

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**TIP TOP HARDENER No. 2**

Revision date: 06.06.2018

Product code: 00359-1002

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

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**Art.-No.**

590 0727, 590 1166, 590 1355, 590 1362, 590 2976

**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 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 categories:  
Organic peroxide: Org. Perox. C  
Acute toxicity: Acute Tox. 4  
Skin corrosion/irritation: Skin Corr. 1B  
Serious eye damage/eye irritation: Eye Dam. 1  
Hazard Statements:  
Heating may cause a fire.  
Harmful if swallowed.  
Causes severe skin burns and eye damage.

**2.2. Label elements****Regulation (EC) No. 1272/2008****Hazard components for labelling**

Butanone peroxide  
Hydrogen peroxide

**Signal word:** Danger**Pictograms:****Hazard statements**

H242 Heating may cause a fire.  
H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.

**Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P220 Keep/Store away from Soil, rust, chemicals, strong acids and bases and accelerators (heavy metal salts, amines).

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P234	Keep only in original packaging.
P264	Wash thoroughly after handling.
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.
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.
P410	Protect from sunlight.
P411+P235	Store at temperatures not exceeding +30 °C/ °F. Keep cool.
P420	Store separately.
P501	Dispose of contents/container to in accordance with local and national regulations.

**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**

Mixture containing following substances with additives

**Hazardous components**

CAS No	Chemical name	Quantity		
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
1338-23-4	Butanone peroxide			30 - 40 %
	215-661-2		01-2119514691-43	
	Self-react. D, Acute Tox. 4, Skin Corr. 1B; H242 H302 H314			
7722-84-1	Hydrogen peroxide			1 - < 2,5 %
	231-765-0	008-003-00-9	01-2119485845-22	
	Ox. Liq. 1, Acute Tox. 4, Acute Tox. 4, Skin Corr. 1A, Eye Dam. 1, STOT SE 3, Aquatic Chronic 3; H271 H332 H302 H314 H318 H335 H412			
107-41-5	2-methylpentane-2,4-diol			1,0 - 2,5 %
	203-489-0	603-053-00-3	01-2119539582-35	
	Skin Irrit. 2, Eye Irrit. 2; H315 H319			

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.

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.



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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

Harmful if swallowed.  
Causes severe skin burns and eye damage.

#### 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 (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

Use breathing apparatus with independent air supply.  
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.

### 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.  
Do not keep container sealed.

#### 6.4. Reference to other sections

Observe protective instructions (see Sections 7 and 8).

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Information for disposal see section 13.

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

- Do not breathe vapours.
- Wash hands before breaks and at the end of workday.
- Keep away from acids, bases, heavy metal salts and reducing agents.

**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.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

- Keep only in original container.
- Keep container tightly closed in a dry, cool and well-ventilated place.
- Protect against direct sun radiation.
- Recommended storage temperature: 0°C - 30°C

**Advice on storage compatibility**

- Incompatible with:  
Reducing agents., Heavy metal salts, 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 <sup>3</sup>	fibres/ml	Category	Origin
107-41-5	2-Methylpentane-2,4-diol	25	123		TWA (8 h)	WEL
		25	123		STEL (15 min)	WEL
7722-84-1	Hydrogen peroxide	1	1.4		TWA (8 h)	WEL
		2	2.8		STEL (15 min)	WEL
1338-23-4	Methyl ethyl ketone peroxides (MEKP)	-	-		TWA (8 h)	WEL
		0.2	1.5		STEL (15 min)	WEL

**Additional advice on limit values**

No data available.

**8.2. Exposure controls****Appropriate engineering controls**

- Pay attention to anti-explosion protection rules.
- Ensure adequate ventilation, especially in confined areas.

**Protective and hygiene measures**

- Do not inhale vapours.
- Avoid contact with eyes and skin.

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Wash hands before breaks and immediately after handling the product.

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 14387).

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state:	Liquid
Colour:	Colourless, Red
Odour:	Characteristic

pH-Value:

n.d.

**Test method****Changes in the physical state**

Melting point:

n.a.

Initial boiling point and boiling range:

n.a.

Sublimation point:

n.a.

Softening point:

n.a.

Pour point:

n.a.

Flash point:

> 60 °C

**Flammability**

Solid:

n.a.

Gas:

n.a.

**Explosive properties**

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

Lower explosion limits:

n.a.

Upper explosion limits:

n.a.

Ignition temperature:

n.a.

**Auto-ignition temperature**

Solid:

n.a.

Gas:

n.a.

Decomposition temperature:

> 60 °C

Vapour pressure:

n.d.

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Density (at 20 °C):	1,12 - 1,15 g/cm <sup>3</sup>
Bulk density:	n.a.
Water solubility: (at 20 °C)	Partially miscible
<b>Solubility in other solvents</b>	
Phthalates :	
Bemerkung : Miscible	
Partition coefficient:	n.d.
Viscosity / dynamic: (at 20 °C)	9 - 15 mPa·s
Viscosity / kinematic:	n.d.
Flow time:	n.d.
Vapour density:	n.d.
Evaporation rate:	n.d.
Solvent separation test:	n.d.
Solvent content:	n.d.

**9.2. Other information**

SADT (UN-Test H.4): approx. 60°C  
Active oxygen: 9,0 - 9,3%

**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) from 60°C (SADT).

**10.5. Incompatible materials**

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

**10.6. Hazardous decomposition products**

Carbon monoxide and carbon dioxide

Hydrocarbons

**SECTION 11: Toxicological information****11.1. Information on toxicological effects**

**Acute toxicity**

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Harmful if swallowed.  
No toxicological data available.  
2-methylpentane-2,4-diol  
LD50/oral/rat: 3700 mg/kg  
LD50/dermal/rabbit: 8560 mg/kg  
Hydrogen peroxide  
LD50/oral/rat: 800 mg/kg  
LD50/dermal/rabbit: 6500 mg/kg  
ATEmix/oral: ~ 1200 mg/kg

**Irritation and corrosivity**

Causes severe skin burns and eye damage.

**Sensitising effects**

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.

**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.

**SECTION 12: Ecological information****12.1. Toxicity**

Ecological data are not available.

**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**

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 release undiluted into wastewater or drainage ditch.

Do not release undiluted or in higher quantities into the groundwater, sewerage or waters.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Advice on disposal**

Can be incinerated, when in compliance with local regulations.

Where possible recycling is preferred to disposal.

**Waste disposal number of waste from residues/unused products**

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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 3105  
**14.2. UN proper shipping name:** ORGANIC PEROXIDE TYPE D, LIQUID (Butanone peroxide)  
**14.3. Transport hazard class(es):** 5.2  
**14.4. Packing group:** -  
Hazard label: 5.2



Classification code: P1  
Limited quantity: 125 mL / 30 kg  
Excepted quantity: E0  
Transport category: 2  
Tunnel restriction code: D

#### Inland waterways transport (ADN)

**14.1. UN number:** UN 3105  
**14.2. UN proper shipping name:** ORGANIC PEROXIDE TYPE D, LIQUID (Butanone peroxide)  
**14.3. Transport hazard class(es):** 5.2  
**14.4. Packing group:** -  
Hazard label: 5.2



Classification code: P1  
Limited quantity: 125 mL / 30 kg  
Excepted quantity: E0

#### Marine transport (IMDG)

**14.1. UN number:** UN 3105  
**14.2. UN proper shipping name:** ORGANIC PEROXIDE TYPE D, LIQUID (Methyl ethyl ketone peroxide)  
**14.3. Transport hazard class(es):** 5.2  
**14.4. Packing group:** -  
Hazard label: 5.2



Marine pollutant: No  
Limited quantity: 125 mL / 30 kg



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Excepted quantity: E0  
EmS: F-J, S-R

#### Air transport (ICAO-TI/IATA-DGR)

**14.1. UN number:** UN 3105  
**14.2. UN proper shipping name:** ORGANIC PEROXIDE TYPE D, LIQUID (Methyl ethyl ketone peroxide)  
**14.3. Transport hazard class(es):** 5.2  
**14.4. Packing group:** -  
Hazard label: 5.2



Limited quantity Passenger: Forbidden  
Passenger LQ: Forbidden  
Excepted quantity: E0  
IATA-packing instructions - Passenger: 570  
IATA-max. quantity - Passenger: 5 L  
IATA-packing instructions - Cargo: 570  
IATA-max. quantity - Cargo: 10 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): 0 %  
Information according to 2012/18/EU (SEVESO III): P6b SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES

##### 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.

##### Additional information

Consider Chemical prohibition regulation.

#### 15.2. Chemical safety assessment

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

### SECTION 16: Other information

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**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

**Relevant H and EUH statements (number and full text)**

H242	Heating may cause a fire.
H271	May cause fire or explosion; strong oxidiser.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H412	Harmful 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.)*