

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

### 1.1. Product identifier

TIP TOP SOLUTION HL-WK4plus

#### Art.-No.

527 0602, 527 0621

### 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  
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## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Indications of danger: F - Highly flammable, Xi - Irritant, N - Dangerous for the environment

R phrases:

Highly flammable.

Irritating to eyes and skin.

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

Vapours may cause drowsiness and dizziness.

#### GHS classification

Hazard categories:

Flammable liquid: Flam. Liq. 2

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Specific target organ toxicity - single exposure: STOT SE 3

Hazardous to the aquatic environment: Aquatic Chronic 2

Hazard Statements:

Highly flammable liquid and vapour.

Causes skin irritation.

Causes serious eye irritation.

May cause drowsiness or dizziness.

Toxic to aquatic life with long lasting effects.

### 2.2. Label elements

#### Hazardous components which must be listed on the label

Ethyl acetate

Cyclohexane

n-Heptane

Isohexane

Signal word:

Danger

Pictograms:

GHS02-GHS07-GHS09





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### Hazard statements

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

### Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing vapour.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
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.
P312	Call a POISON CENTER/doctor if you feel unwell.
P273	Avoid release to the environment.

### Special labelling of certain mixtures

EUH208	Contains N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine. May produce an allergic reaction.
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### 2.3. Other hazards

Vapours may form explosive mixture with air.

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## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### Chemical characterization

Preparation in organic solvents

**Hazardous components**

EC No	Chemical name	Quantity
CAS No	Classification	
Index No	GHS classification	
REACH No		
205-500-4	Ethyl acetate	< 70 %
141-78-6	F - Highly flammable, Xi - Irritant R11-36-66-67	
607-022-00-5	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066	
01-2119475103-46		
203-806-2	Cyclohexane	< 15 %
110-82-7	F - Highly flammable, Xn - Harmful, Xi - Irritant, N - Dangerous for the environment R11-65-38-67-50-53	
601-017-00-1	Flam. Liq. 2, Skin Irrit. 2, STOT SE 3, Asp. Tox. 1, Aquatic Acute 1 (M-Factor = 1), Aquatic Chronic 1 (M-Factor = 1); H225 H315 H336 H304 H400 H410	
01-2119463273-41		
203-523-4	Isohexane	< 10 %
107-83-5	F - Highly flammable, Xn - Harmful, Xi - Irritant, N - Dangerous for the environment R11-38-51-53-65-67	
	Flam. Liq. 2, Skin Irrit. 2, STOT SE 3, Asp. Tox. 1, Aquatic Chronic 2; H225 H315 H336 H304 H411	
205-563-8	n-Heptane	< 10 %
142-82-5	F - Highly flammable, Xn - Harmful, Xi - Irritant, N - Dangerous for the environment R11-65-38-67-50-53	
601-008-00-2	Flam. Liq. 2, Skin Irrit. 2, STOT SE 3, Asp. Tox. 1, Aquatic Acute 1 (M-Factor = 1), Aquatic Chronic 1 (M-Factor = 1); H225 H315 H336 H304 H400 H410	
01-2119457603-38		
203-777-6	n-Hexane	< 2 %
110-54-3	Repr. Cat. 3, F - Highly flammable, Xn - Harmful, Xi - Irritant, N - Dangerous for the environment R11-62-48/20-65-38-67-51-53	
601-037-00-0	Flam. Liq. 2, Repr. 2, Skin Irrit. 2, STOT SE 3, STOT RE 2, Asp. Tox. 1, Aquatic Chronic 2; H225 H361f H315 H336 H373 H304 H411	
01-2119480412-44		
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		
226-733-8	N-Cyclohexyl-N-ethylamine	< 1 %
5459-93-8	C - Corrosive, Xn - Harmful R10-20/21/22-34-52-53	
	Flam. Liq. 3, Acute Tox. 3, Acute Tox. 3, Acute Tox. 4, Skin Corr. 1B, Aquatic Chronic 3; H226 H311 H331 H302 H314 H412	
01-2119949285-29		
212-344-0	N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine	< 0,25 %
793-24-8	Xn - Harmful, N - Dangerous for the environment R22-43-50-53	
	Acute Tox. 4, Skin Sens. 1, Aquatic Acute 1 (M-Factor = 10), Aquatic Chronic 1 (M-Factor = 1); H302 H317 H400 H410	
01-2119485839-15		

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

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

Remove contaminated soaked clothing immediately.

If you feel unwell, seek medical advice.

Take away from danger area and lay down affected person.

**After inhalation**

Move to fresh air in case of accidental inhalation of vapours or decomposition products.

In the event of symptoms refer for medical treatment.

**After contact with skin**

Wash off 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**

Do not induce vomiting.

Summon a doctor immediately.

Induce vomiting only upon the advice of a physician.

Attention. Beware, danger of aspiration.

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

Causes serious eye irritation.

Causes skin irritation.

May cause drowsiness or dizziness.

Attention. Beware, danger of aspiration.

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

Treat symptoms.

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**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**

Foam, carbon dioxide (CO<sub>2</sub>), 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 (CO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>).

**5.3. Advice for firefighters**

Use breathing apparatus with independent air supply.

Protective suit.

**Additional information**

Vapours are heavier than air and spread along ground.

The vapour/air mixture is explosive, even in empty, uncleaned receptacles.

Cool containers at risk with water spray jet.

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

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**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

In case of vapour formation use respirator.

Use only explosion-proof equipment.

Ensure adequate ventilation.

Use personal protective clothing.

Keep away sources of ignition.

**6.2. Environmental precautions**

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

**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.  
Keep a good ventilation and air-exhaust at the place of work.  
Avoid contact with skin, eyes and clothing.

#### Advice on protection against fire and explosion

Keep away from heat and sources of ignition.  
Do not smoke.  
Take precautionary measures against static discharges.  
Use only explosion-proof equipment.

### 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.  
Pay attention to anti-explosion rules.

#### Advice on storage compatibility

Incompatible with:  
Oxidizing agents  
Nitrous acid and other nitrosating agents.

#### 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 <sup>3</sup>	fibres/ml	Category	Origin
110-82-7	Cyclohexane	100	350		TWA (8 h)	WEL
		300	1050		STEL (15 min)	WEL
141-78-6	Ethyl acetate	200	-		TWA (8 h)	WEL
		400	-		STEL (15 min)	WEL
142-82-5	n-Heptane	500	2085		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL
110-54-3	n-Hexane	20	72		TWA (8 h)	WEL
		-	-		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.  
Wash hands before breaks and immediately after handling the product.  
When using, do not eat, drink or smoke.  
Treat subsequently with skin cream.  
Avoid contact with skin, eyes and clothing.  
Remove and wash contaminated clothes before re-use.

### Eye/face protection

Tightly fitting goggles (EN 166).

Eye wash bottle with pure water (EN 15154).

### Hand protection

Splash protection:

Protective gloves resistant to chemicals made off butyl, minimum coat thickness 0,7 mm, permeation resistance (wear duration) approx. 120 minutes, i.e. protective glove <Butoject 898> made by www.kcl.de.

Protective gloves resistant to chemicals made off nitrile, minimum coat thickness 0.4 mm, permeation resistance (wear duration) approx. 30 minutes, i.e. protective glove <Camatril Velours 730> 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 - viscous	
Colour:	Black	
Odour:	Ester-like	
Melting point:	< - 20 °C	
Initial boiling point and boiling range:	> 76 °C	
Flash point:	- 18 °C	
Lower explosion limits:	1,2 vol. %	
Upper explosion limits:	11,5 vol. %	
Density (at 20 °C):	0,9 g/cm <sup>3</sup>	
Water solubility: (at 20 °C)	Immiscible	
Ignition temperature:	460 °C	
Viscosity / kinematic: (at 40 °C)	> 20,5 mm <sup>2</sup> /s	
Flow time:	> 120 s	4 DIN/ISO 2431
Solvent content:	< 90 %	

### 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 oxidizing agents.

### 10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

Vapour/air mixtures are explosive at intensive warming.

Heating can release vapours which can be ignited.

### 10.5. Incompatible materials

oxidizing agents

Nitrous acid and other nitrosating agents.

### **10.6. Hazardous decomposition products**

Carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>).

An inappropriate handling, for instance major amounts of product combined with strong heat and nitrosating agents, renders possible a cleavage of nitrosamines in traces.

## **SECTION 11: Toxicological information**

### **11.1. Information on toxicological effects**

#### **Acute toxicity**

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

No toxicological data available.

Ethyl acetate

LD50/oral/rat: 4935 mg/kg

LC50/inhalation/rat: 1600 mg/l

Cyclohexane

LD50/oral/rat: 12705 mg/kg

#### **Irritation and corrosivity**

Causes skin irritation.

Causes serious eye irritation.

#### **Sensitising effects**

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

#### **STOT-single exposure**

May cause drowsiness or dizziness. (Ethyl acetate), (Cyclohexane), (Isohexane), (n-Heptane), (n-Hexane)

#### **Severe effects after repeated or prolonged exposure**

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

#### **Carcinogenic/mutagenic/toxic effects for reproduction**

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.

### **Practical experience**

#### **Other observations**

Attention. Beware, danger of aspiration!

May cause irritation of the mucous membranes.

Effects of breathing high concentrations of vapour may include: Headache, dizziness, weakness, unconsciousness.

Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons.

#### **Further information**

An inappropriate handling, for instance major amounts of product combined with strong heat and nitrosating agents, renders possible a cleavage of nitrosamines in traces.

## **SECTION 12: Ecological information**

### **12.1. Toxicity**

Ecological data are not available.

Toxic to aquatic life with long lasting effects.

Cyclohexane

EC50/Daphnia magna/48 h = 0,9 mg/l

IC50 Selenastrum capricornutum/72 h > 4 mg/l

### **12.2. Persistence and degradability**

No data available.

### **12.3. Bioaccumulative potential**

No data available.

### **12.4. Mobility in soil**

No data available.

#### **12.5. Results of PBT and vPvB assessment**

No data available.

#### **12.6. Other adverse effects**

Low 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:** UN1133  
**14.2. UN proper shipping name:** Adhesives  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
Hazard label: 3



Classification code: F1  
Limited quantity: 5 L / 30 kg  
Transport category: 2  
Hazard No: 33  
Tunnel restriction code: D/E

#### **Inland waterways transport (ADN)**

**14.1. UN number:** UN1133  
**14.2. UN proper shipping name:** Adhesives  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
Hazard label: 3



Classification code: F1  
Limited quantity: 5 L / 30 kg

#### **Marine transport (IMDG)**

**14.1. UN number:** UN1133



**14.2. UN proper shipping name:** Adhesives (n-Heptane)

**14.3. Transport hazard class(es):** 3

**14.4. Packing group:** II

Hazard label: 3



Marine pollutant: Yes

Limited quantity: 5 L / 30 kg

EmS: F-E, S-D

#### Air transport (ICAO)

**14.1. UN number:** UN1133

**14.2. UN proper shipping name:** Adhesives

**14.3. Transport hazard class(es):** 3

**14.4. Packing group:** II

Hazard label: 3



Limited quantity Passenger: Y341 / 1 L

IATA-packing instructions - Passenger: 353

IATA-max. quantity - Passenger: 5 L

IATA-packing instructions - Cargo: 364

IATA-max. quantity - Cargo: 60 L

#### **14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: yes



#### **14.6. Special precautions for user**

Handle in accordance with good industrial hygiene and safety practice.

#### **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): < 90 %

##### National regulatory information

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing.

#### **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)

10	Flammable.
11	Highly flammable.
20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
22	Harmful if swallowed.
34	Causes burns.
36	Irritating to eyes.
38	Irritating to skin.
43	May cause sensitisation by skin contact.
48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
50	Very toxic to aquatic organisms.
51	Toxic to aquatic organisms.
52	Harmful to aquatic organisms.
53	May cause long-term adverse effects in the aquatic environment.
62	Possible risk of impaired fertility.
65	Harmful: may cause lung damage if swallowed.
66	Repeated exposure may cause skin dryness or cracking.
67	Vapours may cause drowsiness and dizziness.

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

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
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.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H336	May cause drowsiness or dizziness.
H361f	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.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH208	Contains N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine. 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)

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*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*