



## 1. Identification of the substance/preparation and of the company/undertaking

**Product name** STANDOX  
HARDENER

**Product code** 000004024669829181

**Intended use of the substance/preparation**  
Hardener for professional use

### Company/Undertaking Identification

Producer/Supplier STANDOX GmbH  
Street/Box Christbusch 45  
Nat.-Code/Postal code/City DE 42285 Wuppertal  
Telephone +49 (0)202 2530-0

### Information on SDS

Responsible Department Regulatory Affairs  
Telephone +49 (0)202 529-2385  
Telefax +49 (0)202 529-2804

### Emergency Information

Emergency telephone +44 (0)845 600-6640

**For further information, please also consult our Internet site:**  
<http://www.stadox.com>

## 2. Composition/information on ingredients

### Chemical characterization

Mixture of synthetic resins and solvents

### Hazardous components

Substances presenting a health or environmental hazard within the meaning of the DSD 67/548/EEC incl. 29. ATP

EC-No.	CAS-No.	Chemical Name	Concentration	Classification
204-626-7	123-42-2	4-hydroxy-4-methylpentan-2-one	25.00 - < 35.00 %	Xi; R36
205-500-4	141-78-6	ethyl acetate	25.00 - < 35.00 %	F; R11 Xi; R36 R66 R67
205-011-6	131-11-3	dimethyl phthalate	20.00 - < 25.00 %	
235-527-7	12262-58-7	cyclohexanone, peroxide	12.50 - < 15.00 %	Xi; R36/37/38 C; R34 Xn; R22

### Additional advice

To avoid misinterpretation in any case of risk assessment it is not allowed to accumulate the above mentioned percentages. See full text of R-phrases in chapter 16.

## 3. Hazards identification

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

### Human health hazards

Classification : corrosive; oxidising;  
Highly flammable. Causes burns. Vapours may cause drowsiness and dizziness. May cause fire.

### Special hazard instructions for humans and environment

None known.

## 4. First aid measures

### General advice

When symptoms persist or in all cases of doubt seek medical advice. Never give anything by mouth to an unconscious person.

### Inhalation

Avoid inhalation of vapour or mist. Move to fresh air in case of accidental inhalation of vapours. If breathing is irregular or stopped, administer artificial respiration. If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.

### Skin contact

Do NOT use solvents or thinners. Take off all contaminated clothing immediately. Wash skin thoroughly with soap and water or use recognized skin cleanser. If skin irritation persists, call a physician.

### Eye contact

Remove contact lenses. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. Seek medical advice.

### Ingestion

If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting. Keep at rest.

## 5. Fire-fighting measures

### Hazardous combustion products

Fire will produce dense black smoke containing hazardous combustion products (see heading 10). Exposure to decomposition products may be a hazard to health.

### Fire and Explosion Hazards

Flammable liquid. Vapours may form explosive mixtures with air. Remove all sources of ignition.

### Suitable extinguishing media

Universal aqueous film-forming foam, carbon dioxide (CO<sub>2</sub>), dry chemical, water spray.

### Extinguishing media which must not be used for safety reasons

high volume water jet

### Special Protective Equipment and Fire Fighting Procedures

Wear as appropriate: full protective flameproof clothing. Wear self contained breathing apparatus for fire fighting if necessary. In the event of fire, cool tanks with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

### Additional advice

Cool closed containers exposed to fire with water spray.

## 6. Accidental release measures

### Personal precautions

Keep in a well-ventilated place. Keep away from sources of ignition. Comply with safety directives (see chapters 7 and 8). Do not inhale vapours.

### Environmental precautions

Do not let product enter drains. Notify the respective authorities in accordance with local law in the case of contamination of rivers, lakes or waste water systems.

### Methods for cleaning up

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations. Clean preferably with a detergent; avoid use of solvents.

## 7. Handling and storage

### Safe handling advice

Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Preparation may charge electrostatically: always use grounded leads when transferring from one container to another. Operators should wear antistatic footwear and clothing. No sparking tools should be used. Avoid skin and eye contact. Do not breathe vapours or spray mist. Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8. Comply with the health and safety at work laws. If material is a coating, do not sand, flame cut, braze or weld dry coating without an appropriate respirator or appropriate ventilation, and gloves.

**Advice on protection against fire and explosion**

Solvent vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Never use pressure to empty container: container is not a pressure vessel. Always keep in containers of same material as the original one. The accumulation of contaminated rags may result in spontaneous combustion. Good housekeeping standards and regular safe removal of waste materials will minimize the risks of spontaneous combustion and other fire hazards.

**Storage****Requirements for storage areas and containers**

Observe label precautions. Store between 5 and 25°C in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage. The storage and use of this product is subject to the requirements of the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR). Up to 50 litres of such highly flammable liquids may be stored in a work area provided they are kept in a fire-proof cupboard or bin. Larger quantities must be kept in a separate storeroom conforming to the structural requirements of the regulations. Further guidance is contained in the HSE ACOP L135, "Storage of Dangerous Substances."

**Advice on common storage**

Store separately from combustible materials, reducing agents (e.g. amines), acids, alkalis and heavy metal compounds (e.g. accelerators, driers, metal soaps)

## 8. Exposure controls / personal protection

**Additional technical information on the plant**

Provide adequate ventilation. This should be achieved by a good general extraction and -if practically feasible- by the use of a local exhaust ventilation. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

**National occupational exposure limits**

CAS-No.	Chemical Name	Source	Time	Type	Value	Note
123-42-2	4-hydroxy-4-methylpentan-2-one			STEL	362 mg/m <sup>3</sup>	
				STEL	75 ppm	
				TWA	241 mg/m <sup>3</sup>	
				TWA	50 ppm	
141-78-6	ethyl acetate			STEL	400 ppm	
				TWA	200 ppm	
131-11-3	dimethyl phthalate			STEL	10 mg/m <sup>3</sup>	
				TWA	5 mg/m <sup>3</sup>	

**Protective equipment**

Personal protective equipment should be worn to prevent contact with eyes, skin or clothing.

**Respiratory protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**Hand protection**

Chemical Name	Glove material	Glove thickness	Break through time
ethyl acetate	nitrile rubber	0.33 mm	10 min
	Viton <sup>®</sup>	0.7 mm	480 min

The protective glove should be checked in each case for their work specific suitability (e.g. mechanical stability, product compatibility, and anti-static properties). When the intended use is for spray application a nitrile glove of the chemical resistance group 3 (e.g. Dermatril<sup>®</sup> glove) is to be used. After contamination, the glove has to be changed. If immersing the hands into the product is not avoidable (e.g. maintenance work) a butyl or fluorocarbon rubber glove should be used. When skin exposure may occur to materials specified in chapter 2 of this SDS, advice should be sought from the glove supplier as to appropriate type to

use with this product and the permeation breakthrough times. Care should be taken when working with sharp edged articles as these can easily damage the gloves and make them ineffective. The instructions and information provided by the glove supplier on use, storage, maintenance and replacement must be followed. Damaged gloves or those showing signs of wear should be replaced immediately.

#### Eye protection

Wear protective eyewear for protection against solvent spatter.

#### Skin protection

Wear suitable protective clothing. Personnel should wear antistatic clothings made of natural fiber or of high temperature resistant synthetic fiber.

#### Hygiene measures

Wash skin thoroughly with soap and water or use recognized skin cleanser. Do not use organic solvents!

#### Environmental exposure controls

Do not let product enter drains. For ecological information refer to chapter 12.

## 9. Physical and chemical properties

#### General information (appearance)

Physical state: liquid    Colour: clear

#### Important health, safety and environmental information

	Value	Method
Flash point	5 °C	DIN 53213/ISO1523
Autoignition temperature	427 – 460 °C	DIN 51794
Boiling point/range	77 – 172 °C	
Lower explosion limit	1.8 %	
Upper explosion limit	11.2 %	
Vapour pressure	32.4 hPa	
Relative density	1.02 g/cm <sup>3</sup>	DIN 53217/ISO 2811
Water solubility	appreciable	
Viscosity (23 °C)	Not applicable.	ISO 2431-1993
Solvent separation test	< 3%	ADR/RID
Content of volatile components (including water)	66.0%	Basis Vapour pressure >= 0.01 kPa
pH	Not applicable.	
Conductivity	0 μS/m	

## 10. Stability and reactivity

#### Stability

Stable

#### Conditions to avoid

Stable under recommended storage and handling conditions (see section 7).

#### Materials to avoid

Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

#### Hazardous decomposition products

When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide and dioxide, smoke, benzoic acid, benzene, diphenyl, phenylbenzoate; for cyclohexanone peroxides, hexane carbonic acid, lauric carbon acid, cyclohexane.

## 11. Toxicological information

#### General observations

There are no data available on the product itself. The product is classified and labelled in accordance with EC directives or respective national laws. See sections 2 and 15 for details.

**Practical experience**

Not applicable.

Toxicity Test Type	Value	Time	Species
4-hydroxy-4-methylpentan-2-one			
Oral LD50	4,000 mg/kg		rat
Dermal LD50	13,610 mg/kg		rabbit
ethyl acetate			
Oral LD50	5,600 mg/kg		rat
Dermal LD50	> 20 ml/kg		rabbit
Inhalation LC50	29.4 mg/l	4 h	rat
cyclohexanone, peroxide			
Oral LD50	720 mg/kg		rat

**12. Ecological information**

There are no data available on the product itself. The product should not be allowed to enter drains or watercourses.

**Mobility**

No information available.

**Persistence and degradability**

No information available.

**Bioaccumulative potential**

No information available.

**Other adverse effects**

The preparation was evaluated in accordance with the conventional method of the preparation directive 1999/45/EG and was not classified as environmental dangerous.

**13. Disposal considerations**

Dispose of in accordance with local regulations.

**Product:**

Recommendation:

A disposal process that converts the waste into energy is recommended. If this is not possible the hazardous waste must be disposed of by incineration.

Waste Key Number	Description
08 01 11	waste paint and varnish containing organic solvents or other dangerous substances

**Uncleaned packaging:**

Recommendation:

Properly emptied containers are to be scrap processed or reconditioned. Improperly emptied containers are considered hazardous waste (waste key number 150110). Waste, including emptied containers, is controlled waste. Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. If fully drained containers are compacted they can be regarded as Controlled Waste and disposed of in accordance with the requirements of the Control of Pollution Act 1974 and the Environmental Protection Act 1990 (GB), the Pollution Control and Local Government (NI) Order 1978 (NI) or of the EC (Waste) Regulations 1979 and the EC (Toxic &amp; Dangerous Waste) Regulations 1982 (IRL).

**14. Transport information**

Transport only in accordance with the requirements of the Carriage of Dangerous Goods by Road and Rail (Classification, Packaging and Labeling), ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport.

**ADR/RID (Land transport)**

Proper shipping name: ORGANIC PEROXIDE TYPE E, LIQUID

UN-No: 3107

Hazard Class: 5.2

Subsidiary Hazard Class: Not applicable.

Packing group:

Special Provision:

Hazchem:

**IMDG (Sea transport)**

Proper shipping name: ORGANIC PEROXIDE TYPE E, LIQUID

UN-No: 3107  
Hazard Class: 5.2  
Subsidiary Hazard Class: Not applicable.  
Packing group:  
Marine Pollutant: N  
EmS: F-J,S-R**ICAO/IATA (Air transport)**

Proper shipping name: ORGANIC PEROXIDE TYPE E, LIQUID

UN-No: 3107  
Hazard Class: 5.2  
Subsidiary Hazard Class: Not applicable.  
Packing group:

## 15. Regulatory information

In accordance with the CHIP Regulations 2002 the product is labelled as follows:

**Symbol and indicating of hazard**

O	Oxidising
F	Highly flammable
C	Corrosive

**R-phrase(s)**

R11	Highly flammable.
R34	Causes burns.
R67	Vapours may cause drowsiness and dizziness.
R7	May cause fire.

**S-phrase(s)**

S23	Do not breathe gas/fumes/vapour/spray.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S33	Take precautionary measures against static discharges.
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
S38	In case of insufficient ventilation, wear suitable respiratory equipment.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**National legislation**

This safety datasheet has been prepared according to British legislation.

The product is labeled according to the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 as amended (CHIP Regulations). The risk associated with the use of this product must be assessed in accordance with the Control of Substances Hazardous to Health (COSHH) Regulations and the Dangerous Substances and Explosive Atmospheres Regulations.

## 16. Other information

Full text of R phrases with no. appearing in section 2



R11	Highly flammable.
R22	Harmful if swallowed.
R34	Causes burns.
R36	Irritating to eyes.
R36/37/38	Irritating to eyes, respiratory system and skin.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

**Information taken from reference works and the literature.**

Substance No.	CAS no: <a href="http://www.cas.org/EO/regsys.html">www.cas.org/EO/regsys.html</a> EC no: <a href="http://ecb.jrc.it/esis/index.php?PGM=ein">http://ecb.jrc.it/esis/index.php?PGM=ein</a>
Substances presenting a health or environmental hazard within the meaning of Directive 67/548/EEC.	<a href="http://ecb.jrc.it/existing-chemicals/">http://ecb.jrc.it/existing-chemicals/</a> <a href="http://ecb.jrc.it/classification-labelling/">http://ecb.jrc.it/classification-labelling/</a> <a href="http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB">http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB</a> <a href="http://www.cdc.gov/niosh/ipcs/icstart.html">http://www.cdc.gov/niosh/ipcs/icstart.html</a>
Other directives, limitations and prohibitory regulations	Directive 76/769/EC Directive 98/24/EC Directive 90/394/EC Directive 793/93/EC Directive 1999/45/EC Directive 2006/8/EC EUR-LEX: <a href="http://europa.eu.int/eur-lex/">http://europa.eu.int/eur-lex/</a>
Exposure limit for the pure substance	<a href="http://osha.europa.eu/OSHA">http://osha.europa.eu/OSHA</a>

**Training advice**

Directive 76/769/EC  
Directive 98/24/EC

**Further information**

The information of this SDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and necessary safety precautions. The information given in this SDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.

**Report version**

Version	Changes
1.0	

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