

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

1.1. Product identifier

TIP TOP REMACOAT A-60 ISO

Art.-No.

590 2710, 590 2720

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

Use of the substance/mixture

Coating system for protection against wear and corrosion

1.3. Details of the supplier of the safety data sheet

Company name: TIP TOP Oberflächenschutz 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

1.4. Emergency telephone

number:

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

England and Wales: NHS Direct - 0845 4647; Scotland: NHS 24 - 08454 24 24
24

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture according to 1272/2008/EC

Hazard categories:

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Respiratory or skin sensitisation: Resp. Sens. 1

Respiratory or skin sensitisation: Skin Sens. 1

Carcinogenicity: Carc. 2

Specific target organ toxicity - single exposure: STOT SE 3

Specific target organ toxicity - repeated exposure: STOT RE 2

Hazard Statements:

Harmful if inhaled.

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

May cause respiratory irritation.

Causes serious eye irritation.

Causes skin irritation.

May cause an allergic skin reaction.

Suspected of causing cancer.

May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

Hazard components for labelling

Aromatic polyisocyanate prepolymer

Diphenylmethane-4,4'-diisocyanate

Diphenylmethane-2,4'-diisocyanate

Signal word:

Danger

Pictograms:



Hazard statements

H332 Harmful if inhaled.

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

H335 May cause respiratory irritation.

H319 Causes serious eye irritation.

TIP TOP REMACOAT A-60 ISO

Revision date: 01.12.2015

Revision No: 1,1

Product code: 00359-1086



| | |
|------|--|
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H351 | Suspected of causing cancer. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

Precautionary statements

| | |
|----------------|--|
| P260 | Do not breathe vapour. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P302+P352 | IF ON SKIN: Wash with plenty of water. |
| 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. |
| P308+P313 | IF exposed or concerned: Get medical advice/attention. |

Special labelling of certain mixtures

| | |
|--------|---|
| EUH204 | Contains isocyanates. May produce an allergic reaction. |
|--------|---|

2.3. Other hazards

Not known.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Chemical characterization**

Preparation with isocyanates

Hazardous components

| CAS No | Chemical name | | | Quantity |
|------------|--|--------------|------------------|-----------|
| | EC No | Index No | REACH No | |
| | Classification according to Regulation (EC) No. 1272/2008 [CLP] | | | |
| 39420-98-9 | Aromatic polyisocyanate prepolymer | | | > 75 % |
| | Carc. 2, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1, Skin Sens. 1, STOT SE 3, STOT RE 2; H351 H332 H315 H319 H334 H317 H335 H373 | | | |
| 101-68-8 | Diphenylmethane-4,4'-diisocyanate | | | 10 - 20 % |
| | 202-966-0 | 615-005-00-9 | 01-2119457014-47 | |
| | Carc. 2, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1, Skin Sens. 1, STOT SE 3, STOT RE 2; H351 H332 H315 H319 H334 H317 H335 H373 | | | |
| 5873-54-1 | Diphenylmethane-2,4'-diisocyanate | | | 10 - 20 % |
| | 227-534-9 | 615-005-00-9 | 01-2119480143-45 | |
| | Carc. 2, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1, Skin Sens. 1, STOT SE 3, STOT RE 2; H351 H332 H315 H319 H334 H317 H335 H373 | | | |

Full text of H and EUH statements: see section 16.

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

Remove contaminated soaked clothing immediately.
In the event of persistent symptoms receive medical treatment.

After inhalation

Move to fresh air in case of accidental inhalation of fumes from overheating or combustion.
Keep warm and calm injured person.
Refer for medical treatment.

After contact with skin

Remove immediately adhering matter.
Wash contaminated skin with plenty of water and soap or with liquid polyethylene glycol.
Consult a physician.

After contact with eyes

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.

Induce vomiting only upon the advice of a physician.

Summon a doctor immediately.

Rinse out mouth thoroughly with water.

4.2. 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 allergy or asthma symptoms or breathing difficulties if inhaled.

May cause respiratory irritation.

Suspected of causing cancer.

May cause damage to organs through prolonged or repeated exposure.

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

Treat symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Foam, carbon dioxide (CO₂), dry chemical, water-spray.

Unsuitable extinguishing media

Full water jet.

5.2. Special hazards arising from the substance or mixture

Fire may produce:

Carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x).

Hydrogen cyanide (HCN)

Isocyanates (NCO).

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

Additional information

Do not release chemically contaminated water into drains, soil or surface waters. Sufficient measures must be taken to retain water used for extinguishing.

Cool containers at risk with water spray jet.

Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

In case of vapour formation use respirator.

Ensure adequate ventilation.

Use personal protective clothing.

6.2. Environmental precautions

Do not discharge into the drains/surface waters/ground water.

Do not discharge into the subsoil/soil.

6.3. 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 should not be gas-tight closed.

Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.

6.4. Reference to other sections

Observe protective instructions (see Sections 7 and 8).

Information for disposal see section 13.

SECTION 7: Handling and storage



7.1. Precautions for safe handling

Advice on safe handling

Keep container tightly closed.
 Avoid contact with the skin and the eyes.
 Provide sufficient air exchange and/or exhaust in work rooms.
 Do not breathe vapours.
 When working with spray, exhaustion of air becomes indispensable.
 Use only in thoroughly ventilated areas.

Advice on protection against fire and explosion

No special protective measures against fire required.

7.2. 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.
 Keep at temperatures between 5°C and 50°C.
 Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.

Advice on storage compatibility

Exothermic reaction with:
 Acids and bases.
 Water, amines, alcohols

Further information on storage conditions

Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

Coating system for protection against wear and corrosion

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL/DMEL values

| CAS No | Substance | Exposure route | Effect | Value |
|--------------------|-----------------------------------|----------------|----------|-----------------|
| 101-68-8 | Diphenylmethane-4,4'-diisocyanate | | | |
| Worker DNEL, acute | | dermal | systemic | 50 mg/kg bw/day |
| 5873-54-1 | Diphenylmethane-2,4'-diisocyanate | | | |
| Worker DNEL, acute | | dermal | systemic | 50 mg/kg bw/day |

PNEC values

| CAS No | Substance | Value |
|------------|-----------------------------------|--------|
| 101-68-8 | Diphenylmethane-4,4'-diisocyanate | |
| Freshwater | | 1 mg/l |
| 5873-54-1 | Diphenylmethane-2,4'-diisocyanate | |
| Freshwater | | 1 mg/l |

8.2. Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas.

Protective and hygiene measures

Do not inhale vapours.
 Avoid contact with eyes and skin.
 Wash hands before breaks and immediately after handling the product.
 When using do not eat, drink or smoke.
 Take off immediately all contaminated clothing.



Eye/face protection

Tightly fitting goggles (EN 166).

Eye wash bottle with pure water (EN 15154).

Hand protection

Also suitable are gloves made of:

Polychloropren - CR (0,5 mm), Permeation time of the glove material: > 480 min

Nitrile rubber/nitrile latex - NBR (0,35 mm), Permeation time of the glove material: > 480 min

Butyl rubber - Butyl (0,5 mm), Permeation time of the glove material: > 480 min

Fluoro-rubber - FKM (0,4 mm), Permeation time of the glove material: > 480 min

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.

Pls. find examples in the protective gloves database under: <http://bestglove.com/site/chemrest/>

Skin protection

Light protective clothing

Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment (gas filter type A) (EN 14387).

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|-----------------|------------------------|
| Physical state: | Liquid |
| Colour: | Colourless - yellowish |
| Odour: | Mild aromatic |

Changes in the physical state

| | | |
|--|------------------------|-------------------|
| Initial boiling point and boiling range: | 115 °C | |
| Pour Point: | - 13 °C | DIN ISO 3016 |
| Flash point: | > 200 °C | DIN EN ISO 2719 |
| Lower explosion limits: | n.d. | |
| Upper explosion limits: | n.d. | |
| Ignition temperature: | > 400 °C | DIN 51794 |
| Decomposition temperature: | ~ 200 °C | EC: 440/2008 A.4. |
| Vapour pressure: (at 20 °C) | 0,0005 hPa | . |
| Density (at 20 °C): | 1,09 g/cm ³ | DIN 51757 |
| Water solubility: | Reacts with water. | |
| Viscosity / dynamic: (at 23 °C) | 3250 mPa·s | DIN 53019 |

9.2. Other information

No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No decomposition if stored and applied as directed.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reactions with strong acids and alkalies.

Reacts with: Water, amines, alcohols

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.



10.5. Incompatible materials

Acids and bases.

Water, amines, alcohols

10.6. Hazardous decomposition products

Hydrogen cyanide gas

Carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x).

Isocyanates

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Harmful if inhaled.

No toxicological data available.

Irritation and corrosivity

Causes serious eye irritation.

Causes skin irritation.

Sensitising effects

May cause allergy or asthma symptoms or breathing difficulties if inhaled. (Aromatic polyisocyanate prepolymer), (Diphenylmethane-4,4'-diisocyanate), (Diphenylmethane-2,4'-diisocyanate)

May cause an allergic skin reaction. (Aromatic polyisocyanate prepolymer), (Diphenylmethane-4,4'-diisocyanate), (Diphenylmethane-2,4'-diisocyanate)

STOT-single exposure

May cause respiratory irritation. (Aromatic polyisocyanate prepolymer), (Diphenylmethane-4,4'-diisocyanate), (Diphenylmethane-2,4'-diisocyanate)

Severe effects after repeated or prolonged exposure

May cause damage to organs through prolonged or repeated exposure. (Aromatic polyisocyanate prepolymer), (Diphenylmethane-4,4'-diisocyanate), (Diphenylmethane-2,4'-diisocyanate)

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of causing cancer. (Aromatic polyisocyanate prepolymer), (Diphenylmethane-4,4'-diisocyanate), (Diphenylmethane-2,4'-diisocyanate)

Aspiration hazard

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

Additional information on tests

Classification in compliance with the assessment procedure specified in the Regulation (EC) no 1272/2008.

Practical experience

Other observations

With hypersensitive people, reactions as cough or difficulty of breathing may appear even with tiny concentrations of isocyanates; therefore keep room aerated and ventilated.

SECTION 12: Ecological information

12.1. Toxicity

Aromatic polyisocyanate prepolymer [Conclusion by analogy]

LC50/Danio rerio/96 h > 1000 mg/l [OECD 203]

EC50/Daphnia magna/24 h > 1000 mg/l [OECD 202]

NOEC/Daphnia magna/21 d > 10 mg/l [OECD 202]

ErC50/Desmodesmus subspicatus/72 h > 1640 mg/l [OECD 201]

EC50/Activated sludge/3 h > 100 mg/l [OECD 209]

12.2. Persistence and degradability

Aromatic polyisocyanate prepolymer

Biodegradable (OECD): 0 %, 28 d [OECD 302C]

Not readily biodegradable. [Conclusion by analogy]

12.3. Bioaccumulative potential

There is no indication of bioaccumulation potential. [Conclusion by analogy]

12.4. Mobility in soil

No data available.



12.5. Results of PBT and vPvB assessment

According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT / vPvB substance.

12.6. Other adverse effects

Low hazard to waters.

Further information

In aqueous systems, formation of insoluble and chemically inert (inactive) polyureas.

Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Where possible recycling is preferred to disposal.

Can be incinerated, when in compliance with local regulations.

Waste disposal number of waste from residues/unused products

080409 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of adhesives and sealants (including waterproofing products); waste adhesives and sealants containing organic solvents or other hazardous substances
Classified as hazardous waste.

Contaminated packaging

Contaminated packagings are to be treated like the product itself.

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.

SECTION 14: Transport information

Land transport (ADR/RID); Marine transport (IMDG); Air transport (ICAO); Inland waterways transport (ADN):

14.1. UN number:

No hazardous material as defined by the transport regulations.

14.2. UN proper shipping name:

No hazardous material as defined by the transport regulations.

14.3. Transport hazard class(es):

No hazardous material as defined by the transport regulations.

14.4. Packing group:

No hazardous material as defined by the transport regulations.

14.5. Environmental hazards

No hazardous material as defined by the transport regulations.

14.6. Special precautions for user

No hazardous material as defined by the transport regulations.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No hazardous material as defined by the transport regulations.

SECTION 15: Regulatory information

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

EU regulatory information

2004/42/EC (VOC): 0 %

National regulatory information

Employment restrictions:

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

Water contaminating class (D):

1 - slightly water contaminating

Additional information



Consider Chemical prohibition regulation.

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

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

Relevant H and EUH statements (number and full text)

| | |
|--------|--|
| 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. |
| H351 | Suspected of causing cancer. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| EUH204 | Contains isocyanates. May produce an allergic reaction. |

Further Information

Data of items 4 to 8, as well as 10 to 12, do partly not refer to the use and the regular employing of the product (in this sense consult information on use and on product), but to liberation of major amounts in case of accidents and irregularities.

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.)