

Safety Data Sheet

according to Regulation (EC) No 1907/2006

TIP TOP HARDENER E-40

Revision date: 20.12.2023

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 E-40

Art.-No.

517 8009, 525 1067, 525 1068, 525 1069, 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)
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

Flam. Liq. 2; H225

STOT SE 3; H336

Full text of hazard statements: see SECTION 16.

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.

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Special labelling of certain mixtures

EUH066 Repeated exposure may cause skin dryness or cracking.
 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.

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

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.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
4151-51-3	223-981-9	Thionophosphoric acid-tris-(p-isocyanatophenyl)	< 30 %
	oral: ATE = 500 mg/kg		

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.

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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.

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 (PO_x) and nitrogen oxides (NO_x).

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

General advice

- Ensure adequate ventilation.
- Remove persons to safety.
- Keep away sources of ignition.

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.

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.

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No not container for disposal.

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).

Informations for disposal look up chapter 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.

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

Occupational exposure limits

CAS No	Substance	ppm	mg/m ³	fib/cm ³	Category	Origin
141-78-6	Ethyl acetate	200	734		TWA (8 h)	
		400	1468		STEL (15 min)	

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.

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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).

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

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

pH-Value: n. d.

Test method

Changes in the physical state

Melting point/freezing point: n. d.

Boiling point or initial boiling point and boiling range: approx. 77 °C

Sublimation point: n.a.

Softening point: n. d.

Flash point: approx. - 4 °C DIN 51755

Sustaining combustion: Sustaining combustion

Flammability

Solid/liquid: n.a.

Explosive properties

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

Lower explosion limits: 2,2 vol. %

Upper explosion limits: 11,5 vol. %

Auto-ignition temperature: approx. 460 °C

Self-ignition temperature

Solid: n.a.

Gas: n.a.

Decomposition temperature: n. d.

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
Bulk density:	n.a.	
Water solubility: (at 20 °C)	Reacts with water	
Solubility in other solvents		
Acetone, dichloromethane:	Miscible	
Partition coefficient n-octanol/water:	n. d.	
Viscosity / dynamic: (at 20 °C)	approx. 3 mPa·s	DIN 53019
Viscosity / kinematic:	n. d.	
Flow time:	n. d.	
Relative vapour density:	n. d.	
Evaporation rate:	n. d.	
Solvent separation test:	n. d.	
Solvent content:	< 75 %	

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

No hazardous decomposition products known.
Fire may produce:
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 hazard classes as defined in Regulation (EC) No 1272/2008

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.

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ATEmix calculated

ATE (oral) 1852 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

Irritation and corrosivity

Based on available data, the classification criteria are not met.
Repeated exposure may cause skin dryness or cracking.
Skin irritation (rabbit): Mildly irritating. [OECD 404]; Not classified.
Eyes irritation (rabbit): Mildly irritating. [OECD 405]; Not classified.

Sensitising effects

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

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

Evaporation of solvents may cause irritation to eyes and mucous membranes.

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

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

Slightly water hazardous.

Further information

Do not flush into surface water or sanitary sewer system.

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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

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

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
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

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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
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. 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

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40, Entry 75

Directive 2004/42/EC on VOC in
paints and varnishes: < 75 %Information according to Directive
2012/18/EU (SEVESO III): P5c FLAMMABLE LIQUIDS

National regulatory information

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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): 1 - slightly hazardous to water

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
Flam. Liq. 2; H225	On basis of test data
STOT SE 3; H336	Calculation method

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



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warranty regulations.

"(n.a. = not applicable; n.d. = not determined)"

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