

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

- **1.1 Product identifier**
- **Trade name: Relocryl 2K-HS-Härter kurz**
- **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:**  
RELO  
Postfach 1132  
D-84049 Essenbach  
Tel.: +49 (0)8703/ 922 -0  
Fax: +49 (0)8703/ 922 -100  
Email: relo@b2bmail.eu
- **1.4 Emergency telephone number:** +49(0)700 24112112 (MIP)

## 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.



GHS07

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

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

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xn; Harmful

R20:      Harmful by inhalation.



Xi; Irritant

R37:      Irritating to respiratory system.



Xi; Sensitising

R43:      May cause sensitisation by skin contact.

R10-66:      Flammable. Repeated exposure may cause skin dryness or cracking.

- **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.

- **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- **2.2 Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

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

(Contd. on page 2)

**Trade name: Relocryl 2K-HS-Härter kurz**

(Contd. of page 1)

· **Hazard pictograms**



GHS02 GHS07

· **Signal word** Warning

· **Hazard-determining components of labelling:**

Hexamethylene diisocyanate, oligomers

n-butyl acetate

2-ethoxy-1-methylethyl acetate

4-isocyanatosulphonyltoluene

dibutyltin dilaurate

· **Hazard statements**

H226 Flammable liquid and vapour.

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/sparks/open flames/hot surfaces. No smoking.

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

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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

P405 Store locked up.

· **Additional information:**

EUH066 Repeated exposure may cause skin dryness or cracking.

EUH204 Contains isocyanates. May produce an allergic reaction.

Restricted to professional users.

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.· **vPvB:** Not applicable.

### 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.: 01-2119485796-17 01-2119488934-20	Hexamethylene diisocyanate, oligomers ☒ Xn R20; ☒ Xi R37; ☒ Xi R43 ☒ Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	50-100%
CAS: 123-86-4 EINECS: 204-658-1 Reg.nr.: 01-2119485493-29	n-butyl acetate R10-66-67 ☒ Flam. Liq. 3, H226; ☒ STOT SE 3, H336	25-50%

(Contd. on page 3)

**Safety data sheet**

according to 1907/2006/EC, Article 31

Printing date 10.08.2015

Version number 142

Revision: 13.01.2015

**Trade name: Relocryl 2K-HS-Härter kurz**

(Contd. of page 2)

CAS: 54839-24-6 EINECS: 259-370-9 Reg.nr.: 01-2119475116-39	2-ethoxy-1-methylethyl acetate R10-67 Flam. Liq. 3, H226; STOT SE 3, H336	15-<25%
CAS: 77-58-7 EINECS: 201-039-8 Reg.nr.: 01-2119496068-27	dibutyltin dilaurate T R60-61-48/25; C R34; Xn R68; Xi R43; N R50/53 Muta. 2, H341; Repr. 1B, H360Fd; STOT RE 1, H372; Skin Corr. 1B, H314; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Sens. 1, H317	0.1-<0.25%
CAS: 4083-64-1 EINECS: 223-810-8	4-isocyanatosulphonyltoluene Xi R36/37/38; Xn R42 R14 Resp. Sens. 1, H334; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	0.1-<0.3%

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

**4 First aid measures**· **4.1 Description of first aid measures**· **General information:**

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

In case of irregular breathing or respiratory arrest provide artificial respiration.

· **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.

**5 Firefighting measures**· **5.1 Extinguishing media**

· **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

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

In case of fire, the following can be released:

Nitrogen oxides (NO<sub>x</sub>)

Carbon monoxide (CO)

Hydrogen cyanide (HCN)

· **5.3 Advice for firefighters**

· **Protective equipment:** Mouth respiratory protective device.

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

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).

(Contd. on page 4)

**Trade name: Relocryl 2K-HS-Härter kurz**

(Contd. of page 3)

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Contain and collect spillages with non-combustible absorbent materials (e.g. sand, earth, diatomaceous earth) and place in a suitable container.

Decontaminate immediately with suitable mixture (flammable):

- as such usable (inflammatory!):

water 45 Vol.%

ethanol or isopropanol 50 Vol.%

ammonia solution (Density= 0.88) 5 Vol.%

- alternatively (non-flammable):

sodium carbonate 5 Vol.%

water 95 Vol.%

Add the same decontaminant to any residues and allow to stand for several days in a non-sealed container until no further reaction occurs. Once this stage is reached, close the container and dispose of in accordance with the waste regulations (see Section 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.

## 7 Handling and storage

· **7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Persons with a history of asthma, allergies or chronic or recurrent respiratory diseases should only be employed in processes in which this product is used under appropriate medical supervision.

· **Information about fire - and explosion protection:**

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 receptacles:** No special requirements.

· **Information about storage in one common storage facility:**

Do not store together with reducing agents, heavy-metal compounds, acids and alkalis.

Store away from foodstuffs.

· **Further information about storage conditions:**

Keep container tightly sealed.

Store separately from oxidising agents, strongly alkaline and strongly acidic materials, amines, alcohol and water.

· **Storage class:** 3

· **7.3 Specific end use(s)** No further relevant information available.

## 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:**

**28182-81-2 Hexamethylene diisocyanate, oligomers**

EBW	Short-term value: 0.5 mg/m <sup>3</sup> exposition evaluation valu TRGS 430 (EBW)
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(Contd. on page 5)

**Trade name: Relocryl 2K-HS-Härter kurz**

(Contd. of page 4)

**123-86-4 n-butyl acetate**

WEL Short-term value: 966 mg/m<sup>3</sup>, 200 ppm  
Long-term value: 724 mg/m<sup>3</sup>, 150 ppm

**77-58-7 dibutyltin dilaurate**

WEL Short-term value: 0.2 mg/m<sup>3</sup>  
Long-term value: 0.1 mg/m<sup>3</sup>  
as Sn; Sk

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

· **8.2 Exposure controls**· **Personal protective equipment:**

All personal protective equipment, including respiratory protective equipment, used to control exposure to hazardous substances must be selected to meet the requirements of the COSHH Regulations.

· **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.

Do not inhale gases / fumes / aerosols.

· **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.

Filter A/P2 (EN 141, EN 143)

· **Protection of hands:**

Protective gloves (EN 374)

· **Material of gloves**

Butyl rubber, BR

Recommended thickness of the material:  $\geq 0.7$  mm

· **Penetration time of glove material** Value for the permeation: Level  $\leq 3$ · **Eye protection:**

Tightly sealed goggles

## 9 Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**· **General Information**· **Appearance:**

**Form:** Fluid

**Colour:** According to product specification

· **Odour:** Characteristic

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

**Melting point/Melting range:** Undetermined.

(Contd. on page 6)

**Safety data sheet**

according to 1907/2006/EC, Article 31

Printing date 10.08.2015

Version number 142

Revision: 13.01.2015

**Trade name: Relocryl 2K-HS-Härter kurz**

(Contd. of page 5)

<b>Boiling point/Boiling range:</b>	124 °C
· <b>Flash point:</b>	28 °C (DIN 53213)
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature:</b>	370 °C (DIN 51794)
· <b>Decomposition temperature:</b>	Not determined.
· <b>Self-igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· <b>Explosion limits:</b>	
<b>Lower:</b>	1.2 Vol %
<b>Upper:</b>	7.5 Vol %
· <b>Vapour pressure at 20 °C:</b>	10.7 hPa
· <b>Density at 20 °C:</b>	1.03 g/cm <sup>3</sup> (DIN 53217)
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic at 20 °C:</b>	13 s (DIN 53211/4)
· <b>Solvent content:</b>	
<b>VOC (EC)</b>	45.42 %
<b>Solids content (weight-%):</b>	54.6 %
· <b>9.2 Other information</b>	No further relevant information available.

**10 Stability and reactivity**

- **10.1 Reactivity**
- **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:**  
Possible in traces.  
Nitrogen oxides  
Hydrogen chloride (HCl)  
Hydrogen cyanide (prussic acid)  
Carbon monoxide  
Nitrogen oxides (NOx)

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(Contd. on page 7)

**Trade name: Relocryl 2K-HS-Härter kurz**

(Contd. of page 6)

### 11 Toxicological information

· **11.1 Information on toxicological effects**

· **Acute toxicity:**

· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** No irritating effect.

· **Sensitisation:** Sensitisation possible through skin contact.

· **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

Irritant

### 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:**

Water hazard class 1 (German Regulation) : 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.

### 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
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· **Uncleaned packaging:**

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

### 14 Transport information

· **14.1 UN-Number**

· **ADR, IMDG, IATA**

UN1263

· **14.2 UN proper shipping name**

· **ADR**

1263 PAINT RELATED MATERIAL, special provision  
640E

· **IMDG, IATA**

PAINT RELATED MATERIAL

(Contd. on page 8)

## Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 10.08.2015

Version number 142

Revision: 13.01.2015

**Trade name: Relocryl 2K-HS-Härter kurz**

(Contd. of page 7)

· **14.3 Transport hazard class(es)**

· **ADR**



· **Class** 3 (F1) Flammable liquids.  
 · **Label** 3

· **IMDG, IATA**



· **Class** 3 Flammable liquids.  
 · **Label** 3

· **14.4 Packing group**

· **ADR, IMDG, IATA** III

· **14.5 Environmental hazards:**

· **Marine pollutant:** No

· **14.6 Special precautions for user**

Warning: Flammable liquids.

· **Danger code (Kemler):** 30

· **EMS Number:** F-E,S-E

· **14.7 Transport in bulk according to Annex II of**

**MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Transport category** 3

· **Tunnel restriction code** D/E

· **IMDG**

· **Limited quantities (LQ)** 5L

· **UN "Model Regulation":**

UN1263, PAINT RELATED MATERIAL, special provision 640E, 3, III

### 15 Regulatory information

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

· **National regulations:**

Class	Share in %
I	0.1-<0.3
NK	25-50

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 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.

(Contd. on page 9)



**Safety data sheet**

according to 1907/2006/EC, Article 31

Printing date 10.08.2015

Version number 142

Revision: 13.01.2015

**Trade name: Relocryl 2K-HS-Härter kurz**

(Contd. of page 8)

**· Relevant phrases**

- H226 *Flammable liquid and vapour.*  
H314 *Causes severe skin burns and eye damage.*  
H315 *Causes skin irritation.*  
H317 *May cause an allergic skin reaction.*  
H319 *Causes serious eye irritation.*  
H332 *Harmful if inhaled.*  
H334 *May cause allergy or asthma symptoms or breathing difficulties if inhaled.*  
H335 *May cause respiratory irritation.*  
H336 *May cause drowsiness or dizziness.*  
H341 *Suspected of causing genetic defects.*  
H360Fd *May damage fertility. Suspected of damaging the unborn child.*  
H372 *Causes damage to organs through prolonged or repeated exposure.*  
H400 *Very toxic to aquatic life.*  
H410 *Very toxic to aquatic life with long lasting effects.*
- R10 *Flammable.*  
R14 *Reacts violently with water.*  
R20 *Harmful by inhalation.*  
R34 *Causes burns.*  
R36/37/38 *Irritating to eyes, respiratory system and skin.*  
R37 *Irritating to respiratory system.*  
R42 *May cause sensitisation by inhalation.*  
R43 *May cause sensitisation by skin contact.*  
R48/25 *Toxic: danger of serious damage to health by prolonged exposure if swallowed.*  
R50/53 *Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.*  
R60 *May impair fertility.*  
R61 *May cause harm to the unborn child.*  
R66 *Repeated exposure may cause skin dryness or cracking.*  
R67 *Vapours may cause drowsiness and dizziness.*  
R68 *Possible risk of irreversible effects.*

**· 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)*  
Flam. Liq. 3: *Flammable liquids, Hazard Category 3*  
Acute Tox. 4: *Acute toxicity, Hazard Category 4*  
Skin Corr. 1B: *Skin corrosion/irritation, Hazard Category 1B*  
Skin Irrit. 2: *Skin corrosion/irritation, Hazard Category 2*  
Eye Irrit. 2: *Serious eye damage/eye irritation, Hazard Category 2*  
Resp. Sens. 1: *Sensitisation - Respirat., Hazard Category 1*  
Skin Sens. 1: *Sensitisation - Skin, Hazard Category 1*  
Muta. 2: *Germ cell mutagenicity, Hazard Category 2*  
Repr. 1B: *Reproductive toxicity, Hazard Category 1B*  
STOT SE 3: *Specific target organ toxicity - Single exposure, Hazard Category 3*  
STOT RE 1: *Specific target organ toxicity - Repeated exposure, Hazard Category 1*  
Aquatic Acute 1: *Hazardous to the aquatic environment - Acute Hazard, Category 1*  
Aquatic Chronic 1: *Hazardous to the aquatic environment - Chronic Hazard, Category 1*

**· \* Data compared to the previous version altered.**