

Trade name: HARDENER

Current version : 4.0.2, issued: 01.11.2022

Replaced version: 4.0.1, issued: 29.01.2019

Region: GB

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

Trade name

HARDENER**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses of the substance or mixture

Hardener

Uses advised against

No data available.

1.3 Details of the supplier of the safety data sheet

Address

SCAN-DIA GmbH
Luetkenheider Strasse 11
58099 Hagen
GermanyTelephone no. +49 (0) -2331-62469-0
Fax no. +49 (0) -2331-62469-29
e-mail info@scan-dia.com

Advice on Safety Data Sheet

sdb_info@umco.de

1.4 Emergency telephone numberFor medical advice (in German and English):
+49 (0)551 192 40 (Giftinformationszentrum Nord)**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

Classification in accordance with Regulation (EC) No 1272/2008 (CLP)

Acute Tox. 4; H302
Eye Dam. 1; H318
Flam. Liq. 3; H226
Ox. Liq. 1; H271
Skin Corr. 1B; H314

Classification information

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:

Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP

Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3, 4 and 5 of Annex I to CLP.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)**

Hazard pictograms



GHS02



GHS03



GHS05



GHS07

Signal word

Danger

Hazardous component(s) to be indicated on label:

2-Butanone, peroxide

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Hazard statement(s)

H226 Flammable liquid and vapour.
 H271 May cause fire or explosion; strong oxidiser.
 H302 Harmful if swallowed.
 H314 Causes severe skin burns and eye damage.

Precautionary statement(s)

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.
 P310 Immediately call a POISON CENTER/doctor.
 P370+P378 In case of fire: Use water spray, carbon dioxide, dry chemical or foam to extinguish.
 P371+P380+P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
 P501 Dispose of contents/container to a facility in accordance with local and national regulations.

2.3 Other hazards

PBT assessment
 The components of this product are not considered to be a PBT.
 vPvB assessment
 The components of this product are not considered to be a vPvB.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Not applicable. The product is not a substance.

3.2 Mixtures**Hazardous ingredients**

No	Substance name		Additional information	
	CAS / EC / Index / REACH no	Classification (EC) 1272/2008 (CLP)	Concentration	%
1	2-Butanone, peroxide			
	1338-23-4 215-661-2 - 01-2119514691-43	Acute Tox. 4; H302 Skin Corr. 1B; H314 Org. Perox. D; H242 Eye Dam. 1; H318	>= 25.00 - < 50.00	wt%
2	4-hydroxy-4-methylpentan-2-one			
	123-42-2 204-626-7 603-016-00-1 -	Eye Irrit. 2; H319	>= 10.00 - < 25.00	wt%
3	hydrogen peroxide solution			
	7722-84-1 231-765-0 008-003-00-9 -	Acute Tox. 4*; H302 Acute Tox. 4*; H332 Ox. Liq. 1; H271 Skin Corr. 1A; H314	< 5.00	wt%
4	butanone			
	78-93-3 201-159-0 606-002-00-3 -	EUH066 Eye Irrit. 2; H319 Flam. Liq. 2; H225 STOT SE 3; H336	< 5.00	wt%

Full Text for all H-phrases and EUH-phrases: pls. see section 16

(*, **, ***, ****) Detailed explanation pls. refer to CLP regulation No. 1272/2008, annex VI, 1.2

No	Note	Specific concentration limits	M-factor (acute)	M-factor (chronic)
2	-	Eye Irrit. 2; H319: C >= 10%	-	-

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3	B	Eye Irrit. 2; H319: C >= 5% Eye Dam. 1; H318: C >= 8% Skin Irrit. 2; H315: C >= 35% STOT SE 3; H335: C >= 35% Ox. Liq. 2; H272: C >= 50% Skin Corr. 1B; H314: C >= 50% Ox. Liq. 1; H271: C >= 70% Skin Corr. 1A; H314: C >= 70%	-	-
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Full text for the notes: pls. see section 16 "Notes relating to the identification, classification and labelling of substances ((EC) No 1272/2008, Annex VI)".

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

In all cases of doubt, or when sickness symptoms persist, seek medical attention. If the patient is likely to become unconscious, place and transport in stable sideways position. Never give anything by mouth to an unconscious person.

After inhalation

Remove affected person from the immediate area. Ensure supply of fresh air. Call a doctor immediately.

After skin contact

Remove contaminated clothing immediately and dispose of safely. When in contact with the skin, clean with soap and water. Call a doctor immediately.

After eye contact

Remove contact lenses, irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart and seek medical advice.

After ingestion

Call a doctor immediately. Rinse the mouth thoroughly with water. Do not induce vomiting - aspiration hazard.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Dry chemical extinguisher; Alcohol-resistant foam; Water spray jet; Carbon dioxide

Unsuitable extinguishing media

High power water jet

5.2 Special hazards arising from the substance or mixture

In the event of fire, the following can be released: Toxic pyrolysis products; Corrosive gases/vapours; Caution: re-ignition may occur.

5.3 Advice for firefighters

Use self-contained breathing apparatus. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations. Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Keep away from ignition sources. Use personal protective clothing.

For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions

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Prevent spread over a wide area (e.g. by containment or oil barriers). Do not discharge into the subsoil/soil. Do not discharge into the drains/surface waters/groundwater. In case of entry into waterways, soil or drains, inform the responsible authorities.

6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g., sand, kieselguhr, universal binder). Dispose of absorbed material in accordance with the regulations.

6.4 Reference to other sections

Information regarding safe handling, see section 7. Information regarding personal protective measures, see section 8. Information regarding waste disposal, see section 13.

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

Provide good ventilation at the work area (local exhaust ventilation, if necessary). Provide suitable exhaust ventilation at processing machines. Use explosion-proof apparatus and fittings. Avoid contact with skin and eyes. Handle with care - avoid bumps, friction and impact. Take precautionary measures against electrostatic loading.

General protective and hygiene measures

Do not eat or drink during work - no smoking. Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs. Avoid product contact with skin, eyes and clothing; Store work clothing separately. Remove soiled or soaked clothing immediately.

7.2 Conditions for safe storage, including any incompatibilities**Technical measures and storage conditions**

Keep only in the original container in a cool, well ventilated place. Protect from heat and direct sunlight. Store in a dry place. Store upright. Adhere to BGV B4 for "Organic peroxides" (German standard).

Recommended storage temperature

Value	max.	25	°C
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Incompatible products

Do not store together with: heavy metal compounds; Reducing agents; Acids; Alkalis; flammable toxic substances; corrosives

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Occupational exposure limit values**

No	Substance name	CAS no.	EC no.
1	2-Butanone, peroxide	1338-23-4	215-661-2
List of approved workplace exposure limits (WELs) / EH40			
Methylethylketoneperoxides			
	WEL short-term (15 min reference period)	1.5	0.2 ppm
		mg/m ³	
2	4-hydroxy-4-methylpentan-2-one	123-42-2	204-626-7
List of approved workplace exposure limits (WELs) / EH40			
4-Hydroxy-4-methyl-pentan-2-one			
	WEL short-term (15 min reference period)	362	75 ppm
	WEL long-term (8-hr TWA reference period)	241	50 ppm
		mg/m ³	
3	hydrogen peroxide solution	7722-84-1	231-765-0
List of approved workplace exposure limits (WELs) / EH40			
Hydrogen peroxide			
	WEL short-term (15 min reference period)	2.8	2 ppm
	WEL long-term (8-hr TWA reference period)	1.4	1 ppm
		mg/m ³	
4	butanone	78-93-3	201-159-0
2000/39/EC			
Butanone			

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	WEL short-term (15 min reference period)	900	mg/m ³	300	ppm
	WEL long-term (8-hr TWA reference period)	600	mg/m ³	200	ppm
List of approved workplace exposure limits (WELs) / EH40					
Butan-2-one					
	WEL short-term (15 min reference period)	899	mg/m ³	300	ppm
	WEL long-term (8-hr TWA reference period)	600	mg/m ³	200	ppm
	Comments	Sk, BMGV			

DNEL, DMEL and PNEC values**DNEL values (worker)**

No	Substance name			CAS / EC no	
	Route of exposure	Exposure time	Effect	Value	
1	2-Butanone, peroxide			1338-23-4 215-661-2	
	dermal	Long term (chronic)	systemic	1.33	mg/kg
	inhalative	Long term (chronic)	systemic	2.35	mg/m ³

DNEL value (consumer)

No	Substance name			CAS / EC no	
	Route of exposure	Exposure time	Effect	Value	
1	2-Butanone, peroxide			1338-23-4 215-661-2	
	oral	Long term (chronic)	systemic	0.33	mg/kg/day
	dermal	Long term (chronic)	systemic	0.67	mg/kg
	inhalative	Long term (chronic)	systemic	0.5	mg/m ³

8.2 Exposure controls**Appropriate engineering controls**

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL (=Occupational Exposure Limit), suitable respiratory protection must be worn.

Personal protective equipment**Respiratory protection**

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of aerosol, vapour and mist formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified. Short term: filter apparatus, Filter A

Eye / face protection

Tightly fitting safety glasses (EN 166). Face shield

Hand protection

Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Appropriate Material butyl rubber

Material thickness 0.5 mm

Breakthrough time >= 8 h

Other

Normal chemical work clothing. protective overalls

Environmental exposure controls

Do not empty into drains.

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

State of aggregation
liquid

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Form	
liquid	
Colour	
colourless, clear	
Odour	
characteristic	
pH value	
No data available	
Boiling point / boiling range	
Not applicable	
Comments	Decomposition
Melting point/freezing point	
Value	< -25 °C
Decomposition temperature	
Value	60 °C
Comments	SADT: 60°C
Flash point	
Value	> 57 °C
Ignition temperature	
No data available	
Auto-ignition temperature	
Not applicable	
Oxidising properties	
Oxidizing agents	
Explosive properties	
Product does not present an explosion hazard.	
Flammability	
No data available	
Lower explosion limit	
No data available	
Upper explosion limit	
No data available	
Vapour pressure	
Value	0.184 Pa
Reference temperature	25 °C
Relative vapour density	
No data available	
Relative density	
No data available	
Density	
Value	1.01 g/ml
Reference temperature	20 °C
Solubility in water	
Value	6.5 g/l
Reference temperature	20 °C
Solubility	
No data available	

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Partition coefficient n-octanol/water (log value)

No data available

Kinematic viscosity

Value	13	mPa*s
Reference temperature	20	°C

Particle characteristics

No data available

9.2 Other information**Other information**

No data available.

SECTION 10: Stability and reactivity**10.1 Reactivity**

No data available.

10.2 Chemical stability

Stable if stored and handled properly.

10.3 Possibility of hazardous reactions

Decomposition at higher temperatures is possible. When heating the product, explosive vapour-air mixtures can be formed.

10.4 Conditions to avoid

Heat, naked flames and other ignition sources.

10.5 Incompatible materials

Product reacts with: strong acids; strong bases; heavy metal compounds; Reducing agents

10.6 Hazardous decomposition products

In case of fire the following can be released: Hazardous decomposition products: Irritant gases/vapours; Corrosive gases/vapours; Flammable gases/vapours; Toxic gases/vapours

SECTION 11: Toxicological information**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute oral toxicity (result of the ATE calculation for the mixture)****No Product Name**

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ATE (Mixture)	1256.28
Method	Calculation method according Regulation (EC) No 1272/2008, (CLP), annex I, part 3, section 3.1.3.6.

Acute oral toxicity

No data available

Acute dermal toxicity

No data available

Acute inhalational toxicity (result of the ATE calculation for the mixture)**No Product Name**

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Comments	The result of the applied calculation method according to the European Regulation (EC) 1272/2008 (CLP), Paragraph 3.1.3.6, Part 3 of Annex I is outside the values that imply a classification / labelling of this mixture according to table 3.1.1 defining the respective categories (ATE for inhalation: > 20.000 ppmV (gases), > 20 mg/l (vapours), > 5 mg/l (dusts/mists)).
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Acute inhalational toxicity

No data available

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Skin corrosion/irritation
No data available
Serious eye damage/irritation
No data available
Respiratory or skin sensitisation
No data available
Germ cell mutagenicity
No data available
Reproduction toxicity
No data available
Carcinogenicity
No data available
STOT - single exposure
No data available
STOT - repeated exposure
No data available
Aspiration hazard
No data available
Delayed and immediate effects as well as chronic effects from short and long-term exposure
Symptoms of poisoning can occur after several hours. Product is caustic.

11.2 Information on other hazards

Endocrine disrupting properties

No data available.

Other information

No data available.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish (acute)
No data available
Toxicity to fish (chronic)
No data available
Toxicity to Daphnia (acute)
No data available
Toxicity to Daphnia (chronic)
No data available
Toxicity to algae (acute)
No data available
Toxicity to algae (chronic)
No data available
Bacteria toxicity
No data available

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

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No data available.

12.5 Results of PBT and vPvB assessment**Results of PBT and vPvB assessment**

PBT assessment	The components of this product are not considered to be a PBT.
vPvB assessment	The components of this product are not considered to be a vPvB.

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No data available.

12.8 Other information**Other information**

Do not allow to enter soil, waterways or waste water canal.
Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Remove in accordance with local official regulations.

Waste code 12 01 09* machining emulsions and solutions free of halogens

The listed waste code numbers, according to the European Waste Catalogue, are to be understood as a recommendation. A final decision must be made in agreement with the regional waste disposal company.

Packaging

Uncontaminated packaging may be reused. Packaging that cannot be cleaned should be disposed off as product waste. Dispose of in accordance with federal, state and local regulations.

SECTION 14: Transport information**14.1 Transport ADR/RID/ADN**

Class	5.2
Classification code	P1
UN number	UN3105
Proper shipping name	ORGANIC PEROXIDE TYPE D, LIQUID
Tunnel restriction code	D
Label	5.2

14.2 Transport IMDG

Class	5.2
UN number	UN3105
Proper shipping name	ORGANIC PEROXIDE TYPE D, LIQUID
EmS	F-J, S-R
Label	5.2

14.3 Transport ICAO-TI / IATA

Class	5.2
UN number	UN3105
Proper shipping name	Organic peroxide type D, liquid
Label	5.2

14.4 Other information

No data available.

14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

No data available.

14.7 Maritime transport in bulk according to IMO instruments

Not relevant

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SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
EU regulations**Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)**

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

REACH candidate list of substances of very high concern (SVHC) for authorisation

According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES

The product is considered being subject to REACH regulation (EC) 1907/2006 annex XVII. No 3, 40

The product contains following substance(s) that are considered being subject to REACH regulation (EC) 1907/2006 annex XVII.

No	Substance name	CAS no.	EC no.	No
1	4-hydroxy-4-methylpentan-2-one	123-42-2	204-626-7	75
2	butanone	78-93-3	201-159-0	75
3	hydrogen peroxide solution	7722-84-1	231-765-0	75

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This product is subject to Part I of Annex I, risk category: P5c, P8

If the properties of the substance/product give rise to more than one classification, for the purposes of 2012/18/UE, the lowest qualifying quantities set out in Part 1 and Part 2 of Annex I shall apply.

Other regulations

Observe employment restrictions for women of child-bearing age.
Observe employment restrictions for child bearing mothers and nursing mothers.
Observe employment restrictions for young people.

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this mixture.

SECTION 16: Other information**Sources of key data used to compile the data sheet:**

Directives 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164.

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

National Threshold Limit Values of the corresponding countries as amended in each case.

Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)

EUH066	Repeated exposure may cause skin dryness or cracking.
H225	Highly flammable liquid and vapour.
H242	Heating may cause a fire.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.

Notes relating to the identification, classification and labelling of substances and mixtures ((EC) No 1272/2008, Annex VI)

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B Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid ... %'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.

Creation of the safety data sheet

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This information is based on our present knowledge and experience.

The safety data sheet describes products with a view to safety requirements.

It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

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