Safety Data Sheet

according to Regulation (EC) No 1907/2006

TIP TOP SOLUTION HL-WK2

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

1.1. Product identifier

TIP TOP SOLUTION HL-WK2

Art.-No.

527 0544, 527 0545, 527 0575

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 65
Place:	D-85586 Poing
Telephone:	+49 (0) 8121 / 707 - 100
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)
Public Poisons Information Line: +353 (0) 1 809 2166 (8am-10pm 7 days a week)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin Irrit. 2; H315
Eye Irrit. 2; H319
Skin Sens. 1; H317
Muta. 2; H341
Carc. 1B; H350
STOT SE 3; H336
Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

2.2. Label elements

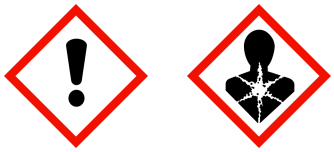
Regulation (EC) No 1272/2008

Hazard components for labelling

Trichloroethylene

Signal word: Danger

Pictograms:



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

According to Regulation (EC) No 1907/2006 (REACH) none of the substances, contained in this product are a PBT / vPvB substance.
The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Preparation with trichloroethylene

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
79-01-6	Trichloroethylene			< 90 %
	201-167-4	602-027-00-9	01-2119490731-36	
	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			
1314-13-2	Zinc oxide			< 1 %
	215-222-5	030-013-00-7	01-2119463881-32	
	Aquatic Acute 1, Aquatic Chronic 1; H400 H410			
5459-93-8	n-Cyclohexyl-N-ethylamine			< 1 %
	226-733-8		01-2119949285-29	
	Flam. Liq. 3, Acute Tox. 3, Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1, Aquatic Chronic 3; H226 H311 H332 H302 H314 H318 H412			
793-24-8	N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine			< 0.1 %
	212-344-0		01-2119485839-15	
	Repr. 1B, Acute Tox. 4, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1; H360FD H302 H317 H400 H410			

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

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
1314-13-2	215-222-5	Zinc oxide	< 1 %
	Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=1		
5459-93-8	226-733-8	n-Cyclohexyl-N-ethylamine	< 1 %
	inhalation: ATE = 11 mg/l (vapours); dermal: LD50 = 750 mg/kg; oral: LD50 = 590 mg/kg		
793-24-8	212-344-0	N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine	< 0.1 %
	dermal: LD50 = > 7940 mg/kg; oral: LD50 = 893 mg/kg Aquatic Acute 1; H400: M=10 Aquatic Chronic 1; H410: M=10		

Further Information

SVHC substance [Regulation (EC) No 1907/2006, Article 57]: Trichloroethylene

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

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 chloric 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

General advice

Ensure adequate ventilation.
Keep away noninvolved persons.
Get unprotected persons to safety.

For non-emergency personnel

Do not breathe vapours.
Avoid contact with skin, eyes and clothing.

For emergency responders

In case of vapour formation use respirator.
Use personal protective clothing.

6.2. Environmental precautions

Do not discharge into the drains/surface waters/groundwater.
Do not discharge into the subsoil/soil.

6.3. Methods and material for containment and cleaning up

For containment

Prevent spread over a wide area (e.g. by containment or oil barriers).

For 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).
Informations for disposal look up chapter 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.

Hints on joint storage

Incompatible with:
Oxidizing agents
Aluminium powder
Alkaline metals and earth alkaline metals.
Bases

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

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
7440-44-0	(OLD) Graphite, total inhalable dust	-	10		TWA (8 h)	
9006-04-6	Natural Rubber Latex (as inhalable allergenic proteins)	-	0.0001		TWA (8 h)	
79-01-6	Trichloroethylene	10	54.7		TWA (8 h)	
		30	164.1		STEL (15 min)	
1314-13-2	Zinc oxide, fume (Respirable Fraction)	-	2		TWA (8 h)	
		-	10		STEL (15 min)	

Biological limit values

CAS No	Substance	Parameter	Value	Test material	Sampling time
79-01-6	Trichloroethylene	TCA	20 mg/L	Urine	By the end of the last shift of a workweek/ shift period

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

Eye wash bottle with pure water (EN 15154).
Tightly fitting goggles (EN 166).

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 (DIN EN ISO 6530)

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:	Black
Odour:	Sweetish

		Test method
pH-Value:	n. d.	
Changes in the physical state		
Melting point/freezing point:	- 86,4 °C	*)
Boiling point or initial boiling point and boiling range:	87 °C	*)
Sublimation point:	n.a.	
Softening point:	n. d.	
Flash point:	n.a.	**)
Flammability		
Solid/liquid:	n.a.	
Explosive properties		
The product is not explosive.		
Lower explosion limits:	7,9 vol. %	*)
Upper explosion limits:	90 vol. %	*)
Auto-ignition temperature:	410 °C	*)
Self-ignition temperature		
Solid:	n.a.	
Gas:	n.a.	
Decomposition temperature:	n. d.	
Oxidizing properties		
Not oxidising.		
Vapour pressure: (at 20 °C)	77 hPa	*)
Density:	1,42 g/cm³	
Bulk density:	n.a.	*)
Water solubility: (at 20 °C)	Immiscible	
Solubility in other solvents		
n. d.		
Partition coefficient n-octanol/water:	n. d.	
Viscosity / dynamic:	3500 mPa·s	

Viscosity / kinematic:	n. d.
Flow time:	n. d.
Relative vapour density:	4,54
Evaporation rate:	n. d.
Solvent separation test:	0 %
Solvent content:	< 90 %

9.2. Other information

*) Trichloroethylene
**"*) 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 oxidising 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

No hazardous decomposition products known.
Fire may produce:
Chlorine and traces of phosgene.
Hydrogen chloride gas
Carbon monoxide and carbon dioxide

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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/inhalativ/rat: 12500 ppm/4h

ATEmix calculated

ATE (dermal) 681818,2 mg/kg

Irritation and corrosivity

Causes skin irritation.
Causes serious eye irritation.

Sensitising effects

May cause an allergic skin reaction. (Trichloroethylene; N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine)

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of causing genetic defects. (Trichloroethylene)
May cause cancer. (Trichloroethylene)
Reproductive toxicity: Based on available data, the classification criteria are not met.
Teratogenicity Not classified.

STOT-single exposure

May cause drowsiness or dizziness. (Trichloroethylene)

STOT-repeated exposure

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

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.

11.2. Information on other hazards

Endocrine disrupting properties

No data available.

Other information

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 = 47 mg/l
EC50/Algae/96 h = 420 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

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. 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

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 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
Excepted quantity:	E1
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

Special Provisions: 802
Limited quantity: 5 L / 30 kg
Excepted quantity: E1

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
Special Provisions: -
Limited quantity: 5 L / 30 kg
Excepted quantity: E1
EmS: F-A, S-A

Air transport (ICAO-TI/IATA-DGR)

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

Limited quantity Passenger: 2 L
Passenger LQ: Y642
Excepted quantity: E1
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 practice.

14.7. Maritime transport in bulk according to IMO instruments

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

Authorisations (REACH, annex XIV):

Substances of very high concern, SVHC (REACH, article 59):
Trichloroethylene

Restrictions on use (REACH, annex XVII):
Entry 3, Entry 28, Entry 75

2004/42/EC (VOC):	< 90 %
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 juveniles 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 hazard class (D):	3 - highly hazardous to water

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

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method
Skin Sens. 1; H317	Calculation method
Muta. 2; H341	Calculation method
Carc. 1B; H350	Calculation method
STOT SE 3; H336	Calculation method
Aquatic Chronic 3; H412	Calculation method

Relevant H and EUH statements (number and full text)

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
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.
H360FD	May damage fertility. May damage the unborn child.
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.)