

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 15.06.2015

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Revision: 15.06.2015

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

- **1.1 Product identifier**
  - **Trade name:** MEKP-Härter
  - **1.2 Relevant identified uses of the substance or mixture and uses advised against** Not determined
  - **Application of the substance / the mixture** Hardening agent/ Curing agent
  - **1.3 Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**  
Vosschemie GmbH  
Esinger Steinweg 50  
D-25436 Uetersen  
Phone: +49 (0)4122 717 0; Fax: +49 (0)4122 717158; info@vosschemie.de
  - **Further information obtainable from:**  
Abteilung Labor / +49 (0)4122 717 0  
s.schaller@vosschemie.de
  - **1.4 Emergency telephone number:**  
Giftinformationszentrum (GIZ)-Nord, Goettingen, Deutschland  
Phone: +49 (0)551 19240
- 

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.

Org. Perox. CD H242 Heating may cause a fire.



GHS05 corrosion

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Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

STOT SE 3 H335 May cause respiratory irritation.

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

The product is classified and labelled according to the CLP regulation.

**Hazard pictograms**


GHS02



GHS05



GHS07

**Signal word Danger**
**Hazard-determining components of labelling:**

2-Butanone, peroxide

4-hydroxy-4-methylpentan-2-one

hydrogen peroxide solution

tributylamine

**Hazard statements**

H226 Flammable liquid and vapour.

H242 Heating may cause a fire.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

**Precautionary statements**

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260 Do not breathe mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P220 Keep/Store away from clothing/combustible materials.

P234 Keep only in original container.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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**2.3 Other hazards**

Risk of serious damage to eyes.

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*Flammable.**Risk of fire on contact with combustible substances or other substances effective in promoting the decomposition reaction.**Fire propagating effect due to oxygen release.**Thermal decomposition with temperatures above 60 °C (SADT)**Pls. refer to section 10***· Results of PBT and vPvB assessment****· PBT:** Not applicable.**· vPvB:** Not applicable.**SECTION 3: Composition/information on ingredients****· 3.2 Chemical characterisation: Mixtures****· Description:** Mixture of substances listed below with nonhazardous additions.**· Dangerous components:**

CAS: 131-11-3 EINECS: 205-011-6 Reg.nr.: 01-2119437229-36	dimethyl phthalate	25-50%
CAS: 1338-23-4 EC number: 700-954-4 Reg.nr.: 01-2119514691-43	2-Butanone, peroxide ⚠ Org. Perox. CD, H242; ⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302	25-50%
CAS: 123-42-2 EINECS: 204-626-7 Reg.nr.: 01-2119473975-21	4-hydroxy-4-methylpentan-2-one ⚠ Flam. Liq. 3, H226; ⚠ Eye Irrit. 2, H319; STOT SE 3, H335	10-25%
CAS: 78-93-3 EINECS: 201-159-0 Reg.nr.: 01-2119457290-43	butanone ⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	1.0-6.0%
CAS: 7722-84-1 EINECS: 231-765-0 Reg.nr.: 01-2119485845-22	hydrogen peroxide solution ⚠ Ox. Liq. 1, H271; ⚠ Skin Corr. 1A, H314; Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332; STOT SE 3, H335	1.0-4.0%
CAS: 102-82-9 EINECS: 203-058-7	tributylamine ⚠ Acute Tox. 2, H310; Acute Tox. 1, H330; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315	0.1-1.0%

**· Additional information:** For the wording of the listed risk phrases refer to section 16.**SECTION 4: First aid measures****· 4.1 Description of first aid measures****· General information:***Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.**Personal protection for the First Aider.**Take affected persons out of danger area and lay down.**In case of irregular breathing or respiratory arrest provide artificial respiration.**Immediately remove any clothing soiled by the product.***· After inhalation:***Remove person to fresh air and keep comfortable for breathing.**Supply fresh air or oxygen; call for doctor.**In case of unconsciousness place patient stably in side position for transportation.*

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- **After skin contact:**  
Immediately wash with water and soap and rinse thoroughly.  
Seek immediate medical advice.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. Then consult a doctor.  
Call a doctor immediately.
- **After swallowing:**  
Rinse mouth.  
Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture**  
Formation of toxic gases is possible during heating or in case of fire.  
In case of fire, the product promotes combustion.  
May decompose explosively in absence of fire due to formation of vapour-air-mixture.
- **5.3 Advice for firefighters**
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Do not inhale explosion gases or combustion gases.
- **Additional information**  
Remove undamaged containers from the danger zone.  
Cool endangered receptacles with water spray.  
Collect contaminated fire fighting water separately. It must not enter the sewage system.  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Use suitable respiratory protective device in case of insufficient ventilation.  
Avoid contact with the eyes and skin.  
Keep away from ignition sources.  
Pls. refer to section 10
- **6.2 Environmental precautions:**  
Do not allow to enter sewers/ surface or ground water.  
Inform respective authorities in case of seepage into water course or sewage system.
- **6.3 Methods and material for containment and cleaning up:**  
Collect with an inert, non-combustible, absorbent material (i.e. sand, diatomaceous earth, acid binder, universal binder).  
Do not seal receptacle gas tight.  
Dispose contaminated material as waste according to item 13.  
Pls. refer to section 10

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**· 6.4 Reference to other sections***See Section 7 for information on safe handling.**See Section 8 for information on personal protection equipment.**See Section 13 for disposal information.***SECTION 7: Handling and storage****· 7.1 Precautions for safe handling***Keep receptacles tightly sealed.**Open and handle receptacle with care.**Do not return unused material to original containers – decomposition hazard!**Restrict the quantity stored at the work place.**Resistant to inert materials only.**Suitable materials: Stainless steel (DIN 1.4571), PVC, polyethylene, glass-lined apparatus.**Keep apart from dirt, rust, chemicals, especially reducing substances, acids, alkaline solutions, amines and heavy metal compounds (such as accelerator, desiccative, metal soaps). Avoid naked flames, sparks, other ignition sources and sunlight.**Avoid any direct contact with accelerators.**Weigh out and mix separately when processing polyester resins.**Avoid storage in containers with an airtight closure to prevent hazardous pressure build-up due to an eventual decomposition.**Avoid contact with the eyes and skin.**Ensure good ventilation/exhaustion at the workplace.**Do not inhale gases / fumes / aerosols.**Adhere to the workplace limit values and / or other threshold values.***· Information about fire - and explosion protection:***Protect from heat.**Protect from sunlight.**Prevent impact and friction.**Thermal decomposition with temperatures above 60 °C under formation of explosive vapours/gases**Avoid naked flames, sparks, other ignition sources and sunlight.**Protect against electrostatic charges.**Anti-explosion protection required**Fumes can combine with air to form an explosive mixture.**Fire propagating effect due to oxygen release.**Keep apart from incompatible substances, dirt and high temperatures.**Pls. refer to section 10***· 7.2 Conditions for safe storage, including any incompatibilities****· Storage:****· Requirements to be met by storerooms and receptacles:***Store in a cool location.**Store only in the original receptacle.**Prevent any seepage into the ground.**Adhere to the provisions of the Law on Water Protection.**Use only receptacles specifically permitted for this substance/product.***· Information about storage in one common storage facility:***Keep apart from other chemicals, in particular from accelerators.**Store away from foodstuffs.***· Further information about storage conditions:***Store in cool, dry conditions in well sealed receptacles.**Protect from heat and direct sunlight.*

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- Protect from contamination.
- Store receptacle in a well ventilated area.
- Store under lock and key and out of the reach of children.
- **Recommended storage temperature:** 10 - <30 °C
- **7.3 Specific end use(s)** No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

**131-11-3 dimethyl phthalate**

WEL (Great Britain)	Short-term value: 10 mg/m <sup>3</sup> Long-term value: 5 mg/m <sup>3</sup>
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**123-42-2 4-hydroxy-4-methylpentan-2-one**

WEL (Great Britain)	Short-term value: 362 mg/m <sup>3</sup> , 75 ppm Long-term value: 241 mg/m <sup>3</sup> , 50 ppm
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**78-93-3 butanone**

WEL (Great Britain)	Short-term value: 899 mg/m <sup>3</sup> , 300 ppm Long-term value: 600 mg/m <sup>3</sup> , 200 ppm Sk, BMGV
IOELV (EU)	Short-term value: 900 mg/m <sup>3</sup> , 300 ppm Long-term value: 600 mg/m <sup>3</sup> , 200 ppm

**7722-84-1 hydrogen peroxide solution**

WEL (Great Britain)	Short-term value: 2.8 mg/m <sup>3</sup> , 2 ppm Long-term value: 1.4 mg/m <sup>3</sup> , 1 ppm
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· **DNELs**

**131-11-3 dimethyl phthalate**

Oral	Long-term exposure - systemic effects	25 mg/kg bw/day (general population)
Dermal	Long-term exposure - systemic effects	60 mg/kg bw/day (general population) 100 mg/kg bw/day (worker)
Inhalative	Long-term exposure - systemic effects	87 mg/m <sup>3</sup> (general population) 294 mg/m <sup>3</sup> (worker)

**123-42-2 4-hydroxy-4-methylpentan-2-one**

Oral	Long-term exposure - systemic effects	3.4 mg/kg bw/day (general population)
Dermal	Long-term exposure - systemic effects	3.4 mg/kg bw/day (general population) 9.4 mg/kg bw/day (worker)
Inhalative	Acute/short-term exposure - local effects	120 mg/m <sup>3</sup> (general population) 240 mg/m <sup>3</sup> (worker)
	Long-term exposure - local effects	11.8 mg/m <sup>3</sup> (general population) 66.4 mg/m <sup>3</sup> (worker)
	Long-term exposure - systemic effects	11.8 mg/m <sup>3</sup> (general population) 66.4 mg/m <sup>3</sup> (worker)

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**78-93-3 butanone**

<i>Oral</i>	<i>Long-term exposure - systemic effects</i>	<i>31 mg/kg bw/day (general population)</i>
<i>Dermal</i>	<i>Long-term exposure - systemic effects</i>	<i>412 mg/kg bw/day (general population)</i> <i>1161 mg/kg bw/day (worker)</i>
<i>Inhalative</i>	<i>Long-term exposure - systemic effects</i>	<i>106 mg/m<sup>3</sup> (general population)</i> <i>600 mg/m<sup>3</sup> (worker)</i>

**7722-84-1 hydrogen peroxide solution**

<i>Inhalative</i>	<i>Acute/short-term exposure - local effects</i>	<i>1.93 mg/m<sup>3</sup> (general population)</i> <i>3 mg/m<sup>3</sup> (worker)</i>
	<i>Long-term exposure - local effects</i>	<i>0.21 mg/m<sup>3</sup> (general population)</i> <i>1.4 mg/m<sup>3</sup> (worker)</i>

**· PNECs**

**131-11-3 dimethyl phthalate**

<i>PNEC STP</i>	<i>4 mg/l (-)</i>
<i>PNEC aqua</i>	<i>0.192 mg/l (freshwater)</i> <i>0.0192 mg/l (marine water)</i>
<i>PNEC sediment</i>	<i>1403 mg/kg (freshwater)</i>
<i>PNEC soil</i>	<i>3.16 mg/kg (soil dw)</i>

**123-42-2 4-hydroxy-4-methylpentan-2-one**

<i>PNEC STP</i>	<i>82 mg/l (-)</i>
<i>PNEC aqua</i>	<i>2 mg/l (freshwater)</i> <i>0.2 mg/l (marine water)</i>
<i>PNEC sediment</i>	<i>9.06 mg/kg (freshwater)</i> <i>0.91 mg/kg (marine water)</i>
<i>PNEC soil</i>	<i>0.63 mg/kg (soil dw)</i>

**78-93-3 butanone**

<i>PNEC STP</i>	<i>709 mg/l (-)</i>
<i>PNEC aqua</i>	<i>55.8 mg/l (freshwater)</i> <i>55.8 mg/l (marine water)</i> <i>55.8 mg/l (intermittent releases)</i>
<i>PNEC oral</i>	<i>1000 mg/kg (-)</i>
<i>PNEC sediment</i>	<i>284.74 mg/kg (freshwater)</i> <i>284.7 mg/kg (marine water)</i>
<i>PNEC soil</i>	<i>22.5 mg/kg (-)</i>

**7722-84-1 hydrogen peroxide solution**

<i>PNEC STP</i>	<i>4.66 mg/l (-)</i>
<i>PNEC aqua</i>	<i>0.0126 mg/l (freshwater)</i> <i>0.0126 mg/l (marine water)</i>

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**· Ingredients with biological limit values:****78-93-3 butanone**

BMGV (Great Britain)	70 µmol/L Medium: urine Sampling time: post shift Parameter: butan-2-one
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· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Wash contaminated clothing before reuse.
- Avoid contact with the eyes and skin.
- Do not eat, drink, smoke or sniff while working.
- Use skin protection cream for skin protection.

· **Respiratory protection:**

- Ensure good ventilation/exhaustion at the workplace.
- Use suitable respiratory protective device in case of insufficient ventilation.
- In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- Filter A/P2

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- Neoprene gloves
- PVC gloves
- Synthetic rubber gloves

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

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· **Body protection:** Protective work clothing

**SECTION 9: Physical and chemical properties**

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· <b>Form:</b>	Fluid
· <b>Colour:</b>	Colourless
· <b>Odour:</b>	Acrid

· **pH-value at 20 °C:** 4.7

· **Change in condition**

· <b>Melting point/Melting range:</b>	Undetermined.
· <b>Boiling point/Boiling range:</b>	Undetermined.

· **Flash point:** 55 °C (ISO 3679)

· **Ignition temperature:**

· **Decomposition temperature:** 62 °C (SADT)

· **Self-igniting:** Pls. refer to section 10

· **Danger of explosion:** Pls. refer to section 10

· **Vapour pressure at 20 °C:** 20 hPa

· **Density at 20 °C:** ~ 1.1 g/cm<sup>3</sup>

· **Solubility in / Miscibility with water:** Partly miscible.

· **Partition coefficient (n-octanol/water):** Not determined

· **Viscosity:**

· <b>Dynamic at 20 °C:</b>	16 mPas
· <b>Kinematic:</b>	Not determined

· **9.2 Other information** No further relevant information available.

**SECTION 10: Stability and reactivity**

· **10.1 Reactivity** No decomposition if used according to specifications.

· **10.2 Chemical stability**

No decomposition if used and stored according to specifications.

Resistant to inert materials only.

Suitable materials: Stainless steel (DIN 1.4571), PVC, polyethylene, glass-lined apparatus.

· **10.3 Possibility of hazardous reactions**

Thermal decomposition or direct contact with numerous additives, such as reducing agents (i.e. amine accelerator), heavy metal compounds (in particular cobalt accelerators), acids and alkaline solutions, may lead to hazardous, autoaccelerating decomposition reactions, and possibly, to explosion or fire.

· **10.4 Conditions to avoid**

Protect from heat.

Avoid naked flames, sparks, other ignition sources and sunlight.

To avoid thermal decomposition do not overheat.

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Thermal decomposition with temperatures above 60 °C (SADT)

· **10.5 Incompatible materials:**

Keep apart from dirt, rust, chemicals, especially reducing substances, acids, alkaline solutions, amines and heavy metal compounds (such as accelerator, desiccative, metal soaps)

Avoid any direct contact with accelerators.

· **10.6 Hazardous decomposition products:**

Formation of various organic degradation products and inflammable and explosive vapours/gases upon decomposition.

Danger of forming toxic pyrolysis products.

**SECTION 11: Toxicological information**

· **11.1 Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values relevant for classification:**

**131-11-3 dimethyl phthalate**

Oral	LD 50	>2400 mg/kg (rat)
Dermal	LD50	> 10000 mg/kg (rabbit)
Inhalative	LC50 /6h	9.3 mg/l (-)

**1338-23-4 2-Butanone, peroxide**

Oral	LD 50	1017 mg/kg (rat)
Dermal	LD50	4000 mg/kg (rabbit)
Inhalative	LC 50 / 4h	17 mg/l (rat)

**123-42-2 4-hydroxy-4-methylpentan-2-one**

Oral	LD50	3002 mg/kg (rat) (OECD 401)
Dermal	LD 50	> 1875 mg/kg (rat) (OECD 402)
	LD50	13630 mg/kg (rab)
Inhalative	LC 50 / 4h	> 7.6 mg/l (rat) (OECD 403)
	LC50 /4h	500-1900 mg/m <sup>3</sup> (mouse)

**78-93-3 butanone**

Oral	LD50	> 2193 mg/kg (rat)
Dermal	LD50	5000 mg/kg (rabbit)
Inhalative	LC50 /4h	34 mg/m <sup>3</sup> (rat)

**7722-84-1 hydrogen peroxide solution**

Oral	LD50	693.7 mg/kg (rat)
Inhalative	LC 50 / 4h	> 0.17 mg/l (rat)

**102-82-9 tributylamine**

Oral	LD50	420 mg/kg (rat)
Dermal	LD50	> 2000 mg/kg (rat)
		190 mg/kg (rabbit) ((100%))
Inhalative	LC50 /4h	0.5 mg/l (rat) (OECD 403, vapour)

· **Primary irritant effect:**

· **on the skin:** Caustic effect on skin and mucous membranes.

· **on the eye:** Strong irritant with the danger of severe eye injury.

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**· Subacute to chronic toxicity:****131-11-3 dimethyl phthalate**

Oral	NOAEL	1000 mg/kg (rat) (bw/day, 24 month)
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**123-42-2 4-hydroxy-4-methylpentan-2-one**

Oral	NOAEL	300 mg/kg (rat) (6 weeks, liver, kidney)
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Inhalative	LOAEL	0.48 mg/l (human)
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	NOAEL	1.041 mg/l (rat) (6 weeks, liver, kidney)
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**· Additional toxicological information:**

May cause respiratory irritation.

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

**· Sensitisation** No sensitising effects known.**· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)****· Carcinogenicity****1338-23-4 2-Butanone, peroxide**

Oral	NOAEL (carcinogenicity)	50 mg/kg (rat) (F1, OECD 421)
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**123-42-2 4-hydroxy-4-methylpentan-2-one**

Oral	NOAEL (carcinogenicity)	100 mg/kg (rat) (44 d)
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Inhalative	NOAEL (carcinogenicity)	1.84 mg/l (rat)
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**· Reproductive toxicity/Fertility****123-42-2 4-hydroxy-4-methylpentan-2-one**

Oral	NOAEL (fertility)	30-100 mg/kg (rat, parents) (OECD 422)
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		300 mg/kg (rat, F1) (OECD 422)
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Inhalative	NOAEL (fertility)	4.1 mg/l (rat, parents) (OECD 416)
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		4.1 mg/l (rat, F1) (OECD 416)
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**· Reproductive toxicity/Teratogenicity****131-11-3 dimethyl phthalate**

Oral	NOAEL (developmental toxicity)	3570 mg/kg (rat) (OECD 414)
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	NOAEL (maternally)	840 mg/kg (rat) (OECD 414)
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**123-42-2 4-hydroxy-4-methylpentan-2-one**

Inhalative	NOAEL (teratogenicity)	4.1 mg/l (rat) (OECD 414)
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**SECTION 12: Ecological information****· 12.1 Toxicity****· Aquatic toxicity:****131-11-3 dimethyl phthalate**

EC10/72h	193.09 mg/l ( <i>desmodesmus subspicatus</i> )
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EC50/48h	33 mg/l ( <i>daphnia magna</i> )
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EC50/72h	259.76 mg/l ( <i>desmodesmus subspicatus</i> )
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EC50/96h	39.9 mg/l ( <i>algae</i> ) ( <i>Raphidocelis subcapitata</i> )
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LC50/96h	50 mg/l ( <i>Lepomis macrochirus</i> )
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NOEC	39 mg/l ( <i>pimephales promelas</i> ) 9.6 mg/l ( <i>daphnia magna</i> ) (21 d) 11 mg/l ( <i>oncorhynchus mykiss</i> ) (102 d)
<b>1338-23-4 2-Butanone, peroxide</b>	
EC50/48h	39 mg/l ( <i>daphnia magna</i> )
EC50/72h	5.6 mg/l ( <i>Pseudokirchneriella subcapitata</i> )
LC50/96h	44.2 mg/l ( <i>poecilia reticulata</i> )
NOEC	2.1 mg/l ( <i>Pseudokirchneriella subcapitata</i> )
<b>123-42-2 4-hydroxy-4-methylpentan-2-one</b>	
EC50	9016 mg/l ( <i>daphnia</i> ) (24h, OECD 203)
EC50/0.5h	17 mg/l (activated sludge)
EC50/48h	> 1000 mg/l ( <i>daphnia magna</i> ) (OECD 202)
EC50/72h	> 100 mg/l ( <i>Pseudokirchneriella subcapitata</i> ) (OECD 201)
LC50/96h	420 mg/l ( <i>Lepomis macrochirus</i> ) > 100 mg/l ( <i>Oryzias latipes</i> ) (OECD 203)
NOEC	100 mg/l ( <i>Pseudokirchneriella subcapitata</i> ) (OECD 201, 72h)
NOEC (aqua chron.)	> 100 mg/l ( <i>daphnia magna</i> ) (21 d)
NOEL	825 mg/l ( <i>pseudomonas putida</i> )
TGK = toxicity threshold concentration	825 mg/l ( <i>pseudomonas putida</i> ) (16h, inhibition test)
<b>78-93-3 butanone</b>	
EC50/48h	308 mg/l ( <i>daphnia magna</i> )
LC50/96h	3220 mg/l ( <i>Lepomis macrochirus</i> ) 2993 mg/l ( <i>pimephales promelas</i> )
<b>7722-84-1 hydrogen peroxide solution</b>	
EC50/48h	2.4 mg/l ( <i>daphnia</i> )
EC50/72h	1.38 mg/l ( <i>Skeletonema costatum</i> )
LC50/96h	16.4 mg/l ( <i>pimephales promelas</i> )
NOEC	0.63 mg/l ( <i>daphnia magna</i> ) (21 d) 0.63 mg/l ( <i>Skeletonema costatum</i> ) (72 h)
<b>102-82-9 tributylamine</b>	
EC10/72h	1.4 mg/l ( <i>desmodesmus subspicatus</i> )
EC50/72h	1.4 mg/l ( <i>desmodesmus subspicatus</i> ) (DIN 38412)
LC50	> 10 mg/l ( <i>danio rerio</i> ) (28 d) 8 mg/l ( <i>daphnia magna</i> ) (48 h)
NOEC	0.315 mg/l ( <i>danio rerio</i> ) (28 d)

**12.2 Persistence and degradability**

Easily biodegradable

**131-11-3 dimethyl phthalate**

Biodegradation 96-98 % (-) (28d, OECD 301 E)

**1338-23-4 2-Butanone, peroxide**

Biodegradation 87 % (-) (28 d)

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**123-42-2 4-hydroxy-4-methylpentan-2-one**

Biodegradation 98.51 % (-) (OECD 301A, 28d)

**7722-84-1 hydrogen peroxide solution**

Biodegradation &gt; 99 % (-) (30 min)

**· 12.3 Bioaccumulative potential****131-11-3 dimethyl phthalate**BCF 57 (*Lepomis macrochirus*) (21 day, OECD 305)

log Kow 1.56 (-) (OECD 107)

**1338-23-4 2-Butanone, peroxide**

log Kow &lt; 0.3 (-) (OECD 117)

**123-42-2 4-hydroxy-4-methylpentan-2-one**

BCF 0.5 (-)

log Kow -0.09 (-)

**78-93-3 butanone**

Kow 2 (-)

log Kow 0.3 (-)

**7722-84-1 hydrogen peroxide solution**

log Kow -1.57 (-)

**· Behaviour in environmental systems:****· 12.4 Mobility in soil****131-11-3 dimethyl phthalate**

log Koc 1.57 (-)

**123-42-2 4-hydroxy-4-methylpentan-2-one**

Koc 3.32 (-)

log Koc 0.52 (-)

**78-93-3 butanone**

Koc 3.8 (-)

log Koc 0.6 (-)

**· Additional ecological information:**· **General notes:** Do not allow product to reach ground water, water course or sewage system.**· 12.5 Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.· **12.6 Other adverse effects** No further relevant information available.**SECTION 13: Disposal considerations****· 13.1 Waste treatment methods****· Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Disposal must be made according to official regulations.

Dilute product with suitable inert liquid to a peroxide concentration below 10% and subsequently dispose of according to the refuse disposal act.

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· **Waste disposal key:**

The waste codes given above are to be considered recommendations; because of regional and industrial sector specific features, application of different waste codes is possible.

· **European waste catalogue**

16 05 06*	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals
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· **Uncleaned packaging:**· **Recommendation:** Disposal must be made according to official regulations.**SECTION 14: Transport information**· **14.1 UN-Number**· **ADR, IMDG, IATA** UN3105· **14.2 UN proper shipping name**

· **ADR** 3105 ORGANIC PEROXIDE TYPE D, LIQUID (2-Butanone, peroxide)  
· **IMDG, IATA** ORGANIC PEROXIDE TYPE D, LIQUID (2-Butanone, peroxide)

· **14.3 Transport hazard class(es)**· **ADR, IMDG, IATA**· **Class** 5.2 Organic peroxides.· **Label** 5.2· **14.4 Packing group**· **ADR** Void· **IMDG, IATA** II· **14.5 Environmental hazards:**· **Marine pollutant:** No· **14.6 Special precautions for user**

Warning: Organic peroxides.

· **EMS Number:** F-J,S-R· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**· **ADR**· **Limited quantities (LQ)** 125 ml

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### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations:**
- **Information about limitation of use:**  
Employment restrictions concerning juveniles must be observed.  
Employment restrictions concerning pregnant and lactating women must be observed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**  
H225 Highly flammable liquid and vapour.  
H226 Flammable liquid and vapour.  
H242 Heating may cause a fire.  
H271 May cause fire or explosion; strong oxidiser.  
H302 Harmful if swallowed.  
H310 Fatal in contact with skin.  
H314 Causes severe skin burns and eye damage.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H319 Causes serious eye irritation.  
H330 Fatal if inhaled.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.  
H336 May cause drowsiness or dizziness.
- **Department issuing MSDS:** Abteilung Labor
- **Contact:** Frau S. Schaller
- **Abbreviations and acronyms:**  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
ICAO: International Civil Aviation Organisation  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
DNEL: Derived No-Effect Level (REACH)  
PNEC: Predicted No-Effect Concentration (REACH)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
Flam. Liq. 2: Flammable liquids, Hazard Category 2  
Flam. Liq. 3: Flammable liquids, Hazard Category 3  
Ox. Liq. 1: Oxidising Liquids, Hazard Category 1  
Org. Perox. CD: Organic Peroxides, Types C, D  
Acute Tox. 4: Acute toxicity, Hazard Category 4  
Acute Tox. 2: Acute toxicity, Hazard Category 2  
Acute Tox. 1: Acute toxicity, Hazard Category 1  
Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

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*Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B**Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2**Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1**Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2**STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3****· \* Data compared to the previous version altered.***

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