

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

### 1.1. Product identifier

TIP TOP HARDENER No. 1

**Art.-No.**

590 0019, 590 0112, 590 0181, 590 0356, 590 1238

### 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: TIP TOP Oberflächenschutz Elbe GmbH

Street: Heuweg 4

Place: D-06886 Wittenberg

Telephone +49(0)3491/635-50

Telefax +49(0)3491/635-552

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)  
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: O - Oxidizing, T - Toxic, N - Dangerous for the environment

R phrases:

May cause fire.

Harmful in contact with skin and if swallowed.

Toxic by inhalation.

Causes burns.

Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

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

Harmful: may cause lung damage if swallowed.

#### **GHS classification**

Hazard categories:

Flammable liquid: Flam. Liq. 3

Organic peroxide: Org. Perox. F

Acute toxicity: Acute Tox. 3

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Corr. 1B

Serious eye damage/eye irritation: Eye Dam. 1

Specific target organ toxicity - single exposure: STOT SE 3

Specific target organ toxicity - repeated exposure: STOT RE 2

Aspiration hazard: Asp. Tox. 1

Hazardous to the aquatic environment: Aquatic Chronic 2

Hazard Statements:

Flammable liquid and vapour.

Heating may cause a fire.

Toxic if inhaled.

May be fatal if swallowed and enters airways.

Harmful if swallowed or in contact with skin.

May cause respiratory irritation.

Causes severe skin burns and eye damage.

May cause damage to organs through prolonged or repeated exposure.

Toxic to aquatic life with long lasting effects.

### 2.2. Label elements

## Hazardous components which must be listed on the label

Dimethylbenzyl hydroperoxide

Cumene

Signal word:

Danger

Pictograms:

GHS02-GHS05-GHS06-GHS08-GHS09



## Hazard statements

H226	Flammable liquid and vapour.
H242	Heating may cause a fire.
H331	Toxic if inhaled.
H304	May be fatal if swallowed and enters airways.
H302+H312	Harmful if swallowed or in contact with skin.
H335	May cause respiratory irritation.
H314	Causes severe skin burns and eye damage.
H373	May cause damage to organs through prolonged or repeated exposure.
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.
P260	Do not breathe 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.
P310	Immediately call a POISON CENTER/doctor.
P405	Store locked up.
P273	Avoid release to the environment.

## 2.3. Other hazards

Vapours may form explosive mixture with air.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### Chemical characterization

Cumene hydroperoxide (80%) in cumene

#### Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification	
Index No	GHS classification	
REACH No		
201-254-7	Dimethylbenzyl hydroperoxide	80 - 90 %
80-15-9	O - Oxidizing, T - Toxic, C - Corrosive, Xn - Harmful, N - Dangerous for the environment R7-23-21/22-48/20/22-34-51-53	
617-002-00-8	Org. Perox. E, Acute Tox. 3, Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, STOT RE 2, Aquatic Chronic 2; H242 H331 H302 H312 H314 H373 H411	
01-2119475796-19		
202-704-5	Cumene	10 - 20 %
98-82-8	Xn - Harmful, Xi - Irritant, N - Dangerous for the environment R10-65-37-51-53	
601-024-00-X	Flam. Liq. 3, STOT SE 3, Asp. Tox. 1, Aquatic Chronic 2; H226 H335 H304 H411	
01-2119473983-24		

Full text of R and H phrases: see Section 16.

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## **SECTION 4: First aid measures**

### **4.1. Description of first aid measures**

#### **General information**

Remove contaminated soaked clothing immediately.  
Adhere to personal protective measures when giving first aid.  
Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.

#### **After inhalation**

Supply fresh air, if required oxygen, consult a physician.  
If patient is not breathing, apply artificial respiration.  
Remove the casualty into fresh air and keep him immobile.  
In case of the person being unconscious put him/her in a stable side position.

#### **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**

Summon a doctor immediately.  
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.

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

Toxic if inhaled.  
Harmful if swallowed or in contact with skin.  
May be fatal if swallowed and enters airways.  
Causes severe skin burns and eye damage.  
May cause respiratory irritation.  
May cause damage to organs through prolonged or repeated exposure.

### **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**

Alcohol-resistant foam, dry chemical, carbon dioxide (CO<sub>2</sub>), water-spray.

#### **Unsuitable extinguishing media**

Full water jet.

### **5.2. Special hazards arising from the substance or mixture**

Fire may produce:  
Carbon monoxide and carbon dioxide.  
Hydrocarbons.

### **5.3. Advice for firefighters**

Wear self-contained breathing apparatus and protective suit.

#### **Additional information**

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.  
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**

Shovel into suitable container for disposal.

Soak up with inert absorbent material (e.g. vermiculite, clean sand).

Dilute larger quantities of desensitization agent (e.g. fuel oil) to < 10% before disposal.

## **6.4. Reference to other sections**

Observe protective instructions (see Sections 7 and 8).

Information for disposal see section 13.

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# **SECTION 7: Handling and storage**

## **7.1. Precautions for safe handling**

### **Advice on safe handling**

Wash hands before breaks and at the end of workday.

Product may only come into contact with suitable materials, such as e.g. polyethylene or high-grade steel.

Keep away from soil, rust, chemicals, strong acids and bases and accelerators.

### **Advice on protection against fire and explosion**

Keep away from sources of ignition - No smoking.

Keep away from open flames, hot surfaces and sources of ignition.

Use explosion-proof equipment / fittings and non-sparking tools.

Vapours can form an explosive mixture with air.

## **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.

Keep only in original container.

Storage temperature between 0°C to 30°C (=32°F to 86°F).

### **Advice on storage compatibility**

Storage together with other hazardous substances is not allowed.

### **Further information on storage conditions**

Keep away from food, drink and animal feeding stuffs.

## **7.3. Specific end use(s)**

Hardener

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# **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
98-82-8	Cumene	25	125		TWA (8 h)	WEL
		50	250		STEL (15 min)	WEL

## **8.2. Exposure controls**

### **Appropriate engineering controls**

Ensure adequate ventilation, especially in confined areas.

### **Protective and hygiene measures**

Avoid contact with eyes and skin.

Wash hands before breaks and immediately after handling the product.

Treat subsequently with skin cream.

When using, do not eat, drink or smoke.

Remove and wash contaminated clothing before re-use.

### **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 (EN 368).

Apron (EN 467).

### Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment (gas filter type A) (EN 141).

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## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	Clear or red
Odour:	characteristic
pH-Value (at 20 °C):	> 5 (13 g/l)
Flash point:	60 °C
Lower explosion limits:	n.d.
Upper explosion limits:	n.d.
Vapour pressure: (at 20 °C)	4 hPa
Density (at 20 °C):	1,034 g/cm <sup>3</sup>
Water solubility: (at 20 °C)	13 g/L
Partition coefficient:	((n-octanol/water)) 2,16
Ignition temperature:	n.d.
Viscosity / dynamic: (at 20 °C)	15 mPa·s
Explosive properties:	The product is considered non-explosive; nevertheless explosive vapour/air mixture can be generated.
Solvent content:	< 20 %

### 9.2. Other information

Decomposition starting from 80°C (SADT)

Active oxygen: 8,3 - 8,7%

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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No decomposition if stored normally.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Reacts with:

Soil, rust, chemicals, strong acids and bases and accelerators ( heavy metal salts, amines).

### 10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

Self-Accelerating decomposition temperature (SADT) 80°C.

### 10.5. Incompatible materials

Soil, rust, chemicals, strong acids and bases and accelerators ( heavy metal salts, amines).

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

Carbon monoxide and carbon dioxide.  
Hydrocarbons

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### **SECTION 11: Toxicological information**

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

##### **Acute toxicity**

Toxic if inhaled.  
Harmful if swallowed or in contact with skin.  
No toxicological data available.

##### **Irritation and corrosivity**

Causes severe skin burns and eye damage.

##### **Sensitising effects**

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

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

May cause respiratory irritation. (Cumene )

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

May cause damage to organs through prolonged or repeated exposure. (Dimethylbenzyl hydroperoxide)

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

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

##### **Aspiration hazard**

May be fatal if swallowed and enters airways.

##### **Additional information on tests**

Classification in compliance with the assessment procedure specified in the Regulation (EC) no 1272/2008.

##### **Practical experience**

##### **Other observations**

Danger of perforation of the gullet and of the stomach.

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### **SECTION 12: Ecological information**

#### **12.1. Toxicity**

Ecological data are not available.  
Toxic to aquatic life with long lasting effects.  
Dimethylbenzyl hydroperoxide  
LC50/Leuciscus idus = 10 - 100 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**

Hazardous water pollutant.  
Risk of drinking water contamination even when low quantities are released into the ground.

##### **Further information**

Do not flush into surface water or sanitary sewer system.

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### **SECTION 13: Disposal considerations**

#### **13.1. Waste treatment methods**

##### **Advice on disposal**

In compliance with regulations by local authorities this can be subjected to a special treatment (e.g. thermal utilization)

after dilution with an inert inflammable solvent (e.g. fuel oil) to 10%.

Where possible recycling is preferred to disposal.

**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:**

UN3109

**14.2. UN proper shipping name:**

ORGANIC PEROXIDE TYPE F, LIQUID (Dimethylbenzyl hydroperoxide)

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

5.2

Hazard label:

5.2 + 8



Classification code:

P1

Limited quantity:

125 mL / 30 kg

Transport category:

2

Hazard No:

539

Tunnel restriction code:

D

**Inland waterways transport (ADN)**

**14.1. UN number:**

UN3109

**14.2. UN proper shipping name:**

ORGANIC PEROXIDE TYPE F, LIQUID (Dimethylbenzyl hydroperoxide)

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

5.2

Hazard label:

5.2 + 8



Classification code:

P1

Limited quantity:

125 mL / 30 kg

**Marine transport (IMDG)**

**14.1. UN number:**

UN3109

**14.2. UN proper shipping name:**

ORGANIC PEROXIDE TYPE F, LIQUID (cumyl hydroperoxide)

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

5.2

**14.4. Packing group:**

-

Hazard label:

5.2 + 8



Marine pollutant:

Yes

Limited quantity:

125 mL / 30 kg

EmS:

F-J, S-R

**Air transport (ICAO)**

**14.1. UN number:**

UN3109

**14.2. UN proper shipping name:**

ORGANIC PEROXIDE TYPE F, LIQUID (cumyl hydroperoxide)

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

5.2

Hazard label:

5.2 + 8



Limited quantity Passenger:	Forbidden	
IATA-packing instructions - Passenger:		570
IATA-max. quantity - Passenger:		10 L
IATA-packing instructions - Cargo:		570
IATA-max. quantity - Cargo:		25 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): 20 %

##### **National regulatory information**

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

##### **Additional information**

Chemical prohibition regulation consider.

#### **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

#### **Full text of R phrases referred to under Sections 2 and 3**

07	May cause fire.
10	Flammable.
21/22	Harmful in contact with skin and if swallowed.
23	Toxic by inhalation.
34	Causes burns.



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- |          |  |
|----------|--|
| 37       | Irritating to respiratory system.  |
| 48/20/22 | Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. |
| 51       | Toxic to aquatic organisms.  |
| 51/53    | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.            |
| 53       | May cause long-term adverse effects in the aquatic environment.  |
| 65       | Harmful: may cause lung damage if swallowed.   |

**Full text of H statements referred to under Sections 2 and 3**

- |           |  |
|-----------|--|
| H226      | Flammable liquid and vapour.                                       |
| H242      | Heating may cause a fire.  |
| H302      | Harmful if swallowed.  |
| H302+H312 | Harmful if swallowed or in contact with skin.                      |
| H304      | May be fatal if swallowed and enters airways.                      |
| H312      | Harmful in contact with skin.                                      |
| H314      | Causes severe skin burns and eye damage.                           |
| H331      | Toxic if inhaled.  |
| H335      | May cause respiratory irritation.                                  |
| H373      | May cause damage to organs through prolonged or repeated exposure. |
| H411      | Toxic 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)

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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.)*