

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 28.08.2018

Version number 2

Revision: 28.08.2018

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

- **1.1 Product identifier**
- **Trade name: 311 TopCoat Härter**
- **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** Hardening agent/ Curing agent
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
FORBO Eurocol Deutschland GmbH
August-Roebing-Str. 2
D-99091 Erfurt
Tel.: +49 (0)361 73041-0
Fax: +49 (0)361 73041-92
Website: <http://www.forbo-bonding.de>
- **Further information obtainable from:**
Laboratory
Elisabeth Reinhardt
Elisabeth.Reinhardt@forbo.com
- **1.4 Emergency telephone number:** GGIZ +49-361-730730 (for Germany)

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
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:**
Hexamethylene diisocyanate oligomers
Hydrophiles, aliphatisches Polyisocyanat
- **Hazard statements**
H332 Harmful if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of water/und Seife
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

(Contd. on page 2)

GB

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 28.08.2018

Version number 2

Revision: 28.08.2018

Trade name: 311 TopCoat Härter

(Contd. of page 1)

- **Additional information:**
EUH204 Contains isocyanates. May produce an allergic reaction.
- **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:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 28182-81-2	Hexamethylene diisocyanate oligomers	>50-100%
NLP: 500-060-2	⚠ Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	
CAS: 666723-27-9	Hydrophiles, aliphatisches Polyisocyanat	≥10-25%
	⚠ Acute Tox. 3, H331; ⚠ Skin Sens. 1, H317; STOT SE 3, H335; Aquatic Chronic 3, H412	

- **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:**
Involve doctor immediately.
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. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Do not induce vomiting; call for medical help immediately.
A person vomiting while laying on their back should be turned onto their side.
- **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, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 28.08.2018

Version number 2

Revision: 28.08.2018

Trade name: 311 TopCoat Härter

(Contd. of page 2)

- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Keep away from ignition sources.
- **6.2 Environmental precautions:**
Do not allow to penetrate the ground/soil.
Dilute with plenty of water.
- **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 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**
Use only in well ventilated areas.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** Vapors may form an explosive mixture with air
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Recommended storage temperature:** 15 °C - 25 °C
- **Storage class:** 12
- **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.
- **Additional information:** The lists valid during the making were used as basis.

(Contd. on page 4)

GB

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 28.08.2018

Version number 2

Revision: 28.08.2018

Trade name: 311 TopCoat Härter

(Contd. of page 3)

- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
- **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.

- **Recommended filter device for short term use:** Combination filter A-P2
- **Protection of hands:**



Protective gloves

- **Material of gloves**
Butyl rubber, BR
Recommended thickness of the material: ≥ 1.5 mm
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 1.5 mm
- **Penetration time of glove material** > 480 min.
- **Eye protection:** Goggles recommended during refilling
- **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:	Fluid
Colour:	Colourless
Odour:	Odourless

- **pH-value:** Not applicable.

- **Change in condition**

Melting point/freezing point: Undetermined.
Initial boiling point and boiling range: 445 °C

- **Flash point:** Undetermined.

- **Flammability (solid, gas):** Not applicable.

- **Ignition temperature:** Undetermined.

- **Decomposition temperature:** 181 °C

- **Auto-ignition temperature:** Product is not selfigniting.

- **Explosive properties:** Product does not present an explosion hazard.

(Contd. on page 5)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 28.08.2018

Version number 2

Revision: 28.08.2018

Trade name: 311 TopCoat Härter

(Contd. of page 4)

· Vapour pressure at 20 °C:	5 hPa
· Density at 20 °C:	1.15 g/cm ³
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient: n-octanol/water:	Undetermined.
· Viscosity: Dynamic at 20 °C:	570-730 mPas
· Solvent content: VOC (CE)	0.00 %
· 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.
- **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:
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ATE (Acute Toxicity Estimates)

Inhalative	LC50/4h	10.3 mg/l
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28182-81-2 Hexamethylene diisocyanate oligomers
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Oral	LD50	>5,000 mg/kg (rat)
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Inhalative	LC50/4h	11 mg/l (ATE)
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666723-27-9 Hydrophiles, aliphatisches Polyisocyanat

Inhalative	LC50/4h	3 mg/l (ATE)
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- **Primary irritant effect:**

· Skin corrosion/irritation

28182-81-2 Hexamethylene diisocyanate oligomers
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Sensitisation	Skin Sensitisation	(Guinea Pig)
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not tested

- **Serious eye damage/irritation** not tested

- **Respiratory or skin sensitisation**

May cause an allergic skin reaction.

(Contd. on page 6)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 28.08.2018

Version number 2

Revision: 28.08.2018

Trade name: 311 TopCoat Härter

(Contd. of page 5)

- **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.
- **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:**
Do not allow product to reach ground water, water course or sewage system.
Water hazard class 1 (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**
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Recommendation** Do not allow product to reach sewage system.

· European waste catalogue
08 05 01* waste isocyanates

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

SECTION 14: Transport information

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|--|------|
| · 14.1 UN-Number | Void |
| · ADR, ADN, IMDG, IATA | Void |
| · 14.2 UN proper shipping name | Void |
| · ADR, ADN, IMDG, IATA | Void |
| · 14.3 Transport hazard class(es) | Void |
| · ADR, ADN, IMDG, IATA | Void |
| · Class | Void |

(Contd. on page 7)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 28.08.2018

Version number 2

Revision: 28.08.2018

Trade name: 311 TopCoat Härter

(Contd. of page 6)

· 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.
· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	Void

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Named dangerous substances - ANNEX I None of the ingredients is listed.
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
- National regulations: Water hazard class 1 (Self-assessment): slightly hazardous for water.
- Information about limitation of use:
Employment restrictions concerning juveniles must be observed. (94/33/EC)
Employment restrictions concerning pregnant and lactating women must be observed. (92/85/EC)
- VOC (CE) 0.0 g/l
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

- Relevant phrases
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.
- Department issuing SDS: Laboratory
- Contact:
Dr. Amina Chnirheb
Amina.Chnirheb@forbo.com
- Abbreviations and acronyms:
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)
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 – Category 3

(Contd. on page 8)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 28.08.2018

Version number 2

Revision: 28.08.2018

Trade name: 311 TopCoat Härter

(Contd. of page 7)

*Acute Tox. 4: Acute toxicity – Category 4**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**· * Data compared to the previous version altered.*

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