

Safety Data Sheet

according to Regulation (EC) No 1907/2006

TIP TOP HARDENER E40

Revision date: 29.05.2019

Product code: 00156-0026

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

1.1. Product identifier

TIP TOP HARDENER E40

Art.-No.

517 8009, 525 1067, 525 1068, 525 1122, 525 1123, 525 1139, 525 1146

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: 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)
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:
Highly flammable liquid and vapour.
May cause drowsiness or dizziness.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

Ethyl acetate

Signal word: Danger

Pictograms:



Hazard statements

H225 Highly flammable liquid and vapour.
H336 May cause drowsiness or dizziness.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P243 Take action to prevent static discharges.
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 or shower.

Special labelling of certain mixtures

EUH066 Repeated exposure may cause skin dryness or cracking.
EUH204 Contains isocyanates. May produce an allergic reaction.

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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.
Vapours may form explosive mixture with air.

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

Preparation with thiophosphate in ethyl acetate

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
141-78-6	Ethyl acetate			< 75 %
	205-500-4	607-022-00-5	01-2119475103-46	
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066			
4151-51-3	Thionophosphoric acid-tris-(p-isocyanatophenyl)			< 30 %
	223-981-9		01-2119948848-16	
	Acute Tox. 4; H302			

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.

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 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.
Rinse mouth.
Summon a doctor immediately.
Induce vomiting only upon the advice of a physician.

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

May cause drowsiness or dizziness.
Repeated exposure may cause skin dryness or cracking.

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 (CO₂), dry chemical, water-spray.

Unsuitable extinguishing media

Full water jet.

5.2. Special hazards arising from the substance or mixture

Fire may produce:

Chlorinated hydrocarbons, Hydrogen cyanide (HCN), Isocyanates (NCO), Carbon monoxide (CO), carbon dioxide (CO₂), phosphorus oxides (POx) and nitrogen oxides (NOx).

5.3. Advice for firefighters

Use breathing apparatus with independent air supply.
Protective suit.

Additional information

The vapour/air mixture is explosive, even in empty, uncleaned receptacles.
Cool containers at risk with water spray jet.
Collect contaminated firefighting water separately, must not be discharged into the drains.
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.
Remove persons to safety.
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.
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 containers dry and tightly closed to avoid moisture absorption and contamination.
In case of insufficient ventilation, especially in confined areas.
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.

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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.

Hints on joint storage

Incompatible with:
Amines, Alcohols, Acids and bases.

Further information on storage conditions

Keep away from food, drink and animal feeding stuffs.

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
141-78-6	Ethyl acetate	200	-		TWA (8 h)	WEL
		400	-		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

Safety goggles with side protection (splash protection) or tightly fitting goggles (EN 166)
Eye wash bottle with pure water (EN 15154).

Hand protection

Splash protection:
Protective gloves resistant to chemicals made off nitrile, Minimum coat thickness 0.4 mm, Permeation resistance (wear duration) > 10 minutes.
Protective gloves resistant to chemicals made off butyl, minimum coat thickness 0.7 mm, permeation resistance (wear duration) > 60 minutes, i.e. protective glove <Butoject 898> 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).

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	Yellowish
Odour:	Ester-like

Test method

pH-Value:	n.d.
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Changes in the physical state

Melting point:	n.d.
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Initial boiling point and boiling range:	approx. 77 °C
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Sublimation point:	n.a.
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Softening point:	n.d.
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Flash point:	approx. - 4 °C	DIN 51755
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Flammability

Solid:	n.a.
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Gas:	n.a.
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Explosive properties

The product is considered non-explosive; nevertheless explosive vapour/air mixture can be generated.

Lower explosion limits:	2,2 vol. %
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Upper explosion limits:	11,5 vol. %
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Ignition temperature:	approx. 460 °C
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Auto-ignition temperature

Solid:	n.a.
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Gas:	n.a.
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Decomposition temperature:	n.d.
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Oxidizing properties

Not oxidising.

Vapour pressure: (at 20 °C)	approx. 97 hPa
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Density (at 20 °C):	approx. 1 g/cm ³	DIN 53217
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Bulk density:	n.a.
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Water solubility: (at 20 °C)	Reacts with water.
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Solubility in other solvents

Acetone, dichloromethane: Miscible

Partition coefficient:	n.d.
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Viscosity / dynamic: (at 20 °C)	approx. 3 mPa·s	DIN 53019
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Viscosity / kinematic:	n.d.
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Flow time:	n.d.
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Vapour density:	n.d.
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Evaporation rate:	n.d.
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Solvent separation test:	n.d.
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Solvent content:	< 75 %
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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

Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.
Reactions with strong acids and alkalies.
Reactions with alcohols.
Reactions with amines.

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

alcohols, Amines, Acids and bases.

10.6. Hazardous decomposition products

Isocyanates, chlorinated hydrocarbons, Hydrogen cyanide gas, Carbon monoxide (CO), carbon dioxide (CO₂), phosphorus oxides (PO_x) and nitrogen oxides (NO_x).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Based on available data, the classification criteria are not met.
LD₅₀/oral/rat: > 2000 mg/kg [OECD 423]
LD₅₀/dermal: No data available.
LC₅₀/inhalation: No data available.

Irritation and corrosivity

Based on available data, the classification criteria are not met.
Skin irritation (rabbit): Mildly irritating. [OECD 404]; Not classified.
Eyes irritation (rabbit): Mildly irritating. [OECD 405]; Not classified.

Sensitising effects

Contains isocyanates. May produce an allergic reaction.
Sensitization skin (guinea pig): Negative [OECD 406]

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.
Mutagenicity: Not classified. [Ames-Test: Negative, OECD 471]; [Micronucleus test: Negative, OECD 487]

STOT-single exposure

May cause drowsiness or dizziness. (Ethyl acetate)

STOT-repeated exposure

Repeated exposure may cause skin dryness or cracking.

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.

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Practical experience

Other observations

Repeated exposure may cause skin dryness or cracking.
Evaporation of solvents may cause irritation to eyes and mucous membranes.
Attention. Beware, danger of aspiration!

SECTION 12: Ecological information

12.1. Toxicity

LC50/Brachydanio rerio/96 h = No toxic effects in saturated solution. [OECD 203]
EC50/Daphnia magna/48 h = No toxic effects in saturated solution. [OECD 202]
IC50/Scenedesmus subspicatus/72 h = No toxic effects in saturated solution. [OECD 201]
EC50/Activated sludge > 10000 mg/l [OECD 209]

12.2. Persistence and degradability

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

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

Do not flush into surface water or sanitary sewer system.
The transformation with water into CO₂ and polyureas is strongly stimulated by so-called liquid crushers (ammonia, soda or alcohols, combined with liquid soap).
In aqueous systems, formation of insoluble and chemically inert (inactive) polyureas.

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; hazardous waste

Contaminated packaging

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 1133
14.2. UN proper shipping name: Adhesives

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14.3. Transport hazard class(es): 3**14.4. Packing group:** II

Hazard label: 3



Classification code: F1
 Limited quantity: 5 L / 30 kg
 Excepted quantity: E2
 Transport category: 2
 Hazard No: 33
 Tunnel restriction code: D/E

Inland waterways transport (ADN)**14.1. UN number:** UN 1133**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
 Excepted quantity: E2

Marine transport (IMDG)**14.1. UN number:** UN 1133**14.2. UN proper shipping name:** Adhesives**14.3. Transport hazard class(es):** 3**14.4. Packing group:** II

Hazard label: 3



Marine pollutant: No
 Limited quantity: 5 L / 30 kg
 Excepted quantity: E2
 EmS: F-E, S-D

Air transport (ICAO-TI/IATA-DGR)**14.1. UN number:** UN 1133**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: 1 L

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Passenger LQ:	Y341	
Excepted quantity:	E2	
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: no

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 Marpol 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**

2004/42/EC (VOC):	< 75 %
Information according to 2012/18/EU (SEVESO III):	P5c FLAMMABLE LIQUIDS

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

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Relevant H and EUH statements (number and full text)

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.
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.)