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

· 1.1 Product identifier

· Trade name <u>RENITHERM TOP COAT, Komp. B</u> Artikel-Nr.: RE-TC.19001.B

· Article number: 280400

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

· Life cycle stages

IS Use at industrial Sites

PW Widespread use by professional workers

- · Product category PC9a Coatings and paints, thinners, paint removers
- · Application of the substance / the mixture Hardening agent/ Curing agent
- · Uses advised against C Consumer use

· 1.3 Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

AUDAX-Keck GmbH

Weiherstr. 10 75365 Calw / Germany

 $INFO:__GL/R\&D$

SDB-/-MSDS, e-mail:

Fax: +49.7051.1625.50

Tel.: +49.7051.1625.0

Fax: +49.7051.1625.50

Tel.: +49.7051.1625.0

info@audax.de

· 1.4 Emergency telephone number:

During normal opening times:

Responsible Department: GL/R&D

Tel.: 004970511625 0 Fax: 004970511625 50

SECTION 2: Hazards identification

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



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



Acute Tox. 4 H332 Harmful if inhaled.

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

STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

- · 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





GHS02 GHS07

- · Signal word Warning
- · Hazard-determining components of labelling: aliphatic polyisocyanate, HDI-based

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n-butyl acetate

hexamethylene diisocyanate

· Hazard statements

H226 Flammable liquid and vapour.

H332 Harmful if inhaled.

H317 May cause an allergic skin reaction.

H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

· Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smoking.

P241 Use explosion-proof [electrical/ventilating/lighting] equipment.

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

water [or shower].

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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 Product is not explosive. However, formation of explosive steam/air mixtures is possible.
- · 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 consisting of the following components with harmless additives.

· Dangerous components:		
	aliphatic polyisocyanate, HDI-based Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	70-100%
	n-butyl acetate Flam. Liq. 3, H226; STOT SE 3, H336	20-<30%
EINECS: 212-485-8 Index number: 615-011-00-1	hexamethylene diisocyanate Acute Tox. 2, H330; Resp. Sens. 1, H334; Nacute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	0.1-<0.5%

· SVHC

Substances of very high concern (SVHC) according to REACH, Article 57

- NONE
- · 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

Personal protection for the First Aider.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Do not leave affected persons unsupervised.

Take affected persons out of danger area and instruct to lie down.

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· After inhalation

Supply fresh air and call for doctor for safety reasons.

In case of unconsciousness bring patient into stable side position for transport.

· After skin contact

Instantly wash with water and soap and rinse thoroughly.

Instantly rinse with water.

- · After eye contact Rinse opened eye for several minutes under running water.
- · After swallowing Rinse out mouth and then drink plenty of water.
- 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, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

- · For safety reasons unsuitable extinguishing agents Water with a full water jet.
- · 5.2 Special hazards arising from the substance or mixture

Can be released in case of fire

Nitrogen oxides (NOx)

Carbon monoxide (CO)

Under certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:

Hydrogen cyanide (HCN)

- · 5.3 Advice for firefighters
- · Protective equipment: Wear self-contained breathing apparatus.
- · Additional information

Cool endangered containers with water spray jet.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation

Keep away from ignition sources

Wear protective clothing.

· 6.2 Environmental precautions:

Prevent material from reaching sewage system, holes and cellars.

Keep dirty washing water for appropriate disposal.

· 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose of 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 information on disposal.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Keep containers tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

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· Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- · 7.2 Conditions for safe storage, including any incompatibilities
- · Storage
- Requirements to be met by storerooms and containers: No special requirements.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: Keep container tightly sealed.
- · Storage class TRGS-510

 \cdot 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection · Additional information about design of technical systems: No further data; see item 7.

· 8.1 Control parameters

-	· Components with critical values that require monitoring at the workplace:		
123-86-4 n-bu	tyl acetate		
WEL (Great B	ritain) Short-term value: 966 mg/m³, 200 ppm Long-term value: 724 mg/m³, 150 ppm		
822-06-0 hexa	methylene diisocyanate		
WEL (Great B	ritain) Short-term value: 0.07 mg/m³ Long-term value: 0.02 mg/m³ Sen; as -NCO		
· DNELs			
	iphatic polyisocyanate, HDI-based		
Inhalative DN	$VEL = 0.5 \text{ mg/m}^3 \text{ (worker long time)}$		
123-86-4 n-bu	•		
Inhalative DN	EL 480 mg/m³ (worker long time)		
	960 mg/m³ (worker short time)		
	102 mg/m³ (consumer long time)		
	860 mg/m³ (consumer short time)		
822-06-0 hexa	methylene diisocyanate		
Inhalative DN	$ EL 0.035 \text{ mg/m}^3 \text{ (worker long time)}$		
	0.07 mg/m^3 (worker short time)		
·PNECs			
28182-81-2 ali	iphatic polyisocyanate, HDI-based		
PNEC 44,551	mg/L (sediment fresh water)		
4,455 r	ng/L (sediment sea water)		
100 mg	100 mg/L (sewage)		
0.0199 mg/L (sea water)			
199 mg/L (fresh water)			
123-86-4 n-bu	tyl acetate		
PNEC 981 mg	z/L (sediment fresh water)		
0.0981	0.0981 mg/L (sediment sea water)		
35.6 m	35.6 mg/L (sewage)		
18 mg/	18 mg/L (sea water)		

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0.18 mg/L (fresh water)

822-06-0 hexamethylene diisocyanate

PNEC 8.4 mg/L (sewage)

0.00774 mg/L (sea water)

0.0774 mg/L (fresh water)

PNEC 0.01334 mg/kg (sediment fresh water)

0.001344 mg/kg (sediment sea water)

0.0026 mg/kg (soil)

· Ingredients with biological limit values:

822-06-0 hexamethylene diisocyanate

BMGV (Great Britain) 1 µmol creatinine/mol

Medium: urine

Sampling time: At the end of the period od exposure

Parameter: isocyanate-derived diamine

- · Additional information: The lists that were valid during the compilation were used as basis.
- · 8.2 Exposure controls
- · Personal protective equipment
- · General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

· Breathing equipment:

EN-136; EN-143; EN-149; EN-529:

Use breathing protection in case of insufficient ventilation.

In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.



Filter A/P2.

· Protection of hands:

EN-374 (III):



Protective gloves.

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

To avoid skin problems reduce the wearing of gloves to the required minimum.

Avoid direct contact with the chemical/ the product/ the preparation by organisational measures.

· 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.

Butyl rubber, BR

Fluorocarbon rubber (Viton)

Recommended thickness of the material:

≥ 0,6 mm

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· Penetration time of glove material

Value for the permeation: Level ≥

6

The determined penetration times according to EN 16523-1:2015 are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:

EN-166:



9.1 Information on basic physical and	d chemical properties
General Information	
Appearance:	Fluid
Form: Colour:	1 ********
Cotour: Smell:	According to product specification Characteristic
Odour threshold:	Not determined.
pH-value:	Not applicable
•	Not determined.
Change in condition	
Melting point/freezing point:	Not determined
Initial boiling point and boiling ran	ge: 124 °C ((EC)440/2008, Annex A.2)
Flash point:	27 °C ((EC)440/2008, Annex A.9)
Inflammability (solid, gaseous)	Not applicable.
Ignition temperature:	370 °C ((EC)440/2008, Annex A.15)
Decomposition temperature:	Not determined
	Not determined.
Self-inflammability:	Product is not selfigniting.
Explosive properties:	Product is not explosive. However, formation of explosive steam air mixtures is possible.
Critical values for explosion:	
Lower:	3 Vol %
Upper:	10.4 Vol %
Oxidising properties	None
Vapor pressure at 20 °C:	13 hPa ((EC)440/2008, Annex A.4)
Density at 20 °C	1.06 g/cm³ ((EC)440/2008, Annex A.3)
Relative density	Not determined.
Vapour density	Not determined
Evaporation rate	Not determined. Not determined.

– GE

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· Solubility in / Miscibility with		
Water:	Not miscible or difficult to mix	
· Partition coefficient: n-octanol/water:	Not determined	
•	Not determined.	
· Viscosity:		
dynamic:	Not determined.	
kinematic at 20 °C:	50 s (DIN 53211/4)	
· Solvent content:		
Organic solvents:	25.0 %	
· 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
- · Conditions to be avoided: No decomposition if used and stored according to specifications.
- · 10.3 Possibility of hazardous reactions No dangerous reactions known
- · 10.4 Conditions to avoid

Use explosion-proof [electrical/ventilating/lighting] equipment.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

· 10.5 Incompatible materials:

Reacts with strong oxidizing agents

Reacts with strong acids

Reacts with strong alkali

· 10.6 Hazardous decomposition products: None

SECTION 11: Toxicological information

- · 11.1 Information on toxicological effects
- · Acute toxicity

Harmful if inhaled.

· LD/LC50 1	LD/LC50 values that are relevant for classification:		
28182-81-2	28182-81-2 aliphatic polyisocyanate, HDI-based		
Oral	LD50	>5,000 mg/kg (Muroidea)	
Dermal	<i>LD50</i>	>2,000 mg/kg (Muroidea)	
Inhalative	LC50/4 h	0.39 mg/L (Muroidea)	
	NOAEL	3.3 mg/m³ (Muroidea)	
123-86-4 n	123-86-4 n-butyl acetate		
Oral	LD50	14,000 mg/kg (Muroidea)	
Dermal	LD50	>17,000 mg/kg (Leporidea)	
Inhalative	LC50/4 h	>21 mg/L (Muroidea)	
822-06-0 h	822-06-0 hexamethylene diisocyanate		
Oral	LD50	750 mg/kg (Muroidea)	
Dermal	LD50	7,000 mg/kg (Muroidea)	
Inhalative	LC50/4 h	0.15 mg/L (Muroidea)	
	NOAEL	35 mg/m³ (Muroidea)	
Drimary ir		4.	

- · Primary irritant effect:
- · Skin corrosion/irritation No irritant effect.
- · Serious eye damage/irritation No irritant effect.

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· Respiratory or skin sensitisation

May cause an allergic skin reaction.

- · 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. May cause drowsiness or dizziness.

- · 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 toxi	· Aquatic toxicity:		
28182-81-2	28182-81-2 aliphatic polyisocyanate, HDI-based		
EC0/48h	>100 mg/L (Daphnia magna)		
EC50/72h	199 mg/L (Pseudokirchneriella subcapitata)		
LC0/96h	>100 mg/L (Piscis)		
123-86-4 n-	123-86-4 n-butyl acetate		
NOEC(21d)	23 mg/L (Daphnia magna)		
EC50/72h	675 mg/L (Pseudokirchneriella subcapitata)		
EC50/48h	44 mg/L (Daphnia magna)		
LC50/96h	18 mg/L (Piscis)		
822-06-0 he	822-06-0 hexamethylene diisocyanate		
IC50/72h	>77 mg/L (Pseudokirchneriella subcapitata)		
EC0/48h	>89 mg/L (Daphnia magna)		
LC0/96h	>80 mg/L (Piscis)		

- · 12.2 Persistence and degradability No further relevant information available.
- · 12.3 Bioaccumulative potential

123-86-4 n-butyl acetate

log Pow 1.82 ([Co/Cw])

BCF = 3.

- · 12.4 Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

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

Do not allow undiluted product or large quantities of it to reach ground water, water bodies 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 of together with household garbage. Do not allow product to reach sewage system. Hand over to disposers of hazardous waste.

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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
15 00 00	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED
15 01 00	packaging (including separately collected municipal packaging waste)
15 01 10*	packaging containing residues of or contaminated by hazardous substances
HP3	Flammable
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP13	Sensitising

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

SECTION 14: Transport informa	tion	
14.1 UN-Number		
ADR/RID, IMDG, IATA	UN1263	
14.2 UN proper shipping name		
ADR/RID, IMDG, IATA	PAINT	
14.3 Transport hazard class(es)		
ADR/RID		
3		
Class	3 (F1) Flammable liquids.	
Label	3	
· IMDG, IATA		
Class	3 Flammable liquids.	
Label	3	
14.4 Packing group		
ADR/RID, IMDG, IATA	III	
14.5 Environmental hazards:		
14.6 Special precautions for user	Warning: Flammable liquids.	
Kemler Number:	30	
EMS Number:	<i>F-E</i> , <u><i>S-E</i></u>	
Segregation groups	Not applicable	
Stowage Category	A	

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· 14.7 Transport in bulk according to A	Annex II of
Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR/RID	
· Limited quantities (LQ)	5L
· Transport category	3
Tunnel restriction code	D/E
· UN ''Model Regulation'':	
-	UN 1263 PAINT, 3, III

SECTION 15: Regulatory information

- · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- · REGULATION (EC) No 1005/2009: No component is listed.
- · REGULATION (EC) NO 850/2004: No component is listed.
- · Directive 2012/18/EU
- · Named dangerous substances ANNEX I None of the ingredients is listed.
- · Seveso category P5c FLAMMABLE LIQUIDS
- Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000 t
- · Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 t
- · LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)

None of the ingredients is listed.

- · REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
- · National regulations
- · Information about limitation of use:

Employment restrictions concerning young persons must be observed. COUNCIL DIRECTIVE 94/33/EC on the protection of young people at work

- · Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
- · Other regulations, limitations and prohibitive regulations
- · Substances of very high concern (SVHC) according to REACH, Article 57

None of the ingredients is listed.

- · VOC-EU (1999/13/EG): 25.00 %
- · 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they 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.

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.

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

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

· Training hints

The product should be handled only by persons who have been sufficiently informed about the work, the hazardous properties and necessary safety precautions.

DIRECTIVE 98/24/EC

· Classification according to Regulation (EC) No 1272/2008		
Flammable liquids	Bridging principles	
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.	

• Department issuing data specification sheet: Responsible Department: GL/R&D

· Abbreviations and acronyms:

REACH -Reg.nr.: *, **, ***, **** = Excepted from REACH-Registration.

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)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

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)

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

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 3: Flammable liquids – 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

REACH: Regulation (EU) 1907/2006

CLP: Regulation (EU) 1272/2008

http://echa.europa.eu/

http://echa.europa.eu/information-on-chemicals

http://echa.europa.eu/regulations

MSDS, SDB, SDS

* Data compared to the previous version altered.