# Safety Data Sheet
**according to Regulation (EC) No. 1907/2006 (REACH)**
**according to Regulation (EU) No 453/2010**



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

### 1.1. Product identifiers

| | |
|---|---|
| Article No. (manufacturer/supplier): | 20710 |
| Identification of the substance or mixture | KIWODUR RD |

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

**Relevant identified uses**

Curing agent. Reserved for industrial and professional use.

### 1.3. Details of the supplier of the safety data sheet

**supplier (manufacturer/importer/downstream user/distributor)**

KISSEL + WOLF GmbH
In den Ziegelwiesen 6
69168 Wiesloch

Telephone: 49 6222 578-0
Telefax: 49 6222 578-100
E-mail: info@kiwo.de

**Dept. responsible for information:**

EHS Environment-Health-Safety
E-mail ehs@kiwo.de

### 1.4. Emergency telephone number

Emergency telephone number +49 6222 578 219

## 2. Hazards identification

### 2.1. Classification of the substance or mixture

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**

This mixture is classified as hazardous according to regulation (EC) No. 1272/2008 [CLP].

| | | |
|---|---|---|
| Flam. Liq. 2 / H225 | flammable liquids | Highly flammable liquid and vapour. |
| Eye Irrit. 2 / H319 | Serious eye damage/eye irritation | Causes serious eye irritation. |
| Resp. Sens. 1 / H334 | respiratory or skin sensitisation | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Skin Sens. 1 / H317 | respiratory or skin sensitisation | May cause an allergic skin reaction. |
| STOT SE 3 / H336 | Specific target organ toxicity (single exposure) | May cause drowsiness or dizziness. |

### 2.2. Label elements

The product is classified and labelled according to EC directives or corresponding national laws.

**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

**Hazard pictograms**

**Danger**

**Hazard statements**

| | |
|---|---|
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H317 | May cause an allergic skin reaction. |
| H336 | May cause drowsiness or dizziness. |

**Precautionary statements**

| | |
|---|---|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P261 | Avoid breathing vapours. |
| P280 | Wear protective gloves and eye/face protection. |
| P284 | In case of inadequate ventilation wear respiratory protection. |
| P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P342 + P311 | If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. |
| P370 + P378 | In case of fire: Use Extinguishing powder or sand to extinguish. |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P403 + P235 | Store in a well-ventilated place. Keep cool. |

**contains:**

m-tolylidene diisocyanate
toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol ethyl acetate

**Supplemental Hazard information (EU)**

| | |
|---|---|
| EUH066 | Repeated exposure may cause skin dryness or cracking. |
| EUH204 | Contains isocyanates. May produce an allergic reaction. |

2.3. **Other hazards**

## 3. Composition / Information on ingredients

3.2. **Mixtures**

**Product description / chemical characterization**

**Description** Mixture of components, as listed below, with nonhazardous constituents

**Hazardous ingredients**

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**

| **EC No.**<br>**CAS No.**<br>**INDEX No.** | **REACH No.**<br>**Chemical name**<br>**classification:** | **Wt %**<br>**Remark** |
|---|---|---|
| 500-120-8<br>53317-61-6 | toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol<br>Eye Irrit. 2 H319 / Skin Sens. 1 H317 | 70 - 100 |
| 205-500-4<br>141-78-6<br>607-022-00-5 | 01-2119475103-46<br>ethyl acetate<br>Flam. Liq. 2 H225 / Eye Irrit. 2 H319 / STOT SE 3 H336 | 20 - 25 |
| 247-722-4<br>26471-62-5<br>615-006-00-4 | 01-2119454791-31<br>m-tolylidene diisocyanate<br>Carc. 2 H351 / Acute Tox. 2 H330 / Eye Irrit. 2 H319 / STOT SE 3 H335 / Skin Irrit. 2 H315 / Resp. Sens. 1 H334 / Skin Sens. 1 H317 / Aquatic Chronic 3 H412 | 0,3 - 0,5 |

**Additional information**
Full text of classification: see section 16

## 4. First-aid measures

4.1. **Description of first aid measures**

**General information**

In all cases of doubt, or when symptoms persist, seek medical advice.In case of unconsciousness give nothing by mouth, place in recovery position and seek medical advice.In case of irregular breathing or respiratory arrest provide artificial respiration.

**Following skin contact**
After contact with skin, wash immediately with plenty of water and soap.Remove contaminated, saturated clothing immediately.

**After eye contact**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.If eye irritation persists: Get medical advice/attention.

**After ingestion**
Seek medical advice immediately.Do NOT induce vomiting.

4.2. **Most important symptoms and effects, both acute and delayed**
In all cases of doubt, or when symptoms persist, seek medical advice.

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

## 5. Firefighting measures

5.1. **Extinguishing media**

**Suitable extinguishing media**
Carbon dioxide Water mist Foam

**Extinguishing media which must not be used for safety reasons:**

strong water jet

5.2. **Special hazards arising from the substance or mixture**
Gases/vapours, toxic

5.3. **Special protective equipment for firefighters:**
Provide a conveniently located respiratory protective device.

**Additional information**
The danger areas must be delimited and identified using relevant warning and safety signs. Cool closed containers that are near the source of the fire.Do not allow water used to extinguish fire to enter drains, ground or waterways. Treat runoff as hazardous.

## 6. Accidental release measures

6.1. **Personal precautions, protective equipment and emergency procedures**
Keep away from sources of ignition. Ventilate affected area.Remove persons to safety. Do not breathe vapours.See protective measures under point 7 and 8.

6.2. **Environmental precautions**
Do not allow to enter into surface water or drains.If the product contaminates lakes, rivers or sewages, inform competent authorities in accordance with local regulations.Provide good ventilation.

6.3. **Methods and material for containment and cleaning up**
Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see chapter 13).

6.4. **Reference to other sections**
Observe protective provisions (see chapter 7 and 8).

## 7. Handling and storage

7.1. **Precautions for safe handling**

**Advices on safe handling**

Avoid formation of flammable and explosive vapour concentrations in the air and exceeding the exposure limit values.Only use the material in places where open light, fire and other flammable sources can be kept away.Product may become electrostatically charged. When transferring, earthed pipework shall be used exclusively. Anti-static clothing including shoes are recommended. Use only spark proof tools. Avoid contact with skin and eyes. Do not inhale vapours or mist.
Do no eat, drink or smoke when using this product.
Personal protection equipment: refer to chapter 8.
Follow the legal protection and safety regulations.

7.2. **Conditions for safe storage, including any incompatibilities**

**Technical measures and storage conditions**
Keep container tightly closed in a cool, well-ventilated place.

**Requirements for storage rooms and vessels**
Always keep in containers that correspond to the material of the original container.Ensure adequate ventilation of the storage area.

**Hints on joint storage**
Keep away from strongly acidic and alkaline materials as well as oxidizers.

**Additional information**
VCI-storage class, see Chapter 15

7.3. **Specific end use(s)**
Observe technical data sheet.Observe instructions for use.

## 8. Exposure controls / Personal protection

8.1. **Control parameters**
**Occupational exposure limit values:**

ethyl acetate
INDEX No. 607-022-00-5 / EC No. 205-500-4 / CAS No. 141-78-6

TRGS 900, AGW, TWA: 1500 mg/m3; 400 ppm
TRGS 900, AGW, STEL: 3000 mg/m3; 800 ppm

m-tolylidene diisocyanate
INDEX No. 615-006-00-4 / EC No. 247-722-4 / CAS No. 26471-62-5

TRGS 430, TWA: 0,035 mg/m3; 0,005 ppm
TRGS 430, STEL: 0,035 mg/m3; 0,005 ppm
TRGS 430, Ceiling: 0,14 mg/m3; 0,02 ppm

**Additional information**
TWA : long-term occupational exposure limit value
STEL : short-term occupational exposure limit value
Ceiling : peak limitation

**DNEL:**

ethyl acetate
INDEX No. 607-022-00-5 / EC No. 205-500-4 / CAS No. 141-78-6
DNEL long-term dermal (local), Workers: 63 mg/kg
DNEL acute inhalative (local), Workers: 1468 mg/m³
DNEL acute inhalative (systemic), Workers: 1468 mg/m³
DNEL long-term inhalative (local), Workers: 734 mg/m³
DNEL long-term inhalative (systemic), Workers: 734 mg/m³

m-tolylidene diisocyanate
INDEX No. 615-006-00-4 / EC No. 247-722-4 / CAS No. 26471-62-5
DNEL acute inhalative (local), Workers: 0,14 mg/m³
DNEL acute inhalative (systemic), Workers: 0,14 mg/m³
DNEL long-term inhalative (local), Workers: 0,035 mg/m³
DNEL long-term inhalative (systemic), Workers: 0,035 mg/m³

**PNEC:**

ethyl acetate
INDEX No. 607-022-00-5 / EC No. 205-500-4 / CAS No. 141-78-6
PNEC aquatic, freshwater: 0,24 mg/L
PNEC aquatic, marine water: 0,024 mg/L
PNEC aquatic, intermittent release: 1,65 mg/L
PNEC sediment, freshwater: 0,24 mg/kg
PNEC sediment, marine water: 0,015 mg/kg
PNEC, Soil: 0,148 mg/kg
PNEC sewage treatment plant (STP): 650 mg/L

toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
EC No. 500-120-8CAS No. 53317-61-6
PNEC, Soil: > 1 mg/kg
PNEC sewage treatment plant (STP): > 1 mg/L

m-tolylidene diisocyanate
INDEX No. 615-006-00-4 / EC No. 247-722-4 / CAS No. 26471-62-5
PNEC aquatic, freshwater: 0,013 mg/L
PNEC aquatic, marine water: 0,0125 x10^-1 mg/L
PNEC, Soil: > 1 mg/kg
PNEC sewage treatment plant (STP): > 1 mg/L

8.2. **Exposure controls**

Provide good ventilation. This can be achieved with local or room suction. If this should not be sufficient to keep aerosol and solvent vapour concentration below the exposure limit values, a suitable respiratory protection must be used.

**Personal protection equipment**

**Respiratory protection**
If concentration of solvents is beyond the occupational exposure limit values, approved and suitable respiratory protection must be used.Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

**Hand protection**
Chemical resistant protective gloves: DIN EN 374
Recommendation for contact by spatter: Protection Index 2
Permeation time >30 min., e.g. butyl rubber 0,4 mm
Recommendation for direct contact: Protection Index 6
Permeation time >480 min., e.g. nitrile rubber 0,4 mm

**Eye protection**
Wear closed protection glasses. DIN EN 166

**Protective clothing**
Wear antistatic clothing of natural fibers (cotton) or heat resistant synthetic fibers.

**Protective measures**
After contact clean skin thoroughly with water and soap or use appropriate cleanser.

**Environmental exposure controls**
Do not allow to enter into surface water or drains.

## 9. Physical and chemical properties

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

**Appearance:**

| | |
|---|---|
| **Physical state** | liquid |
| **Colour** | depending on coloration |
| **Odour** | typical |

| **Safety relevant basis data** | | | **Method** | **Remark** |
|---|---|---|---|---|
| **Flash point:** | -1 | °C | DIN 53213 | |
| **Ignition temperature in °C** | 460 | °C | | |
| **Lower explosion limit** | 2,1 | Vol-% | | |
| **Upper explosion limit** | 11,5 | Vol-% | | |
| **Vapour pressure at 20 °C:** | 24,51 | mbar | | |
| **Density at 20 °C:** | 1,17 | g/cm³ | | |
| **Water solubility (g/L)** | insoluble | | | |
| **pH at 20 °C:** | - | | | |
| **Viscosityat 23 °C:** | 455 s 4 mm | | DIN 53211 | |
| **Initial boiling point and boiling range** | 76 | °C (101,3 kPa) | | |

9.2. **Other information:**

## 10. Stability and reactivity

10.1. **Reactivity**

10.2. **Chemical stability**
Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to chapter 7.

10.3. **Possibility of hazardous reactions**
Keep away from strong acids, strong bases and strong oxidizing agents to avoid exothermic reactions.

10.4. **Conditions to avoid**

10.5. **Incompatible materials**

10.6. **Hazardous decomposition products**
Hazardous decomposition byproducts may form with exposure to high temperatures, e.g.: carbon dioxide, carbon monoxide, smoke, nitrogen oxides.

## 11. Toxicological information

Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]
No data on preparation itself available.

11.1. **Information on toxicological effects**

**Acute toxicity**

ethyl acetate
oral, LD50, Rat: 5600 mg/kg
dermal, LD50, Rabbit: 18000 mg/kg

toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
oral, LD50, Rat: > 5000 mg/kg
dermal, LD50, Rabbit: > 9400 mg/kg
inhalative (dust and mist), LC50, Rat: > 2,462 mg/L (4 h)

**skin corrosion/irritation; Serious eye damage/eye irritation**

Toxicological data are not available.

**Respiratory or skin sensitisation**

Toxicological data are not available.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Toxicological data are not available.

**Specific target organ toxicity**

Toxicological data are not available.

**Aspiration hazard**

Toxicological data are not available.

**Practical experience/human evidence**

Other observations:
Prolonged or repeated contact with the preparation can lead to irritations of mucous membranes and of skin such as redness, formation of blebs, dermatitis, etc..In case of inhalation dizziness, Nausea Inhalation causes narcotic effects/intoxication.Solvents may cause some of the aforementioned effects through skin resorption. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and/or absorption through skin. Splashing may cause eye irritation and reversible damage.

**Overall Assessment on CMR properties**

The ingredients in this mixture do not meet the criteria for classification as CMR category 1A or 1B according to CLP.

**Remark**

There is no information available on the preparation itself .

## 12. Ecological information

**overall evaluation**
Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]
Do not store at public landfills.

12.1. **Toxicity**

ethyl acetate
Fish toxicity, LC50, Pimephales promelas (fathead minnow): 230 mg/L (96 h)
Daphnia toxicity, EC50, Daphnia magna: 717 mg/L (48 h)
Algae toxicity, ErC50, Desmodesmus subspicatus.: 3300 mg/L

**Long-term Ecotoxicity**

Toxicological data are not available.

12.2. **Persistence and degradability**
Toxicological data are not available.

12.3. **Bioaccumulative potential**
Toxicological data are not available.

**Bioconcentration factor (BCF)**

Toxicological data are not available.

12.4. **Mobility in soil**
Toxicological data are not available.

12.5. **Results of PBT assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. **Other adverse effects**

## 13. Disposal considerations

13.1. **Waste treatment methods**

**Appropriate disposal / Product**
**Recommendation**

**List of proposed waste codes/waste designations in accordance with EWC**
080501 waste isocyanates

**packaging**
**Recommendation**
Non-contaminated packages may be recycled.Vessels not properly emptied are special waste.

## 14. Transport information

14.1. **UN number**

1866

14.2. **UN proper shipping name**

| | |
|---|---|
| Land transport (ADR/RID): | Resin solution<br>(Ethyl acetate) |
| Sea transport (IMDG): | RESIN SOLUTION |
| Air transport (ICAO-TI / IATA-DGR): | Resin solution |

14.3. **Transport hazard class(es)**

3

14.4. **Packing group**

II

14.5. **Environmental hazards**

| | |
|---|---|
| Land transport (ADR/RID) | n.a. |
| Marine pollutant | n.a. |

14.6. **Special precautions for user**

Transport always in closed, upright and safe containers. Make sure that persons transporting the product know what to do in case of an accident or leakage.
Advices on safe handling: see parts 6 - 8

**Additional information**

**Land transport (ADR/RID)**

| | |
|---|---|
| tunnel restriction code | D/E |

**Sea transport (IMDG)**

| | |
|---|---|
| EmS-No. | F-E, S-E |
| Packaging >30 l | |

14.7. **Transport in bulk according to Annex II of MARPOL and the IBC Code**

not applicable

## 15. Regulatory information

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

**EU legislation**

**VOC**

| | |
|---|---|
| VOC-value (in g/L): ISO 11890-2 | 292,500 |
| VOC-value (in g/L): ASTM D 2369 | 292,500 |

**Observe in addition any national regulations!**

**Restrictions of occupation**
Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

**Substance/product listed in the following inventories:**
Listed in TOXIC SUBSTANCES CONTROL ACT (TSCA)

15.2. **Chemical Safety Assessment**
Chemical safety assessments for substances in this preparation were not carried out.

## 16. Other information

**Full text of classification in section 3:**

| | | |
|---|---|---|
| Eye Irrit. 2 / H319 | Serious eye damage/eye irritation | Causes serious eye irritation. |
| Skin Sens. 1 / H317 | respiratory or skin sensitisation | May cause an allergic skin reaction. |
| Flam. Liq. 2 / H225 | flammable liquids | Highly flammable liquid and vapour. |
| STOT SE 3 / H336 | Specific target organ toxicity (single exposure) | May cause drowsiness or dizziness. |
| Carc. 2 / H351 | Carcinogenicity | Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard). |
| Acute Tox. 2 / H330 | Acute toxicity (inhalative) | Fatal if inhaled. |

| | | |
|---|---|---|
| STOT SE 3 / H335 | Specific target organ toxicity (single exposure) | May cause respiratory irritation. |
| Skin Irrit. 2 / H315 | skin corrosion/irritation | Causes skin irritation. |
| Resp. Sens. 1 / H334 | respiratory or skin sensitisation | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Aquatic Chronic 3 / H412 | Hazardous to the aquatic environment | Harmful to aquatic life with long lasting effects. |

**Additional information**
Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]

The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and EU regulations.Without written approval, the product must not be used for purposes different from those mentioned in chapter 1.It is always the user's duty to take any necessary measures for meeting the requirements laid down by local rules and regulations.The details in this safety data sheet describe the safety requirements of our product and are not to be regarded as guaranteed attributes of the product.