

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

1.1. Product identifier

TIP TOP HARDENER No. 2

Art.-No.

590 0727, 590 1166, 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)

England and Wales: NHS Direct - 0845 4647; Scotland: NHS 24 - 08454 24 24

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture according to 1272/2008/EC

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

Hazardous components which must be listed on the label

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).

P234 Keep only in original container.

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/shower.

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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 away from other materials.
P501	Dispose of contents/container to in accordance with local and national regulations.

2.3. Other hazards

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, Aquatic Chronic 3; H271 H302 H332 H314 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.

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 (CO₂), 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).

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.

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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 ³	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

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.

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

Odour:

characteristic



Changes in the physical state

Flash point:	> 60 °C
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.
Decomposition temperature:	> 60 °C
Density (at 20 °C):	1,12 - 1,15 g/cm ³
Water solubility: (at 20 °C)	Partially miscible
Solubility in other solvents	Phthalates : Bemerkung : Miscible
Viscosity / dynamic: (at 20 °C)	9 - 15 mPa·s

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

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.

STOT-single exposure

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

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Severe effects after repeated or prolonged exposure

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.

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

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
Classified as 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

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

Other applicable information (land transport)

(Butanone peroxide)

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

Air transport (ICAO)

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 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

2004/42/EC (VOC): 0 %

National regulatory information

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

Water contaminating class (D): 1 - slightly water contaminating

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

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.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

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

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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.)