

Safety Data Sheet

Globally Harmonized System (GHS) Rev.6

Printing date 31.10.2019

Version number 30

Revision: 18.10.2019

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

- **1.1 Product identifier**
- **Trade name:** PROTEGOL UR-COATING 32-60 Comp.B
- **Article number:** 206205-1
- **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** Polyurethane lacquer
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
TIB Chemicals AG
Muelheimer Str. 16-22
D-68219 Mannheim /Germany
Tel.: +49 621 8901-700
- **Informing department:**
PRODUKTSERVICE
e-mail: produktservice@tib-chemicals.com
Mo-Fr 9:00 AM – 3:00 PM: Tel.: +49(0)621 8901 710
- **1.4 Emergency telephone number:** 24 h Tel.: +49(0)621 8901 700 Fax.: +49(0)621 8901 900

SECTION 2: Hazards identification

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



health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 Carc. 2 H351 Suspected of causing cancer. Route of exposure: Inhalation.
 STOT RE 2 H373 May cause damage to the respiratory system and the respiratory tract through prolonged or repeated exposure. Route of exposure: Inhalation.



Acute Tox. 4 H332 Harmful if inhaled.
 Skin Irrit. 2 H315 Causes skin irritation.
 Eye Irrit. 2A H319 Causes serious eye irritation.
 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



GHS08

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- **Signal word** Danger
- **Hazard-determining components of labelling:**
4,4'-diphenylmethanediisocyanate, isomere, homologue and mixtures
diphenylmethane-4,4'-di-isocyanate
Isocyanic acid, polymethylenepolyphenylene ester, polymer with alpha-hydro-omega-hydroxypoly(oxy(methyl-1,2-ethanediyl))
diphenylmethane-2,4'-diisocyanate
- **Hazard statements**
H332 Harmful if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer. Route of exposure: Inhalation.
H335 May cause respiratory irritation.
H373 May cause damage to the respiratory system and the respiratory tract through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Precautionary statements**
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P284 [In case of inadequate ventilation] wear respiratory protection.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **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 the substances listed below and harmless substances.

- **Dangerous components:**

CAS: 9016-87-9 EC number: 618-498-9	4,4'-diphenylmethanediisocyanate, isomere, homologue and mixtures ⚠ Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	50-75%
CAS: 101-68-8 EINECS: 202-966-0	diphenylmethane-4,4'-di-isocyanate ⚠ Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	20-50%

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CAS: 53862-89-8 EC number: 670-234-1	Isocyanic acid, polymethylenepolyphenylene ester, polymer with alpha-hydro-omega-hydroxypoly(oxy(methyl-1,2-ethanediyl)) ⚠ Resp. Sens. 1, H334; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	15-25%
CAS: 5873-54-1 EINECS: 227-534-9	diphenylmethane-2,4'-diisocyanate ⚠ Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335; Acute Tox. 5, H303	<2.5%

· **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**
Remove contaminated clothing.
Remove breathing apparatus only after contaminated clothing has been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation** In case of unconsciousness bring patient into stable side position for transport.
- **After skin contact**
Immediately wash with water and soap and rinse thoroughly.
Immediately rinse with water.
If skin irritation continues, consult a doctor.
- **After eye contact**
Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
- **After swallowing** In case of persistent symptoms 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.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire fighting measures that suit the environment.
- **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
Carbon monoxide (CO)
- Nitrogen oxides (NO_x)
Formation of poisonous gases during heating or in fires.
- **5.3 Advice for firefighters**
- **Protective equipment:** Put on breathing apparatus.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Put on breathing apparatus.

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- **6.2 Environmental precautions:** Do not allow to enter the ground/soil.
- **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**
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.
Open and handle container with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** Keep breathing equipment ready.
- **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** LGK 10-13
- **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 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.

- **DNELs**

101-68-8 diphenylmethane-4,4'-di-isocyanate

Oral	Consumer: acute systemic effects	20 mg/kg bw/d (human (calculated))
Dermal	Consumer: acute local effects	17.2 mg/cm ² (human (calculated))
	Consumer: acute systemic effects	25 mg/kg bw/d (human (calculated))
Inhalative	Worker: acute local effect	28.7 mg/cm ² (human (calculated))
	Worker: acute systemic effects	50 mg/kg bw/d (human (calculated))
	Consumer: long-term local effects	0.025 mg/m ³ (human (calculated))
	Consumer: long-term systemic effects	0.025 mg/m ³ (human (calculated))
	Consumer: acute local effects	0.05 mg/m ³ (human (calculated))
	Consumer: acute systemic effects	0.05 mg/m ³ (human (calculated))
Worker: long-term systemic effects	Worker: long-term local effects	0.05 mg/m ³ (human (calculated))
	Worker: long-term systemic effects	0.05 mg/m ³ (human (calculated))
	Worker: acute systemic effects	0.1 mg/m ³ (human (calculated))

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5873-54-1 diphenylmethane-2,4'-diisocyanate

Oral	Consumer: acute systemic effects	20 mg/kg bw/d (human (calculated))
Dermal	Consumer: acute local effects	17.2 mg/cm ² (human (calculated))
	Consumer: acute systemic effects	25 mg/kg bw/d (human (calculated))
Inhalative	Worker: acute local effect	28.7 mg/cm ² (human (calculated))
	Worker: acute systemic effects	50 mg/kg bw/d (human (calculated))
	Consumer: long-term local effects	0.025 mg/m ³ (human (calculated))
	Consumer: long-term systemic effects	0.025 mg/m ³ (human (calculated))
	Consumer: acute local effects	0.05 mg/m ³ (human (calculated))
	Consumer: acute systemic effects	0.05 mg/m ³ (human (calculated))
	Worker: long-term local effects	0.05 mg/m ³ (human (calculated))
	Worker: long-term systemic effects	0.05 mg/m ³ (human (calculated))
	Worker: acute local effect	0.1 mg/m ³ (human (calculated))
	Worker: acute systemic effects	0.1 mg/m ³ (human (calculated))

- **PNECs**

101-68-8 diphenylmethane-4,4'-di-isocyanate

Freshwater ecosystem: Freshwater organisms	1,000 µg/l (Freshwater organisms)
Marine ecosystem: Marine water organisms	100 µg/l (Marine water organisms)
Sewage treatment plant (STP): Microorganisms	1 mg/l (Microorganisms)
Terrestrial ecosystem: Agricultural soil organisms	1 mg/kg soil dw (Agricultural soil organisms)

- **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**

Keep away from foodstuffs, beverages and food.

Take off immediately all contaminated clothing

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

Store protective clothing separately.

Avoid contact with the eyes and skin.

- **Breathing equipment:**

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.

- **Protection of hands:**

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

- **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.

- **Penetration time of glove material**

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

- **Eye protection:** Tightly sealed safety glasses.

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 · **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:	Brown
· Odour:	earthy, musty
· Odour threshold:	Not determined.

 · **pH-value:** Not determined.

 · **Change in condition**

Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	Not determined

 · **Flash point:** >100 °C

 · **Inflammability (solid, gaseous)** Not applicable.

 · **Ignition temperature:** 400 °C

 · **Decomposition temperature:** Not determined.

 · **Self-inflammability:** Product is not selfigniting.

 · **Explosive properties:** Product is not explosive.

 · **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

 · **Vapour pressure:** Not determined.

 · **Density at 20 °C:** 1.2 g/cm³

 · **Relative density** Not determined.
Not determined.

 · **Vapour density** Not determined.

 · **Evaporation rate** Not determined.

 · **Solubility in / Miscibility with**

 · **Water:** react with water with formation of carbon dioxide

 · **Partition coefficient: n-octanol/water:** Not determined.

 · **Viscosity:**

dynamic at 20 °C:	800 mPas
kinematic:	Not determined.

 · **Solvent content:**

 · **Solids content:** 0.0 %

 · **9.2 Other information** No further relevant information available.

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SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
To avoid thermal decomposition do not overheat.
Temperatures > 200 °C
- **10.3 Possibility of hazardous reactions**
Exothermic reaction with amines and alcohols.
Reacts with water forming carbon dioxide. In closed containers build up pressure - risk of bursting!
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Nitrogen oxides (NO_x)
Hydrogen cyanide (prussic acid)
Isocyanate
- **Additional information:**
Two component reaction-plastic: cured with component B the product leads to a high molecular compound and is nearly inert.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
Harmful if inhaled.

- **LD/LC50 values that are relevant for classification:**

9016-87-9 4,4'-diphenylmethanediisocyanate, isomere, homologue and mixtures

Oral	LD50	>15,000 mg/kg (rat)
Dermal	LD50	>9,400 mg/kg (rabbit) (Acute Dermal Toxicity)
Inhalative	LC50/4 h	0.31 mg/l (rat) (Acute Inhalation Toxicity)

101-68-8 diphenylmethane-4,4'-di-isocyanate

Oral	LD50	>5,000 mg/kg (rat)
Dermal	LD50	>5,000 mg/kg (rabbit)
Inhalative	LC50/4 h	0.49 mg/l (rat)

5873-54-1 diphenylmethane-2,4'-diisocyanate

Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>9,400 mg/kg (rabbit)
Inhalative	LC50/4 h	0.387 mg/l (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **Respiratory or skin sensitisation**
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.

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- **Carcinogenicity**
Suspected of causing cancer. Route of exposure: Inhalation.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**
May cause respiratory irritation.
- **STOT-repeated exposure**
May cause damage to the respiratory system and the respiratory tract through prolonged or repeated exposure. Route of exposure: Inhalation.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

9016-87-9 4,4'-diphenylmethanediisocyanate, isomere, homologue and mixtures

EC50/24 h	>1,000 mg/l (Daphnia magna (water flea)) (Daphnia sp. Acute Immobilisation Test)
LC50/96 h	>1,000 mg/l (Danio rerio (zebrafish)) (Fish, Acute Toxicity Test)
EC50/3 h	>100 mg/l (activated sludge) (Activated Sludge, Respiration Inhibition Test)

101-68-8 diphenylmethane-4,4'-di-isocyanate

EC50/48 h	>1,000 mg/l (Daphnia magna (water flea))
LC50/96 h	>1,000 mg/l (Brachydanio rerio (zebrafish))

5873-54-1 diphenylmethane-2,4'-diisocyanate

NOEC/21d	>10 mg/l (Daphnia magna (water flea)) (Daphnia sp. Acute Immobilisation Test)
EC50/24 h	>1,000 mg/l (Daphnia magna (water flea)) (Daphnia sp. Acute Immobilisation Test)
LC50/96 h	>1,000 mg/l (Danio rerio (zebrafish)) (Fish, Acute Toxicity Test)
EC50/3 h	>100 mg/l (activated sludge) (Activated Sludge, Respiration Inhibition Test)

· Terrestrial toxicity:

5873-54-1 diphenylmethane-2,4'-diisocyanate

NOEC	>1,000 mg/kg soil dw (Avena sativa (Hafer)) (Terrestrial Plant Test: Seedling Emergence) Time of exposure 14 days
	>1,000 mg/kg soil dw (Eisenia fetida (Regenwürmer)) (OECD 207) Time of exposure 14 days
	>1,000 mg/kg soil dw (Lactuca sativa (Kopfsalat)) (Terrestrial Plant Test: Seedling Emergence) Time of exposure 14 days

- **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 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.

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SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Must be specially treated under adherence to official regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|---|--|
| · 14.1 UN-Number
· ADR, ADN, IMDG, IATA | Void |
| · 14.2 UN proper shipping name
· ADR, ADN, IMDG, IATA | Void |
| · 14.3 Transport hazard class(es)
· ADR, ADN, IMDG, IATA
· Class | Void |
| · 14.4 Packing group
· ADR, IMDG, IATA | Void |
| · 14.5 Environmental hazards:
· Marine pollutant: | No |
| · 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**
- **EU regulations/legislation**
- **Regulation (EC) No 1907/2006 (REACH), Annex XIV** not applicable
- **Regulation (EC) No 1907/2006 (REACH), Annex XVII**
Restrictions must be observed for:
dangerous liquid substances or mixtures (no. 3)
Methylenediphenyl diisocyanate (MDI) (no. 56)
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **National regulations**

Class	Share in %
I	81.2

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- **Water hazard class:**
Water hazard class 1 (German Regulation) (Self-classification) : slightly hazardous for water
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

The information contained herein 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.

- **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)
- 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
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 5: Acute toxicity – Category 5
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
- Resp. Sens. 1: Respiratory sensitisation – Category 1
- Skin Sens. 1: Skin sensitisation – Category 1
- Carc. 2: Carcinogenicity – Category 2
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

- * **Data compared to the previous version altered.**

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