test): guinea pig
Result: positive
Method: OECD Test Guideline 406
Genotoxicity in vitro:
Aliphatic polyisocyanate Ames test Result: negative
Method: OECD Test Guideline 471
Toxicological studies of a comparable product.
Hexamethylene-1 ,6-diisocyanate homopolymer Ames test Result: negative
Method: OECD Test Guideline 471
Hexamethylene-1 ,6-diisocyanate
Salmonella / microsome test (Ames test): Result: negative

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· ***Repeated dose toxicity***
Over-exposure is a risk of concentration-dependent irritation of eyes, nose, throat and respiratory tract. Delayed appearance of symptoms and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. With hypersensitive people, reactions may be triggered at low isocyanate, also below the OEL. By prolonged contact with skin tanning and irritating effects are possible. Animal studies and other studies indicate that skin contact could play with diisocyanates in isocyanate sensitization and respiratory reactions involved.
· ***CMR effects (carcinogenity, 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.*
· ***12.2 Persistence and degradability*** *No further relevant information available.*
· ***Other information:***
Toxicity to fish:
aliphatic polyisocyanate
LC50 28.3 mg / l
Test species: Danio rerio (zebrafish) Duration of test: 96 h
Method: OECD Test Guideline 203
Hexamethylene-1 ,6-diisocyanate
LC0> 82.8 mg / l
Test species: Danio rerio (zebrafish) Duration of test: 96 h
Method: OECD Test Guideline 203
Sample preparation because of the reactivity of the substance with water:
Ultra turrax: 60 sec 8000 rpm, 24 magnetic stirrer; filtration.
Acute daphnia:
aliphatic polyisocyanate
EC50> 100 mg / l
Test species: Daphnia magna (water flea) Duration of test: 48 h
Method: OECD Test Guideline 202
Sample preparation because of the reactivity of the substance with water:
Ultra turrax: 60 sec 8000 rpm, 24 magnetic stirrer; filtration.
Hexamethylene-1 ,6-diisocyanate
EC0> 89.1 mg / l
Test species: Daphnia magna (water flea) Duration of test: 48 h
Sample preparation because of the reactivity of the substance with water:
Ultra turrax: 60 sec 8000 rpm, 24 magnetic stirrer; filtration.
Acute bacterial toxicity:
aliphatic polyisocyanate
EC50> 10,000 mg / l
Method: OECD Test Guideline 209
Hexamethylene-1 ,6-diisocyanate
EC50 842 mg / l
Tested on: Activated Sludge Test time: 3 hours
Method: OECD Guideline for Testing of Chemicals, No.209
Acute Toxicity to algae:
aliphatic polyisocyanate
IC50> 100 mg / l
Tested on: Scenedesmus subspicatus Duration of test: 72 h
Method: OECD Test Guideline 201

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· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **Other information:**
The resin reacts with water at the interface with the formation of carbon dioxide to form a solid, high-melting and insoluble product (polyurea). This reaction is accelerated by surfactants (eg detergents) or water-soluble solvents. Previous experience shows that polyurea is inert and non-degradable.
· **Ecotoxical effects:**
· **Remark:** Harmful to fish
· **Additional ecological information:**
· **General notes:**
Harmful to aquatic organisms
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
· **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 01 11*	waste paint and varnish containing organic solvents or other dangerous substances

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

SECTION 14: Transport information

· **14.1 UN-Number**	
· **ADR, ADN, IMDG, IATA**	Void
· **14.2 UN proper shipping name**	
· **ADR**	Void
· **ADN, IMDG, IATA**	Void
· **14.3 Transport hazard class(es)**	
· **ADR, ADN, IMDG, IATA**	
· **Class**	Void
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	Void
· **14.5 Environmental hazards:**	Not applicable.
· **14.6 Special precautions for user**	Not applicable.
· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	Void

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

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· **National regulations:**

· **Technical instructions (air):**

Class	Share in %
I	0.1

· **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

· **Other regulations, limitations and prohibitive regulations**
Das Produkt unterliegt RL 2004/42/EG.
EU-Grenzwert für den VOC-Gehalt dieses Produktes ist im gebrauchsfertigen Zustand: 140 g/l (2010).
Das Produkt enthält im gebrauchsfertigen Zustand: < 10 g/l VOC.
· **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.
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.
H412 Harmful to aquatic life with long lasting effects.

· **Abbreviations and acronyms:**
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 1: Acute toxicity – Category 1
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – 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
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3