



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

1.1. Product identifier

TIP TOP SOLUTION STL-RF

Art.-No.

538 1239, 538 1241, 538 1244, 538 1299, 538 1952, 538 1971, 538 1976

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

Use of the substance/mixture

Assembling solution

1.3. Details of the supplier of the safety data sheet

Company name: REMA TIP TOP AG
Street: Gruber Strasse 63
Place: D-85586 Poing
Telephone: +49 (0) 8121 / 707 - 0
Verantwortlich für das Sicherheitsdatenblatt: 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

Indications of danger: T - Toxic, Xi - Irritant

R phrases:

May cause cancer.

Irritating to eyes and skin.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Vapours may cause drowsiness and dizziness.

Possible risks of irreversible effects.

GHS classification

Hazard categories:

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Respiratory/skin sensitization: Skin Sens. 1

Germ cell mutagenicity: Muta. 2

Carcinogenicity: Carc. 1B

Specific target organ toxicity - single exposure: STOT SE 3

Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:

Causes skin irritation.

May cause an allergic skin reaction.

Causes serious eye irritation.

May cause drowsiness or dizziness.

Suspected of causing genetic defects.

May cause cancer.

Harmful to aquatic life with long lasting effects.

2.2. Label elements

Hazardous components which must be listed on the label

Trichloroethylene

Colophonium

Signal word: Danger

Pictograms: GHS07-GHS08



Hazard statements

- | | |
|------|--|
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H336 | May cause drowsiness or dizziness. |
| H341 | Suspected of causing genetic defects. |
| H350 | May cause cancer. |
| H412 | Harmful to aquatic life with long lasting effects. |

Precautionary statements

- | | |
|-----------|--|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P261 | Avoid breathing vapour. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P308+P313 | IF exposed or concerned: Get medical advice/attention. |
| P405 | Store locked up. |
| P273 | Avoid release to the environment. |

Special labelling of certain mixtures

Restricted to professional users.

2.3. Other hazards

Not known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Preparation with trichloroethylene

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification	
Index No	GHS classification	
REACH No		
201-167-4	Trichloroethylene	< 95 %
79-01-6	Carc. Cat. 2, Muta. Cat. 3, Xi - Irritant R45-68-67-36/38-52-53	
602-027-00-9	Carc. 1B, Muta. 2, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, STOT SE 3, Aquatic Chronic 3; H350 H341 H315 H319 H317 H336 H412	
01-2119490731-36		
215-222-5	Zinc oxide	< 1 %
1314-13-2	N - Dangerous for the environment R50-53	
030-013-00-7	Aquatic Acute 1 (M-Factor = 1), Aquatic Chronic 1 (M-Factor = 1); H400 H410	
01-2119463881-32		
232-475-7	Colophonium	< 1 %
8050-09-7	R43	
650-015-00-7	Skin Sens. 1; H317	
01-2119480418-32		
203-585-2	1,4-Dihydroxybenzene	< 1 %
108-46-3	Xn - Harmful, Xi - Irritant, N - Dangerous for the environment R22-36/38-50	
604-010-00-1	Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Aquatic Acute 1 (M-Factor = 1); H302 H315 H319 H400	
01-2119480136-40		
215-267-0	Lead(II)-oxide	< 0,3 %
1317-36-8	Repr. Cat. 1, Repr. Cat. 3, Xn - Harmful, N - Dangerous for the environment R61-62-20/22-33-50-53	
	Repr. 1A, Acute Tox. 4, Acute Tox. 4, STOT RE 2, Aquatic Acute 1 (M-Factor = 1), Aquatic Chronic 1 (M-Factor = 1); H360Df H302 H332 H373 H400 H410	
01-2119531110-62		

Full text of R-, H- and EUH-phrases: see section 16.

Further Information

SVHC substance [Regulation (EC) No 1907/2006, Article 57]: Trichloroethylene; Lead(II)-oxide

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.

After inhalation

Move to fresh air in case of accidental inhalation of vapours.
In the event of symptoms refer for medical treatment.

After contact with skin

Wash off immediately with soap and plenty of water.
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

Induce vomiting only upon the advice of a physician.
Attention. Beware, danger of aspiration.
Summon a doctor immediately.
Immediately give plenty of water, if possible charcoal slurry.

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

May cause cancer.
Suspected of causing genetic defects.
May cause drowsiness or dizziness.
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.

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.
Product does not burn, fire-extinguishing activities according to surrounding.

Unsuitable extinguishing media

Full water jet.

5.2. Special hazards arising from the substance or mixture

Fire may produce:
Carbon monoxide and carbon dioxide
Chlorine and traces of phosgene.
Hydrogen chloride gas.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

Additional information

Keep away from heat and sources of ignition.
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.

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.
Care for thoroughly room ventilation, if necessary suck off at workplace.
Avoid contact with skin, eyes and clothing.

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.

Advice on storage compatibility

Incompatible with:

Oxidizing agents

Aluminium powder

Alkaline metals and earth alkaline metals.

Alkaline leaches

Further information on storage conditions

Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

Assembling solution

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
1333-86-4	Carbon black	-	3.5		TWA (8 h)	WEL
		-	7		STEL (15 min)	WEL
108-46-3	Resorcinol	10	46		TWA (8 h)	WEL
		20	92		STEL (15 min)	WEL
8050-09-7	Rosin-based solder flux fume	-	0.05		TWA (8 h)	WEL
		-	0.15		STEL (15 min)	WEL
79-01-6	Trichloroethylene	100	550		TWA (8 h)	WEL
		150	820		STEL (15 min)	WEL

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

Protective gloves resistant to chemicals made off viton, minimum coat thickness 0,7 mm, permeation resistance (wear duration) approx. 480 minutes, i.e. protective glove <Vitoject 890> 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 (EN 368).

Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment (gas filter type A) (EN 141).

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	Black
Odour:	Sweetish
Initial boiling point and boiling range:	approx. 90 °C
Flash point:	n.a. *)
Lower explosion limits:	7,9 vol. %
Upper explosion limits:	
Vapour pressure: (at 20 °C)	77 hPa
Vapour density:	4,54
Density:	1,45 g/cm ³
Water solubility: (at 20 °C)	Immiscible
Ignition temperature:	410 °C
Viscosity / dynamic:	1500 mPa·s
Solvent content:	< 95 %

9.2. Other information

**) According to PTB instructions, trichloroethylene has no flashpoint; however, vapour and air mixtures are flammable under a stronger energy influx."

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 alkali metals.

Reactions with earth alkali metals.

Reactions with oxidizing agents.

10.4. Conditions to avoid

Above 120°C, a thermic decomposition may take place.

10.5. Incompatible materials

Alkaline metals and alkaline earth metals.

Bases.

oxidizing agents, Aluminium powder

10.6. Hazardous decomposition products

Chlorine and traces of phosgene.

Hydrogen chloride gas

Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

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

Trichloroethylene

LD50/oral/rat: 5400 mg/kg

LD50/dermal/rabbit: > 2000 mg/kg

LC50/inhalation/rat: 12500 ppm/4h



Irritation and corrosivity

Causes skin irritation.
Causes serious eye irritation.

Sensitising effects

May cause an allergic skin reaction. (Trichloroethylene), (Colophonium)

STOT-single exposure

May cause drowsiness or dizziness. (Trichloroethylene)

Severe effects after repeated or prolonged exposure

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

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of causing genetic defects. (Trichloroethylene)
May cause cancer. (Trichloroethylene)

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

Components of the product may be absorbed into the body through the skin. (skin absorption).
Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.
Effects of breathing high concentrations of vapour may include:
Headache, dizziness, weakness, unconsciousness.
Hazard of lung oedema.
Skin contact or inhalation of solvents contained in this product may cause irritation of skin, eyes and mucous membranes.

SECTION 12: Ecological information

12.1. Toxicity

Trichloroethylene
LC50/Pimephales promelas/ 96 h = 42,4 mg/l
EC50/Daphnia magna/48 h = 20,8 mg/l
EC50/Algae/96 h = 36,5 mg/l
Zinc oxide
EC50/Selenastrum capricornutum/72 h = 0,17 mg/l

Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

Trichloroethylene
Biodegradable (OECD): 2,4% (14 d) [OECD 301C]
Not readily biodegradable.

12.3. Bioaccumulative potential

Trichloroethylene
Low bio-accumulation can be estimated because of low log Po/w. (Log Pow: 2,53)

12.4. Mobility in soil

Trichloroethylene
High mobility in soil.

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

Severe hazard to waters

Further information

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 dangerous substances
Classified as hazardous waste.

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.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 1710
14.2. UN proper shipping name: TRICHLOROETHYLENE Solution
14.3. Transport hazard class(es): 6.1
14.4. Packing group: III
Hazard label: 6.1



Classification code: T1
Limited quantity: 5 L / 30 kg
Transport category: 2
Hazard No: 60
Tunnel restriction code: E

Inland waterways transport (ADN)

14.1. UN number: UN 1710
14.2. UN proper shipping name: TRICHLOROETHYLENE Solution
14.3. Transport hazard class(es): 6.1
14.4. Packing group: III
Hazard label: 6.1



Classification code: T1
Limited quantity: 5 L / 30 kg

Marine transport (IMDG)

14.1. UN number: UN 1710
14.2. UN proper shipping name: TRICHLOROETHYLENE SOLUTION
14.3. Transport hazard class(es): 6.1
14.4. Packing group: III
Hazard label: 6.1



Marine pollutant: No
Limited quantity: 5 L / 30 kg

EmS: F-A, S-A

Other applicable information (marine transport)

Segregation group: 10 (Liquid halogenated hydrocarbons)

Air transport (ICAO)

14.1. UN number: UN 1710
14.2. UN proper shipping name: TRICHLOROETHYLENE
14.3. Transport hazard class(es): 6.1
14.4. Packing group: III
Hazard label: 6.1



Limited quantity Passenger: Y642 / 2 L
IATA-packing instructions - Passenger: 655
IATA-max. quantity - Passenger: 60 L
IATA-packing instructions - Cargo: 663
IATA-max. quantity - Cargo: 220 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

Handle in accordance with good industrial hygiene and safety practices.

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

The transport takes place only in approved and appropriate packaging.

SECTION 15: Regulatory information

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

EU regulatory information

1999/13/EC (VOC): < 95 %

National regulatory information

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing. Observe employment restrictions for women of child-bearing age.

Additional information

Chemical prohibition regulation consider.

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

LD = Lethal dose

LC = Lethal concentration

EC = Effect concentration

IC = Median immobilisation concentration or median inhibitory concentration

Relevant R-phrases (Number and full text)

- 20/22 Harmful by inhalation and if swallowed.
- 22 Harmful if swallowed.
- 33 Danger of cumulative effects.
- 36/38 Irritating to eyes and skin.
- 43 May cause sensitisation by skin contact.
- 45 May cause cancer.
- 50 Very toxic to aquatic organisms.
- 52 Harmful to aquatic organisms.
- 53 May cause long-term adverse effects in the aquatic environment.
- 61 May cause harm to the unborn child.
- 62 Possible risk of impaired fertility.
- 67 Vapours may cause drowsiness and dizziness.
- 68 Possible risks of irreversible effects.

Relevant H- and EUH-phrases (Number and full text)

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H336 May cause drowsiness or dizziness.
- H341 Suspected of causing genetic defects.
- H350 May cause cancer.
- H360Df May damage the unborn child. Suspected of damaging fertility.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

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.)