

# SAFETY DATA SHEET

## 1. PRODUCT

### 1.1 Product identifiers

Name: Luperox® TBH70X, tert-Butyl hydroperoxidesolution

CAS-No.: 75-91-2

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

Identified uses : Laboratory chemicals, Manufacture of substances

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 3), H226

Organic peroxides (Type F), H242

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 3), H331

Acute toxicity, Dermal (Category 3), H311

Skin corrosion (Category 1C), H314

Serious eye damage (Category 1), H318

Skin sensitisation (Category 1), H317


Germ cell mutagenicity (Category 2), H341

Acute aquatic toxicity (Category 2), H401

Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal word	Danger
Hazard statement(s)	H226 Flammable liquid and vapour. H242 Heating may cause a fire. H302 Harmful if swallowed. H311 + H331 Toxic in contact with skin or if inhaled. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H341 Suspected of causing genetic defects. H411 Toxic to aquatic life with long lasting effects.

<p>Precautionary statement(s)</p>	<p>P201 Obtain special instructions before use.  P202 Do not handle until all safety precautions have been read and understood.  P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  P220 Keep/Store away from clothing/ combustible materials.  P233 Keep container tightly closed.  P234 Keep only in original container.  P240 Ground/bond container and receiving equipment.  P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.  P242 Use only non-sparking tools.  P243 Take precautionary measures against static discharge.  P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  P264 Wash skin thoroughly after handling.  P270 Do not eat, drink or smoke when using this product.  P271 Use only outdoors or in a well-ventilated area.  P272 Contaminated work clothing should not be allowed out of the workplace.  P273 Avoid release to the environment.  P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  P235 Keep cool.  P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  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 or doctor/ physician.  P322 Specific measures (see supplemental first aid instructions on this label).  P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  P361 Remove/Take off immediately all contaminated clothing.  P363 Wash contaminated clothing before reuse.  P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  P391 Collect spillage.  P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  P405 Store locked up.  P410 Protect from sunlight.  P420 Store away from other materials.  P501 Dispose of contents/ container to an approved waste disposal plant.</p> <p>Pictogram</p> <p>Signal word Danger</p> <p>Hazard statement(s)</p> <p>H226 Flammable liquid and vapour.  H242 Heating may cause a fire.  H302 Harmful if swallowed.  H311 + H331 Toxic in contact with skin or if inhaled.  H314 Causes severe skin burns and eye damage.  H317 May cause an allergic skin reaction.  H318 Causes serious eye damage.  H341 Suspected of causing genetic defects.  H411 Toxic to aquatic life with long lasting effects.</p> <p>Precautionary statement(s)</p> <p>P201 Obtain special instructions before use.  P202 Do not handle until all safety precautions have been read and understood.  P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  P220 Keep/Store away from clothing/ combustible materials.  P233 Keep container tightly closed.  P234 Keep only in original container.  P240 Ground/bond container and receiving equipment.  P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.  P242 Use only non-sparking tools.  P243 Take precautionary measures against static discharge.  P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  P264 Wash skin thoroughly after handling.  P270 Do not eat, drink or smoke when using this product.  P271 Use only outdoors or in a well-ventilated area.  P272 Contaminated work clothing should not be allowed out of the workplace.  P273 Avoid release to the environment.  P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  P281 Use personal protective equipment as required.  P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.  P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.  P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.  P308 + P313 IF exposed or concerned: Get medical advice/ attention.</p>
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	<p>P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  P363 Wash contaminated clothing before reuse.  P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  P391 Collect spillage.  P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  P405 Store locked up.  P410 Protect from sunlight.  P411 + P235 Store at temperatures not exceeding .? °C/ .? °F. Keep cool.  P420 Store away from other materials.  P501 Dispose of contents/ container to an approved waste disposal plant.</p>
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### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

No data available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Mixtures

Synonyms: TBHP  
Formula:  $C_4H_{10}O_2$   
Molecular weight: 90.12 g/mol

#### Hazardous components

Component	Classification	Concentration
<b>tert-Butyl hydroperoxide</b>		
CAS-No. 75-91-2	Flam. Liq. 3; Org. Perox. F; Acute Tox. 4; Acute Tox. 2; Acute Tox. 3; Skin Corr. 1C; Eye Dam. 1; Skin Sens. 1; Muta. 2; Aquatic Acute 2; Aquatic Chronic 2; H226, H242, H302, H311, H314, H317, H330, H341, H411, H226, H242, H302, H311, H314, H317, H318, H330, H341, H411	>= 70 -< 90 %
EC-No. 200-915-7		

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

<b>General advice</b>
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
<b>If inhaled</b>
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
<b>In case of skin contact</b>
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
<b>In case of eye contact</b>
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
<b>If swallowed</b>
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.2 Indication of any immediate medical attention and special treatment needed

No data available

## 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

### **Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### **5.2 Special hazards arising from the substance or mixture**

Carbon oxides

### **5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

### **5.4 Further information**

Use water spray to cool unopened containers.

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## **6. ACCIDENTAL RELEASE MEASURES**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations.

Vapours can accumulate in low areas.

For personal protection see section 8.

### **6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### **6.3 Methods and materials for containment and cleaning up**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

### **6.4 Reference to other sections**

For disposal see section 13.

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## **7. HANDLING AND STORAGE**

### **7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. Keep away from heat and sources of ignition.

For precautions see section 2.2.

### **7.2 Conditions for safe storage, including any incompatibilities**

Store in original container. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature 2 - 8 °C

Storage class (TRGS 510): Organic peroxides and self-reacting hazardous materials

### **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1 Control parameters**

## Components with workplace control parameters

Contains no substances with occupational exposure limit values.

## 8.2 Exposure controls

### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### Personal protective equipment

Eye/face protection	Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full contact Material: Nitrile rubber Minimum layer thickness: 0.4 mm Break through time: 480 min Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M) Splash contact Material: Nitrile rubber Minimum layer thickness: 0.2 mm Break through time: 60 min Material tested: Dermatril® P (KCL 743 / Aldrich Z677388, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.
Body Protection	Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Control of environmental exposure	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Form: clear, liquid Colour: colourless, light yellow
Odour	No data available
Odour Threshold	No data available
pH	4.3
Melting point/freezing point	Melting point/range: -3 °C (27 °F) at 1,013 hPa (760 mmHg)
Initial boiling point and boiling range	96.2 °C (205.2 °F) at 1,013 hPa (760 mmHg)
Flash point	42 °C (108 °F) - closed cup
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit: 10.15 %(V) Lower explosion limit: 5.75 %(V)
Vapour pressure	30.73 hPa (23.05 mmHg) at 20 °C (68 °F)
Vapour density	No data available
Relative density	No data available
Water solubility	soluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available

Oxidizing properties	No data available
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## 9.2 Other safety information

No data available

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

Powdered metals, Organic materials

### 10.6 Hazardous decomposition products

Other decomposition products - No data available

In the event of fire: see section 5

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

<b>Acute toxicity</b>
No data available Inhalation: No data available Dermal: No data available No data available
<b>Skin corrosion/irritation</b>
No data available
<b>Serious eye damage/eye irritation</b>
No data available
<b>Respiratory or skin sensitisation</b>
No data available
<b>Germ cell mutagenicity</b>
No data available
<b>Carcinogenicity</b>
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
<b>Reproductive toxicity</b>
No data available No data available
<b>Specific target organ toxicity -single exposure</b>
No data available
<b>Specific target organ toxicity -repeated exposure</b>

No data available
<b>Aspiration hazard</b>
No data available
<b>Additional Information</b>
RTECS: Not available To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

No data available

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life with long lasting effects.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

<b>Product</b>
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
<b>Contaminated packaging</b>
Dispose of as unused product.

## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 3109 Class: 5.2 (8) Packing group: II

Proper shipping name: Organic peroxide type F, liquid (tert-Butyl hydroperoxide, 72%)

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

### IMDG

UN number: 3109 Class: 5.2 (8) EMS-No: F-J, S-R

Proper shipping name: ORGANIC PEROXIDE TYPE F, LIQUID (tert-BUTYL HYDROPEROXIDE)

### IATA

UN number: 3109 Class: 5.2 (8, HEAT)

Proper shipping name: Organic peroxide type F, liquid (tert-Butyl hydroperoxide)

## 15. REGULATORY INFORMATION

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 311/312 Hazards

Fire Hazard, Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

Component	CAS-No.	Revision Date
tert-Butyl hydroperoxide	75-91-2	1991-07-01

### Pennsylvania Right To Know Components

Component	CAS-No.	Revision Date
tert-Butyl hydroperoxide	75-91-2	1991-07-01
Water	7732-18-5	

### New Jersey Right To Know Components

Component	CAS-No.	Revision Date
tert-Butyl hydroperoxide	75-91-2	1991-07-01
Water	7732-18-5	

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

Acute Tox. Acute toxicity

Aquatic Acute Acute aquatic toxicity

Aquatic Chronic Chronic aquatic toxicity

Eye Dam. Serious eye damage

Flam. Liq. Flammable liquids

H226 Flammable liquid and vapour.

H242 Heating may cause a fire.

H302 Harmful if swallowed.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H330 Fatal if inhaled.

H331 Toxic if inhaled.

H341 Suspected of causing genetic defects.



H401 Toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

Muta. Germ cell mutagenicity

Org. Perox. Organic peroxides

Skin Corr. Skin corrosion

Skin Sens. Skin sensitisation

**HMIS Rating**

Health hazard: 2

Chronic Health Hazard: \*

Flammability: 2

Physical Hazard 1

**NFPA Rating**

Health hazard: 3

Fire Hazard: 2

Reactivity Hazard: 1

Special hazard.I: OX

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