

Safety Data Sheet

according to Regulation (EC) No 1907/2006

TIP TOP REMAFIX S H3

Revision date: 06.12.2019

Product code: 00359-1085

Page 1 of 10

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

1.1. Product identifier

TIP TOP REMAFIX S H3

Art.-No.

525 2891

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

Use of the substance/mixture

Hardener

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)
In England and Wales: NHS 111 In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard Statements:
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Suspected of causing cancer.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

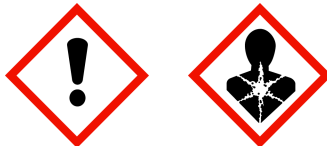
Regulation (EC) No. 1272/2008

Hazard components for labelling

Diphenylmethanediisocyanate, isomers and homologues
Diphenylmethane-4,4'-diisocyanate
Diphenylmethane-2,4'-diisocyanate
Diphenylmethane-2,2'-diisocyanate

Signal word: Danger

Pictograms:



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.

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

TIP TOP REMAFIX S H3

Revision date: 06.12.2019

Product code: 00359-1085

Page 2 of 10

H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
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

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

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	
	GHS Classification			
9016-87-9	Diphenylmethanediisocyanate, isomers and homologues			75 - < 100 %
			01-2119457024-46	
	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			5 - < 15 %
	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			
2536-05-2	Diphenylmethane-2,2'-diisocyanate			0,3 - < 1 %
	219-799-4	615-005-00-9	01-2119927323-43	
	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.
Take away from danger area and lay down affected person.



Safety Data Sheet

according to Regulation (EC) No 1907/2006

TIP TOP REMAFIX S H3

Revision date: 06.12.2019

Product code: 00359-1085

Page 3 of 10

After inhalation

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

After contact with skin

Wash contaminated skin with plenty of water and soap or with liquid polyethylene glycol.
Consult a doctor if skin irritation persists.

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.
Rinse out mouth thoroughly with water.
Never give anything by mouth to an unconscious person.
Summon a doctor immediately.
Induce vomiting only upon the advice of a physician.

4.2. Most important symptoms and effects, both acute and delayed

Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.
Suspected of causing cancer.

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

Keep under medical supervision for at least 48 hours.
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)

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

Additional information

Cool containers at risk with water spray jet.
Do not release chemically contaminated water into drains, soil or surface waters. Sufficient measures must be taken to retain water used for extinguishing.
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.

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

TIP TOP REMAFIX S H3

Revision date: 06.12.2019

Product code: 00359-1085

Page 4 of 10

Ensure adequate ventilation.
Remove persons to safety.
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.
Vapours are heavier than air and spread along ground.
Avoid contact with the skin and the eyes.
Do not breathe vapours.
Local exhaust.
Use only in thoroughly ventilated areas.

Advice on protection against fire and explosion

Keep away from heat and sources of ignition.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep containers tightly closed in a cool, well-ventilated place.

Hints on joint storage

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

Further information on storage conditions

Keep away from food, drink and animal feeding stuffs.
Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.

7.3. Specific end use(s)

Hardener

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
-	Isocyanates, all (as -NCO) Except methyl isocyanate	-	0.02		TWA (8 h)	WEL
		-	0.07		STEL (15 min)	WEL

8.2. Exposure controls

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

TIP TOP REMAFIX S H3

Revision date: 06.12.2019

Product code: 00359-1085

Page 5 of 10

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

Chemical protective gloves made of nitrile, nitrile/cotton, butyl or neoprene, with a minimum thickness of 0.7 mm, permeation time of approx. 480 minutes.

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**

Long sleeved clothing (DIN EN ISO 6530)

Single-use coverall

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:	Brown
Odour:	Musty

	Test method
pH-Value:	n.a.
Changes in the physical state	
Melting point:	n.d.
Initial boiling point and boiling range:	> 300 °C DIN 53171
Sublimation point:	n.a.
Pour point:	approx. - 30 °C ISO 3016
Flash point:	approx. 229 °C DIN EN ISO 2719
Flammability	
Solid:	n.a.
Gas:	n.a.
Explosive properties	
The product is not explosive.	
Lower explosion limits:	n.d.
Upper explosion limits:	n.d.
Ignition temperature:	> 500 °C DIN 51794
Auto-ignition temperature	
Solid:	n.a.

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

TIP TOP REMAFIX S H3

Revision date: 06.12.2019

Product code: 00359-1085

Page 6 of 10

Gas:	n.a.
Decomposition temperature:	090202031022 °C
Oxidizing properties	
Not oxidising.	
Vapour pressure: (at 20 °C)	approx. 11 hPa EC A 4
Vapour pressure: (at 50 °C)	approx. 20 hPa EC A 4
Density (at 25 °C):	approx. 1,23 g/cm ³ DIN 51757
Bulk density:	n.a.
Water solubility: (at 20 °C)	Reacts with water.
Solubility in other solvents	
n.d.	
Partition coefficient:	n.d.
Viscosity / dynamic: (at 20 °C)	approx. 145 mPa·s DIN 53019
Viscosity / kinematic:	n.d.
Flow time:	n.d.
Vapour density:	n.d.
Evaporation rate:	n.d.
Solvent separation test:	0 %
Solvent content:	0 %

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 reactionsReactions with strong acids and alkalis.
Reacts with: Water, amines, alcohols**10.4. Conditions to avoid**To avoid thermal decomposition, do not overheat. [Decomposition temperature ~ 200°C]
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)**SECTION 11: Toxicological information****11.1. Information on toxicological effects**

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

TIP TOP REMAFIX S H3

Revision date: 06.12.2019

Product code: 00359-1085

Page 7 of 10

Acute toxicity

Harmful if inhaled.
No toxicological data available.
Diphenylmethanediisocyanate, isomers and homologues
LD50/oral/rat: > 10000 mg/kg [OECD 401]
LD50/dermal/rabbit: > 9400 mg/kg [OECD 402]

Irritation and corrosivity

Causes skin irritation.
Causes serious eye irritation.

Sensitising effects

Contains isocyanates. May produce an allergic reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. (Diphenylmethanediisocyanate, isomers and homologues;
Diphenylmethane-4,4'-diisocyanate; Diphenylmethane-2,4'-diisocyanate; Diphenylmethane-2,2'-diisocyanate)
May cause an allergic skin reaction. (Diphenylmethanediisocyanate, isomers and homologues;
Diphenylmethane-4,4'-diisocyanate; Diphenylmethane-2,4'-diisocyanate; Diphenylmethane-2,2'-diisocyanate)

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of causing cancer. (Diphenylmethanediisocyanate, isomers and homologues;
Diphenylmethane-4,4'-diisocyanate; Diphenylmethane-2,4'-diisocyanate; Diphenylmethane-2,2'-diisocyanate)
Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation. (Diphenylmethanediisocyanate, isomers and homologues;
Diphenylmethane-4,4'-diisocyanate; Diphenylmethane-2,4'-diisocyanate; Diphenylmethane-2,2'-diisocyanate)

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure. (Diphenylmethanediisocyanate, isomers and homologues; 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**

Ecological data are not available.
Diphenylmethanediisocyanate, isomers and homologues
LC50/Danio rerio/96h > 1000 mg/l [OECD 203]
EC50/Daphnia magna/48h > 1000 mg/l [OECD 202]
EC50/Scenedesmus subspicatus/72h > 1640 mg/l [OECD 201]
EC50/Activated sludge/3h > 100 mg/l [OECD 209]

12.2. Persistence and degradability

Biodegradable (OECD): 0% [28 d; OECD 302 C]
Not readily biodegradable.

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment



Safety Data Sheet

according to Regulation (EC) No 1907/2006

TIP TOP REMAFIX S H3

Revision date: 06.12.2019

Product code: 00359-1085

Page 8 of 10

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

Disposal recommendations

Where possible recycling is preferred to disposal.

Can be incinerated, when in compliance with local regulations.

List of Wastes Code - 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; hazardous waste

Contaminated packaging

Empty containers should be taken for local recycling, recovery or waste disposal.

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.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

14.1. UN number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

14.5. Environmental hazards



Safety Data Sheet

according to Regulation (EC) No 1907/2006

TIP TOP REMAFIX S H3

Revision date: 06.12.2019

Product code: 00359-1085

Page 9 of 10

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

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

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 56: Diphenylmethane-4,4'-diisocyanate; Diphenylmethane-2,4'-diisocyanate;
Diphenylmethane-2,2'-diisocyanate

2004/42/EC (VOC): 0 %

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

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.

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.

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

TIP TOP REMAFIX S H3

Revision date: 06.12.2019

Product code: 00359-1085

Page 10 of 10

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.)