## 1. Identification

**Product identifier**

ESKANOL PU 25 COMP. B

**Art.-No.**

10641

**Recommended use of the chemical and restrictions on use**

**Use of the substance/mixture**

Hardener

**Details of the supplier of the safety data sheet**

Company name: TIP TOP Oberflaechenschutz Elbe GmbH
Street: Heuweg 4
Place: D-06886 Wittenberg
Telephone: +49(0)3491/635-50 Telefax: +49(0)3491/635-552
Responsible Department: Responsible for the safety data sheet: sds@gbk-ingelheim.de

**Emergency phone number:** INTERNATIONAL: +49 - (0) 6132 - 84463, GBK GmbH (24h - 7d/w - 365d/a)

## 2. Hazard(s) identification

**Classification of the chemical**

**29 CFR Part 1910.1200**

Hazard categories:
Flammable liquids: Flam. Liq. 3
Acute toxicity: Acute Tox. 4
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Irrit. 2A
Respiratory or skin sensitization: Skin Sens. 1
Specific target organ toxicity single exposure: STOT SE 3
Specific target organ toxicity repeated or prolonged exposure: STOT RE 2
Hazard Statements:
Flammable liquid and vapor
Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
May cause respiratory irritation
May cause damage to organs through prolonged or repeated exposure

**Label elements**

**29 CFR Part 1910.1200**

**Signal word:** Warning

**Pictograms:**

**Hazard statements**

Flammable liquid and vapor
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation

Harmful if inhaled
May cause respiratory irritation
May cause damage to organs through prolonged or repeated exposure

**Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not breathe vapour.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical advice/attention if you feel unwell.

**Hazards not otherwise classified**

According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT / vPvB substance.
Vapours may form explosive mixture with air.

## 3. Composition/information on ingredients

**Mixtures**

**Chemical characterization**

Aliphatic polyisocyanate

**Hazardous components**

| CAS No | Components | Quantity |
|---|---|---|
| 28182-81-2 | Hexamethylene-1,6-diisocyanate, homopolymer | < 75 % |
| 1330-20-7 | Xylene (mixed isomers) | < 15 % |
| 100-41-4 | Ethyl benzene | < 5 % |
| 822-06-0 | Hexamethylene diisocyanate | < 0,38 % |

## 4. First-aid measures

**Description of first aid measures**

**General information**

Remove contaminated soaked clothing immediately.
If you feel unwell, seek medical advice.
Take away from danger area and lay down affected person.
In case of the person being unconscious put him/her in a stable side position.

**After inhalation**

Move to fresh air in case of accidental inhalation of vapours or decomposition products.
Refer for medical treatment.
If patient is not breathing, apply artificial respiration.

**After contact with skin**

Wash off with soap and plenty of water.
Consult a doctor if skin irritation persists.
Do not use solvents or thinners.

**After contact with eyes**

Remove contact lens.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Seek medical treatment by eye specialist.

**After ingestion**

Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.
Never give anything by mouth to an unconscious person.
Summon a doctor immediately.
Induce vomiting only upon the advice of a physician.

**Most important symptoms and effects, both acute and delayed**

Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.

OSHA Hazard Communication: This material is considered hazardous by the OSHA Hazard Communication Standard 29CFR 1910.1200.

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

Treat symptoms.

## 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media**

Alcohol-resistant foam, dry chemical, carbon dioxide ($CO_2$), water-spray.

**Unsuitable extinguishing media**

Full water jet.

**Specific hazards arising from the chemical**

Fire may produce:
Carbon monoxide (CO), carbon dioxide ($CO_2$) and nitrogen oxides (NOx).
Hydrogen cyanide (HCN)
Isocyanates (NCO).

**Special protective equipment and precautions for fire-fighters**

Wear self-contained breathing apparatus and protective suit.

**Additional information**

Cool containers at risk with water spray jet.
The vapour/air mixture is explosive, even in empty, uncleaned receptacles.
Vapours are heavier than air and spread along ground.
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

In case of vapour formation use respirator.
Use only explosion-proof equipment.
Ensure adequate ventilation.
Use personal protective clothing.
Keep away sources of ignition.

**Environmental precautions**

Do not discharge into the drains/surface waters/groundwater.
Do not discharge into the subsoil/soil.
Inform competent authority about release into the sewerage, ground or into waters.

**Methods and material for containment and cleaning up**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder).
Shovel into suitable container for disposal.
Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.
Container should not be gas-tight closed.

**Reference to other sections**

Observe protective instructions (see Sections 7 and 8).
Information for disposal look up chapter 13.

## 7. Handling and storage

**Precautions for safe handling**

**Advice on safe handling**

Keep container tightly closed.
Keep a good ventilation and air-exhaust at the place of work.
Vapours are heavier than air and spread along ground.
Avoid contact with the skin and the eyes.
When using do not eat, drink or smoke.
Do not empty container under pressure. No pressure tank!
Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

**Advice on protection against fire and explosion**

Keep away from heat and sources of ignition.
Do not smoke.
Take precautionary measures against static discharges.
Use only explosion-proof equipment.

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

**Requirements for storage rooms and vessels**

Keep container tightly closed in a dry, cool and well-ventilated place.
Pay attention to anti-explosion protection rules.
Protect from heat and direct solar radiation.

**Advice on storage compatibility**

Incompatible with:
Oxidizing agents
Acids and bases.
Water, amines, alcohols

**Further information on storage conditions**

Keep away from food, drink and animal feeding stuffs.

## 8. Exposure controls/personal protection

**Control parameters**

**Exposure limits**

| CAS No. | Substance | ppm | mg/m³ | f/cc | Category | Origin |
|---|---|---|---|---|---|---|
| 100-41-4 | Ethyl benzene | 100 | 435 | | TWA (8 h) | PEL |
| | | 100 | 435 | | TWA (8 h) | REL |
| | | 20 | | | TWA (8 h) | ACGIH-2016 |
| | | 125 | 545 | | STEL (15 min) | REL |
| 822-06-0 | Hexamethylene diisocyanate | 0.005 | 0.035 | | TWA (8 h) | REL |
| | | 0.005 | | | TWA (8 h) | ACGIH-2016 |
| | | C 0.020 | C 0.140 | | Ceiling | REL |
| 1330-20-7 | Xylene: mixed isomers | 100 | | | TWA (8 h) | ACGIH-2016 |
| | | 150 | | | STEL (15 min) | ACGIH-2016 |
| 1330-20-7 | Xylenes (o-,m-,p-isomers) | 100 | 435 | | TWA (8 h) | PEL |

**Biological Exposure Indices (BEI-ACGIH)**

| CAS No. | Substance | Determinant | Value | Test material | Sampling time |
|---|---|---|---|---|---|
| 822-06-0 | 1,6-HEXAMETHYLENE DIISOCYANATE | 1,6-Hexamethylene diamine (creatinine) | 15 µg/g | urine | End of shift |
| 100-41-4 | ETHYL BENZENE | Sum of mandelic acid and phenylglyoxylic acid | 0.15 g/g | urine | End of shift |
| 1330-20-7 | XYLENES (technical or commercial grade) | Methylhippuric acids (creatinine) | 1.5 g/g | urine | End of shift |

## Exposure controls

**Appropriate engineering controls**

Ensure adequate ventilation, especially in confined areas.

**Protective and hygiene measures**

Do not inhale vapours.
Wash hands before breaks and immediately after handling the product.
When using do not eat, drink or smoke.
Treat subsequently with skin cream.
Remove and wash contaminated clothing before re-use.

**Eye/face protection**

Tightly fitting goggles.
Eye wash bottle with pure water.

**Hand protection**

Protective gloves resistant to chemicals made of butyl, Minimum coat thickness 0.7 mm, Permeation resistance (wear duration) approx. 480 minutes, i.e. protective glove <Butoject 898> made by www.kcl.de.
This recommendation refers exclusively to the chemical compatibility and the lab test conforming to EN 374 carried out under lab conditions.
Requirements can vary as a function of the use. Therefore it is necessary to adhere additionally to the recommendations given by the manufacturer of protective gloves.

**Skin protection**

Long sleeved clothing.

**Respiratory protection**

In case of insufficient ventilation wear suitable respiratory equipment (gas filter type A).

## 9. Physical and chemical properties

**Information on basic physical and chemical properties**

| | |
|---|---|
| Physical state: | Liquid |
| Color: | Colourless - yellowish |
| Odor: | Characteristic |

| | | Test method |
|---|---|---|
| **Changes in the physical state** | | |
| Initial boiling point and boiling range: | approx. 145 °C | |
| Pourpoint: | approx. - 48 °C | |
| Flash point: | approx. 38 °C | DIN 53213 |
| Lower explosion limits: | 1,5 vol. % | *) |
| Upper explosion limits: | 10,8 vol. % | *) |
| Ignition temperature: | approx. 460 °C | DIN 51794 |
| Vapor pressure: (at 20 °C) | approx. 10 hPa | EC A 4 |
| Vapor pressure: (at 50 °C) | approx. 30 hPa | EC A 4 |
| Density (at 20 °C): | approx. 1,07 g/cm³ | ISO 2811 |
| Water solubility: (at 15 °C) | Immiscible | |
| Viscosity / dynamic: (at 23 °C) | approx. 250 mPa·s | DIN 51377 |
| Viscosity / kinematic: (at 40 °C) | > 20,5 mm²/s | |
| Solvent content: | < 30 % | |

**Other information**

*) 2-Methoxy-1-methylethyl acetate

## 10. Stability and reactivity

**Reactivity**

No decomposition if stored and applied as directed.

**Chemical stability**

Stability: Stable

Stable under normal conditions.

**Possibility of hazardous reactions**

Hazardous reactions: Will not occur

Reactions with acids, alkalies and oxidizing agents.
Reacts with: Water, amines, alcohols

**Conditions to avoid**

To avoid thermal decomposition, do not overheat.
Heating can release vapours which can be ignited.
Vapour/air-mixtures are explosive at intense warming.

**Incompatible materials**

Strong oxidizing agents

Strong acids and strong bases
Water, amines, alcohols

**Hazardous decomposition products**

Carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx)
Hydrogen cyanide gas., Isocyanates

## 11. Toxicological information

**Information on toxicological effects**

**Route(s) of Entry**

Skin and eye contact, inhalation and ingestion.

**Acute toxicity**

Harmful if inhaled
No toxicological data available.

**Irritation and corrosivity**

Causes skin irritation
Causes serious eye irritation

**Sensitizing effects**

May cause an allergic skin reaction (Hexamethylene-1,6-diisocyanate, homopolymer; Hexamethylene diisocyanate)

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**Specific target organ toxicity (STOT) - single exposure**

May cause respiratory irritation (Hexamethylene-1,6-diisocyanate, homopolymer)

**Specific target organ toxicity (STOT) - repeated exposure**

May cause damage to organs through prolonged or repeated exposure (Xylene (mixed isomers))

Carcinogenicity (IARC): Xylenes (CAS 1330-20-7) is listed in group 3. Ethylbenzene (CAS 100-41-4) is listed in group 2B.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Additional information on tests**

This product is classified in accordance with the GHS regulations.

**Practical experience**

**Other observations**

Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Inhalation of high concentrations may cause injuries to liver, kidneys and central nervous system.
Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.
With hypersensitive people, reactions as cough or difficulty of breathing may appear even with tiny concentrations of isocyanates; therefore keep room aerated and ventilated.

## 12. Ecological information

**Ecotoxicity**

Ecological data are not available.

**Persistence and degradability**

No data available.

**Bioaccumulative potential**

No data available.

**Mobility in soil**

No data available.

**Other adverse effects**

Hazardous water pollutant.

**Further information**

Do not flush into surface water or sanitary sewer system.
In aqueous systems, formation of unsoluble and chemically inert (inactive) polyureas.

## 13. Disposal considerations

**Waste treatment methods**

**Advice on disposal**

Can be incinerated, when in compliance with local regulations.
Where possible recycling is preferred to disposal.

**Contaminated packaging**

Empty containers should be taken for local recycling, recovery or waste disposal.
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.
Packaging that cannot be cleaned should be disposed of like the product.

## 14. Transport information

**US DOT 49 CFR 172.101**

| | |
|---|---|
| **UN/ID number:** | UN 1866 |
| **Proper shipping name:** | Resin solution |
| **Transport hazard class(es):** | 3 |
| **Packing group:** | III |
| Hazard label: | 3 |

**Marine transport (IMDG)**

| | |
|---|---|
| **UN number:** | UN 1866 |
| **UN proper shipping name:** | Resin solution |
| **Transport hazard class(es):** | 3 |
| **Packing group:** | III |
| Hazard label: | 3 |

| | |
|---|---|
| Marine pollutant: | No |
| Limited quantity: | 5 L / 30 kg |
| Excepted quantity: | E1 |
| EmS: | F-E, S-E |

**Air transport (ICAO-TI/IATA-DGR)**

| | |
|---|---|
| **UN number:** | UN 1866 |
| **UN proper shipping name:** | Resin solution |
| **Transport hazard class(es):** | 3 |
| **Packing group:** | III |
| Hazard label: | 3 |

| | |
|---|---|
| Limited quantity Passenger: | 10 L |
| Passenger LQ: | Y344 |
| Excepted quantity: | E1 |

| | |
|---|---|
| IATA-packing instructions - Passenger: | 355 |
| IATA-max. quantity - Passenger: | 60 L |
| IATA-packing instructions - Cargo: | 366 |
| IATA-max. quantity - Cargo: | 220 L |

**Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: no

**Special precautions for user**

Handle in accordance with good industrial hygiene and safety practice.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

The transport takes place only in approved and appropriate packaging.

## 15. Regulatory information

**U.S. Regulations**

**National Inventory TSCA**

All of the components are listed on the TSCA inventory.

**National regulatory information**

SARA Section 304 CERCLA:
Xylene (mixed isomers) (1330-20-7): Reportable quantity = 100 (45.4) lbs. (kg)
Ethylbenzene (100-41-4): Reportable quantity = 1,000 (454) lbs. (kg)
Hexamethylene-1,6-diisocyanate (822-06-0): Reportable quantity = 100 (45.4) lbs. (kg)
SARA Section 311/312 Hazards:
Hexamethylene-1,6-diisocyanate, homopolymer (28182-81-2): Immediate (acute) health hazard
Xylene (mixed isomers) (1330-20-7): Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard
Ethylbenzene (100-41-4): Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard
Hexamethylene-1,6-diisocyanate (822-06-0): Immediate (acute) health hazard
SARA Section 313 Toxic release inventory:
Xylene (mixed isomers) (1330-20-7): De minimis limit = 1.0 %, Reportable threshold = Standard
Ethylbenzene (100-41-4): De minimis limit = 0.1 %, Reportable threshold = Standard
Hexamethylene-1,6-diisocyanate (822-06-0): De minimis limit = 1.0 %, Reportable threshold = Standard
Clean Air Act Section 112(b):
Xylene (mixed isomers) (1330-20-7), Ethylbenzene (100-41-4), Hexamethylene-1,6-diisocyanate (822-06-0)

**State Regulations**

**Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)**

WARNING: This product contains the following chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm: Ethylbenzene (cancer).

## 16. Other information

**Hazardous Materials Information Label (HMIS)**

| | |
|---|---|
| Health: | *2 |
| Flammability: | 2 |
| Physical Hazard: | 0 |

**NFPA Hazard Ratings**

| | |
|---|---|
| Health: | 2 |
| Flammability: | 2 |
| Reactivity: | 0 |
| Unique Hazard: | |
| Revision date: | 27.06.2017 |
| Revision No: | 1,0 |

**Abbreviations and acronyms**

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
IMDG = International Maritime Code for Dangerous Goods
IATA/ICAO = International Air Transport Association / International Civil Aviation Organization
MARPOL = International Convention for the Prevention of Pollution from Ships
IBC-Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
REACH = Registration, Evaluation, Authorization and Restriction of Chemicals
CAS = Chemical Abstract Service
EN = European norm
ISO = International Organization for Standardization
DIN = Deutsche Industrie Norm
PBT = Persistent Bioaccumulative and Toxic
vPvB = Very Persistent and very Bio-accumulative
LD = Lethal dose
LC = Lethal concentration
EC = Effect concentration
IC = Median immobilisation concentration or median inhibitory concentration

**Other data**

The information in this document is based on the present state of knowledge and is applicable to the product with regard to appropriate safety precautions.
The information describes exclusively the safety requirements for the product (s) and is based on the present level of our knowledge.
The delivery specifications are contained in the corresponding product sheet.
This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.
(n.a. = not applicable; n.d. = not determined)

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*