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

1.1. Product identifier

TIP TOP HARDENER No. 8

Art.-No.

590 3790

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

Manufacturer

Company name:	TIP TOP Oberflaechenschutz Elbe GmbH
Street:	Heuweg 4
Place:	D-06886 Wittenberg
Telephone:	+49(0)3491/635-50 Telefax: +49(0)3491/635-552
Responsible Department:	Responsible for the safety data sheet: sds@gbk-ingelheim.de

Supplier

Company name:	REMA TIP TOP INDUSTRY UK LTD
Street:	Plumtree Industrial Estate, Harworth
Place:	Doncaster, DN11 8EW, South Yorkshire
Telephone:	+44 (0)1302 711233
Internet:	www.rema-tiptop.co.uk

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

GB CLP Regulation

Met. Corr. 1; H290
Acute Tox. 4; H302
Skin Corr. 1B; H314
Eye Dam. 1; H318
Skin Sens. 1; H317
Aquatic Acute 1; H400
Aquatic Chronic 1; H410

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Hazard components for labelling

Benzyl alcohol
Xylylenediamine
Triethylenetetramine
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with ethylenediamine

Signal word: Danger

Pictograms:

Hazard statements

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P260	Do not breathe vapour.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P273	Avoid release to the environment.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or 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.
P310	Immediately call a POISON CENTER/doctor.

Special labelling of certain mixtures

EUH071	Corrosive to the respiratory tract.

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

Mixture containing following substances with additives

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
57214-10-5	Formaldehyde polymer with 1,3-benzenedimethanamine and phenol			< 45 %
	500-137-0		01-2119966906-20	
	Aquatic Acute 1, Aquatic Chronic 1; H400 H410			
100-51-6	Benzyl alcohol			< 45 %
	202-859-9	603-057-00-5	01-2119492630-38	
	Acute Tox. 4, Eye Irrit. 2, Skin Sens. 1B; H302 H319 H317			
1477-55-0	Xylylenediamine			< 20 %
	216-032-5		01-2119480150-50	
	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1B, Aquatic Chronic 3; H332 H302 H314 H317 H412 EUH071			
112-24-3	Triethylenetetramine			< 20 %
	203-950-6	612-059-00-5		
	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1, Skin Sens. 1, Aquatic Chronic 3; H312 H302 H314 H318 H317 H412			
72480-18-3	4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with ethylenediamine			< 10 %
	500-253-1		01-2120766318-46	
	Acute Tox. 4, Skin Corr. 1, Eye Dam. 1, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1; H302 H314 H318 H317 H400 H410			
4097-89-6	N,N-bis(2-aminoethyl)ethylenediamine			< 5 %
	223-857-4			
	Acute Tox. 2, Acute Tox. 3, Skin Corr. 1B, Eye Dam. 1, Aquatic Chronic 3; H310 H301 H314 H318 H412			

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		
100-51-6	202-859-9	Benzyl alcohol	< 45 %
	oral: ATE 1200 mg/kg		
1477-55-0	216-032-5	Xylylenediamine	< 20 %
	inhalation: LC50 = 2,4 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); dermal: LD50 = ~ 2000 mg/kg; oral: LD50 = 930 mg/kg		
112-24-3	203-950-6	Triethylenetetramine	< 20 %
	dermal: ATE = 1100 mg/kg; oral: LD50 = 2500 mg/kg		
72480-18-3	500-253-1	4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with ethylenediamine	< 10 %
	oral: ATE = 500 mg/kg		
4097-89-6	223-857-4	N,N-bis(2-aminoethyl)ethylenediamine	< 5 %
	dermal: LD50 = 117 mg/kg; oral: LD50 = 246 mg/kg		

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove contaminated soaked clothing immediately.

Consult a physician.
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

In case of contact with skin wash off immediately with 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 out mouth and give plenty of water to drink.
Never give anything by mouth to an unconscious person.
Induce vomiting only upon the advice of a physician.
Summon a doctor immediately.

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

Harmful if swallowed or if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Corrosive to the respiratory tract.

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

Alcohol-resistant foam, dry chemical, carbon dioxide (CO2), 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 (CO2) and nitrogen oxides (NOx)

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.

Additional information

Do not release chemically contaminated water into drains, soil or surface waters. Sufficient measures must be taken to retain water used for extinguishing.
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.

For non-emergency personnel

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

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/ground water.
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.
Do not use metal containers.

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.
Avoid contact with the skin and the eyes.
Use only in thoroughly ventilated areas.

Advice on protection against fire and explosion

No special protective measures against fire required.

Advice on general occupational hygiene

Avoid contact with eyes and skin.
Wash hands before breaks and immediately after handling the product.
When using do not eat, drink or smoke.
Remove and wash contaminated clothes before re-use.

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.
Do not use metal containers.

Hints on joint storage

Incompatible with acids.

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

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
100-51-6	Benzyl alcohol			
Worker DNEL, long-term		inhalation	systemic	22 mg/m³
Worker DNEL, acute		inhalation	systemic	110 mg/m³
Worker DNEL, long-term		dermal	systemic	8 mg/kg bw/day
Worker DNEL, acute		dermal	systemic	40 mg/kg bw/day

PNEC values

CAS No	Substance	
Environmental compartment		Value
100-51-6	Benzyl alcohol	
Freshwater		1 mg/l
Marine water		0,1 mg/l
Freshwater sediment		5,27 mg/kg
Marine sediment		0,527 mg/kg
Soil		0,456 mg/kg

Additional advice on limit values

To date, no national critical limit values exist.

8.2. Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection

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

Hand protection

Chemical protective gloves made of nitrile, nitrile/cotton, butyl or neoprene, with a minimum thickness of 0.7 mm, permeation time of approx. 480 minutes.
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.
Pls. find examples in the protective gloves database under: http://bestglove.com/site/chemrest/

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:	Amine like

Changes in the physical state

Melting point/freezing point:	n.d.

Boiling point or initial boiling point and boiling range:	> 107 °C
Sublimation point:	n.a.
Softening point:	n.d.
Flash point:	> 112 °C
Flammability	
Solid/liquid:	n.a.
Explosive properties	
The product is not explosive.	
Lower explosion limits:	n.d.
Upper explosion limits:	n.d.
Auto-ignition temperature:	n.d.
Self-ignition temperature	
Solid:	n.a.
Gas:	n.a.
Decomposition temperature:	n.d.
pH-Value:	> 11
Viscosity / dynamic: (at 25 °C)	260 mPa·s
Viscosity / kinematic:	n.d.
Flow time:	n.d.
Water solubility: (at 20 °C)	Slightly miscible
Solubility in other solvents	
n.d.	
Partition coefficient n-octanol/water:	n.d.
Vapour pressure:	n.d.
Density (at 21 °C):	1,08 g/cm³
Bulk density:	n.a.
Relative vapour density:	n.d.

9.2. Other information

Information with regard to physical hazard classes

Oxidizing properties

Not oxidising.

Other safety characteristics

Solvent separation test:	n.d.
Solvent content:	0 %
Evaporation rate:	n.d.

Further 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 strong acids.
Gives off hydrogen by reaction with metals.

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

Acids.
Hydrogen, by reaction with metals.

10.6. Hazardous decomposition products

No hazardous decomposition products known.
Fire may produce:
Carbon monoxide (CO), carbon dioxide (CO2) and nitrogen oxides (NOx)

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

Acute toxicity

Harmful if swallowed.
No toxicological data available.

ATEmix calculated

ATE (oral) 955,8 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) 18,52 mg/l; ATE (inhalation dust/mist) 2,525 mg/l

Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/eye irritation: Causes serious eye damage.
Corrosive to the respiratory tract.

Sensitising effects

May cause an allergic skin reaction. (Benzyl alcohol; Xylylenediamine; Triethylenetetramine; 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with ethylenediamine)

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

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

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

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecological data are not available.
Very toxic to aquatic life with long lasting effects.

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

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

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

Hazardous water pollutant.

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 packagings are to be treated like the product itself.
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 2735
14.2. UN proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (Xylylenediamine, Triethylenetetramine)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8

Classification code:	C7
Limited quantity:	1 L / 30 kg

Excepted quantity:	E2
Transport category:	2
Hazard No:	80
Tunnel restriction code:	E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 2735
14.2. UN proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (Xylylenediamine, Triethylenetetramine)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8

Classification code:	C7
Limited quantity:	1 L / 30 kg
Excepted quantity:	E2

Marine transport (IMDG)

14.1. UN number or ID number:	UN 2735
14.2. UN proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S. (Xylylene diamine, Triethylene diamine)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8

Marine pollutant:	Yes
Limited quantity:	1 L / 30 kg
Excepted quantity:	E2
EmS:	F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 2735
14.2. UN proper shipping name:	AMINES, LIQUID, CORROSIVE, N.O.S.((Xylylene diamine, Triethylene diamine)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8

Limited quantity Passenger:	0.5 L
Passenger LQ:	Y840
Excepted quantity:	E2
IATA-packing instructions - Passenger:	851
IATA-max. quantity - Passenger:	1 L
IATA-packing instructions - Cargo:	855
IATA-max. quantity - Cargo:	30 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. 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 75

Directive 2004/42/EC on VOC in paints and varnishes:	< 45 %
Information according to Directive 2012/18/EU (SEVESO III):	E1 Hazardous to the Aquatic Environment

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):	2 - obviously hazardous to water

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 2,3,6,7,8,9,10,11,12,13,14,15.

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 GB CLP Regulation

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data
Acute Tox. 4; H302	Calculation method
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method
Skin Sens. 1; H317	Calculation method
Aquatic Acute 1; H400	Calculation method
Aquatic Chronic 1; H410	Calculation method

Relevant H and EUH statements (number and full text)

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
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.
EUH071	Corrosive to the respiratory tract.

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