

# Safety Data Sheet

according to Regulation (EC) No 1907/2006



## DIE HARDENER

Revision date: 01.02.2018

Product code: 11294-0001

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

#### 1.1. Product identifier

DIE HARDENER

##### Further trade names

Article number:

540-0001,

540-0001M,

540-0006,

540-0018,

540-0250,

540-6018

REACH Registration Number: 01-2119457290-43-

CAS No: 78-93-3

Index No: 606-002-00-3

EC No: 201-159-0

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### Use of the substance/mixture

Gypsum hardener for dental use

#### 1.3. Details of the supplier of the safety data sheet

Company name: YETI Dentalprodukte GmbH

Street: Industriestrasse 3

Place: D-78234 Engen

Telephone: +49 7733-9410-0

Telefax: +49 7733-9410-22

Responsible Department: sdb@yeti-dental.com

Responsible for the safety data sheet: sds@gbk-ingelheim.de

#### 1.4. Emergency telephone

##### number:

+49 7733-9410-0 (Mo-Do 8:00 - 16:30, Fr 8:00 - 15:00)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Regulation (EC) No. 1272/2008

Hazard categories:

Flammable liquid: Flam. Liq. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Specific target organ toxicity - single exposure: STOT SE 3

Hazard Statements:

Highly flammable liquid and vapour.

Causes serious eye irritation.

May cause drowsiness or dizziness.

#### 2.2. Label elements

##### Regulation (EC) No. 1272/2008

##### Hazard components for labelling

Butanone

Signal word:

Danger

Pictograms:



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### Hazard statements

H225 Highly flammable liquid and vapour.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.

### Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

### Special labelling of certain mixtures

EUH066 Repeated exposure may cause skin dryness or cracking.

### Additional advice on labelling

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

### 2.3. Other hazards

According to Regulation (EC) No 1907/2006 (REACH), this product is regarded to be neither PBT nor vPvB. Vapours may form explosive mixture with air.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

#### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
78-93-3	Butanone			< 100 %
	201-159-0	606-002-00-3	01-2119457290-43-	
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066			

Full text of H and EUH statements: see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Remove contaminated soaked clothing immediately. Keep warm and calm injured person. 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.

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.

#### 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. Summon a doctor immediately. Induce vomiting only upon the advice of a physician.

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Administer active charcoal (slurry with 20 - 40 grams with a ratio of 10:1). Do not administer milk or digestible oils!

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

Causes serious eye irritation. May cause drowsiness or dizziness. Repeated exposure may cause skin dryness or cracking.

Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing. Liver and renal damage is possible. Risk of pulmonary oedema.

### **4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptoms.

Laxan: sodium sulfate (1 tablespoon / 250 ml of water)

If necessary, rinse out the stomach.

## **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

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

Use breathing apparatus with independent air supply.

Protective suit.

### **Additional information**

Vapours are heavier than air and spread along ground. The vapour/air mixture is explosive, even in empty, uncleaned receptacles. Risk of bursting of the receptacle. 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. Get unprotected persons to safety. Keep away from heat and sources of ignition. Avoid contact with the skin and the eyes. Do not inhale vapour/aerosol.

### **6.2. Environmental precautions**

Do not discharge into the drains/surface waters/ground water. Risk of explosion.

### **6.3. Methods and material for containment and cleaning up**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder). Shovel into suitable container for disposal. Clean contaminated surface thoroughly. Take measures against electrostatic charging.

### **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. Do not breathe vapours. Use only in thoroughly ventilated areas. Avoid contact with skin, eyes and clothing.

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

Do not smoke - volatile. Keep away from heat and sources of ignition. Take precautionary measures against

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static discharges. Use only explosion-proof equipment. Vapours may form explosive mixture with air. Ignitable mixtures can form in the empty container.

### Further information on handling

Take off contaminated clothing and wash it before reuse. Preventive skin protection recommended. Wash hands before breaks and after work.

### 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.

#### Advice on storage compatibility

Incompatible with oxidizing agents.

#### Further information on storage conditions

Use only in well-ventilated areas. Keep containers tightly closed in a cool, well-ventilated place. Protect from heat and direct solar radiation. (> 40 °C)

### 7.3. Specific end use(s)

Gypsum hardener for dental use

## 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
78-93-3	Butan-2-one (methyl ethyl ketone)	200	600		TWA (8 h)	WEL
		300	899		STEL (15 min)	WEL

#### Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
78-93-3	Butan-2-one	butan-2-one	70 µmol/L	urine	Post shift

### 8.2. Exposure controls



#### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over the use of personal protective equipment.

#### 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. Take off immediately all contaminated clothing.

#### Eye/face protection

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

#### Hand protection

Splash protection: Protective gloves resistant to chemicals made off butyl, minimum coat thickness 0.7 mm, permeation resistance (wear duration) > 240 minutes, i.e. protective glove <Butoject 898> made by www.kcl.de.

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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 (EN 368). Wear fire retardant protective coveralls. Take precautions against electrostatic discharges.

### Respiratory protection

In case of vapour / mist formation use respirator. (Full mask, filter A).

### Environmental exposure controls

Do not empty into drains. Explosion risk.

## SECTION 9: Physical and chemical properties

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

Physical state:	Liquid
Colour:	Colourless
Odour:	Solvent-like

#### Test method

pH-Value (at 20 °C):	Neutral
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### Changes in the physical state

Melting point:	- 86 °C
Initial boiling point and boiling range:	(1013 hPa) ~ 80 °C
Sublimation point:	Not determined
Softening point:	Not determined
Pour point:	Not determined
:	Not determined

Flash point:	~ - 4 °C	DIN 51755
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Sustaining combustion:	No data available
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### Flammability

Solid:	Not determined
Gas:	Not determined

### Explosive properties

In use, may form flammable/explosive vapour-air mixture. Heating will cause pressure rise with risk of bursting.

Lower explosion limits:	1,8 vol. %
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Upper explosion limits:	11,5 vol. %
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Ignition temperature:	514 °C	DIN 51794
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### Auto-ignition temperature

Solid:	Not determined
Gas:	Not determined

Decomposition temperature:	Not determined
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### Oxidizing properties

Not determined.

Vapour pressure: (at 20 °C)	105 hPa
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Vapour pressure:	Not determined
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Density (at 20 °C):	0,805 g/cm <sup>3</sup> berechnet
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Bulk density:	Not determined
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Water solubility: (at 20 °C)	292 g/L
<b>Solubility in other solvents</b>	
Not determined	
Partition coefficient:	Not determined
Viscosity / dynamic:	Not determined
Viscosity / kinematic:	Not determined
Flow time:	Not determined
Vapour density:	Not determined
Evaporation rate:	Not determined
Solvent separation test:	Not determined
Solvent content:	100 %

### **9.2. Other information**

Solid content: 0%

No data available.

## **SECTION 10: Stability and reactivity**

### **10.1. Reactivity**

No decomposition if stored and applied as directed.

Formations of peroxides possible. In use, may form flammable/explosive vapour-air mixture. Uncleaned empty vessels may contain product gases which can form explosive mixtures with air.

### **10.2. Chemical stability**

Sensitive to light.

Sensitive to air.

### **10.3. Possibility of hazardous reactions**

Reactions with oxidizing agents.

Reactions with alkalies.

Reacts with: Chromium(VI) oxide.

### **10.4. Conditions to avoid**

Vapour/air mixtures are explosive at intensive warming.

Heating can release vapours which can be ignited.

### **10.5. Incompatible materials**

Oxidizing agents (strong), Chromium(VI) oxide, strong bases.

Plastics may be corroded.

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

Peroxides, Carbon monoxide and carbon dioxide

## **SECTION 11: Toxicological information**

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

#### **Acute toxicity**

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

nausea.

Vomiting.

Aspiration hazard.

Hazard of lung oedema.

Risk of pneumonia.

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
78-93-3	Butanone				
	oral	LD50 mg/kg	3400	Rat	OECD 401
	dermal	LD50 mg/kg	> 8000	Rabbit	Value from literature

### Irritation and corrosivity

Causes serious eye irritation.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

### Sensitising effects

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

Negative (Guinea pig, IUCLID)

### Carcinogenic/mutagenic/toxic effects for reproduction

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

### STOT-single exposure

May cause drowsiness or dizziness. (Butanone)

### STOT-repeated exposure

Repeated exposure may cause skin dryness or cracking.

### Aspiration hazard

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

### Further information

After absorption of large amounts: disorders of the central nervous system, dizziness, intoxication, drop in blood pressure, anaesthesia. Leads to functional disorders of the respiratory tract and the heart. It is generally the case following inhalation of vapours/aerosols containing ketones that irritation of the mucous membranes, coughing, and shortness of breath may arise. The absorption of large amounts leads to central nervous system depression (anaesthesia). Following repeated contact with the skin, a degreasing effect with possible secondary infection may arise. Toxic effects to the liver and kidneys cannot be excluded following high doses. There is a risk of oedema developing in the respiratory tract following inhalation of the droplets. Handle in accordance with good industrial hygiene and safety practices.

## SECTION 12: Ecological information

### 12.1. Toxicity

Toxicological data refer to pure product.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
78-93-3	Butanone					
	Acute fish toxicity	LC50 mg/l	3220	96 h	Pimephales promelas	IUCLID
	Acute algae toxicity	ErC50 mg/l	1150		(16 h, Pseudomonas putida)	IUCLID
	Acute crustacea toxicity	EC50 mg/l	5091	48 h	Daphnia magna	IUCLID

### 12.2. Persistence and degradability

Readily biodegradable.

Theoretical oxygen demand (ThOD): 2440 mg/g (Value from literature)

BOD/ThBOD: BSB5 76 % (IUCLID)

COD/ThBOD: 95 % (Value from literature)

### 12.3. Bioaccumulative potential

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Partition coefficient (n-octanol/water) log Pow: 0,29  
There is no indication of bioaccumulation potential.

### 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

Do not flush into surface water or sanitary sewer system.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### **Advice on disposal**

In accordance with regulations for special waste, must be taken to a special waste disposal. Should not be disposed of with household waste. Do not empty into drains.  
Keep in closed original container. Do not mix with other products.

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

160508 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; discarded organic chemicals consisting of or containing hazardous substances; hazardous waste

#### **Contaminated packaging**

Empty containers should be taken for local recycling, recovery or waste disposal.  
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.  
Contaminated packagings are to be treated like the product itself.

## SECTION 14: Transport information

### **Land transport (ADR/RID)**

**14.1. UN number:** UN 1193  
**14.2. UN proper shipping name:** ETHYL METHYL KETONE (METHYL ETHYLKETONE)  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
Hazard label: 3



Classification code: F1  
Limited quantity: 1 L  
Excepted quantity: E2  
Transport category: 2  
Hazard No: 33  
Tunnel restriction code: D/E

### **Inland waterways transport (ADN)**

**14.1. UN number:** UN 1193  
**14.2. UN proper shipping name:** ETHYL METHYL KETONE (METHYL ETHYLKETONE)  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
Hazard label: 3



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Classification code: F1  
Limited quantity: 1 L  
Excepted quantity: E2

### Marine transport (IMDG)

**14.1. UN number:** UN 1193  
**14.2. UN proper shipping name:** ETHYL METHYL KETONE (METHYL ETHYLKETONE)  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
Hazard label: 3



Special Provisions: -  
Limited quantity: 1 L  
Excepted quantity: E2  
EmS: F-E, S-D

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

**14.1. UN number:** UN 1193  
**14.2. UN proper shipping name:** ETHYL METHYL KETONE (METHYL ETHYLKETONE)  
**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. 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): 100 %

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Information according to 2012/18/EU  
(SEVESO III):

P5c FLAMMABLE LIQUIDS

### National regulatory information

Employment restrictions:

Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

Water contaminating class (D):

1 - slightly water contaminating

### 15.2. Chemical safety assessment

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

## SECTION 16: Other information

### Changes

Update 2018

### Abbreviations and acronyms

ADR: Accord européen relatif au transport international des marchandises Dangereuses par Route  
(Agreement concerning the international carriage of Dangerous goods by Road)

IMDG-Code: International Maritime Code for Dangerous Goods

ICAO: International Civil Aviation Organisation (IATA: The International Air Transport Association)

GHS: Globally Harmonized System of Classification, Labelling and Packaging of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS-Nr.: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

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

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

EUH066 Repeated exposure may cause skin dryness or cracking.

### 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)