

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.5

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

### 1.1 Product identifiers

Product name : Luperox® DI, *tert*-Butyl peroxide  
Luperox ® DI, *tert*-Butyl peroxide  
Product Number : 168521  
Brand : Aldrich  
Index-No. : 617-001-00-2  
REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.  
CAS-No. : 110-05-4

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

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3

CHEMIKART

### 1.4 Emergency telephone

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 2), H225

Organic peroxides (Type E), H242

Germ cell mutagenicity (Category 2), H341

Long-term (chronic) aquatic hazard (Category 3), H412

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

### 2.2 Label elements

#### Labelling according Regulation (EC) No 1272/2008

## Pictogram

### Signal Word

Danger

### Hazard statement(s)

H225 Highly flammable liquid and vapor.  
H242 Heating may cause a fire.  
H341 Suspected of causing genetic defects.  
H412 Harmful to aquatic life with long lasting effects.

### Precautionary statement(s)

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P220 Keep/Store away from clothing/ combustible materials.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P410 Protect from sunlight.  
P411 + P235 Store at temperatures not exceeding 30°C/ 86 °F. Keep cool.

### Supplemental Hazard Statements

none

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : Di-tert-butyl peroxide  
tert-Butyl peroxide

Formula : C<sub>8</sub>H<sub>18</sub>O<sub>2</sub>  
Molecular weight : 146,23 g/mol  
CAS-No. : 110-05-4  
EC-No. : 203-733-6  
Index-No. : 617-001-00-2

Component		Classification	Concentration
<b>di-tert-butyl peroxide</b>			
CAS-No.	110-05-4	Flam. Liq. 2; Org. Perox.	<= 100 %
EC-No.	203-733-6	E; Muta. 2; Aquatic	
Index-No.	617-001-00-2	Chronic 3; H225, H242, H341, H412	

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

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Call in physician.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). 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

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

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>) Foam Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

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

Carbon oxides

Combustible.

Pay attention to flashback.

Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapours possible in the event of fire.

Forms explosive mixtures with air at ambient temperatures.

### 5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### 5.4 Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6: Accidental release measures

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

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

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

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### Hygiene measures

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.  
For precautions see section 2.2.

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

#### Storage conditions

Tightly closed. Separately or together with other organic peroxides only and away from sources of ignition and heat.

#### Storage stability

Recommended storage temperature  
2 - 8 °C

#### Storage class

Storage class (TRGS 510): 5.2: 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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## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Ingredients with workplace control parameters**

### **8.2 Exposure controls**

#### **Personal protective equipment**

##### **Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

##### **Skin protection**

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

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)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 30 min

Material tested: KCL 741 Dermatril® L

##### **Body Protection**

Flame retardant antistatic protective clothing.

##### **Respiratory protection**

Recommended Filter type: Respirator.

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

##### **Control of environmental exposure**

Do not let product enter drains. Risk of explosion.

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## **SECTION 9: Physical and chemical properties**

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

- |                   |               |
|-------------------|---------------|
| a) Physical state | clear, liquid |
| b) Color          | colorless     |

- |   |   |
|---|---|
| c) Odor   | very faint  |
| d) Melting point/freezing point                 | Melting point/range: < -29 °C - OECD Test Guideline 102   |
| e) Initial boiling point and boiling range      | 109 - 110 °C - lit.   |
| f) Flammability (solid, gas)                    | No data available   |
| g) Upper/lower flammability or explosive limits | Upper explosion limit: > 99 %(V)  |
| h) Flash point                                  | 6 °C at ca.1.013 hPa - closed cup   |
| i) Autoignition temperature                     | No data available   |
| j) Decomposition temperature                    | No data available   |
| k) pH   | No data available   |
| l) Viscosity                                    | Viscosity, kinematic: No data available<br>Viscosity, dynamic: 7,5 mPa.s at 20 °C - OECD Test Guideline 114 |
| m) Water solubility                             | 0,171 g/l at 20 °C - OECD Test Guideline 105- soluble   |
| n) Partition coefficient: n-octanol/water       | log Pow: 3,2 at 22 °C   |
| o) Vapor pressure                               | 53 hPa at 20 °C   |
| p) Density                                      | 0,796 g/mL at 25 °C - lit.  |
| Relative density                                | No data available   |
| q) Relative vapor density                       | No data available   |
| r) Particle characteristics                     | No data available   |
|   |   |
| s) Explosive properties                         | No data available   |
| t) Oxidizing properties                         | none  |

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Vapors may form explosive mixture with air.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Risk of explosion with:  
Amines

alkalines  
Heavy metal salts  
strong reducing agents  
boron compounds  
acids  
Impurities  
halogen-halogen compounds  
Rust  
Heavy metals  
sulfur  
Sulfur compounds  
Risk of ignition or formation of inflammable gases or vapours with:  
highly flammable solvents

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

Warming.

#### **10.5 Incompatible materials**

No data available

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

In the event of fire: see section 5

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### **SECTION 11: Toxicological information**

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

##### **Acute toxicity**

LD50 Oral - Rat - > 2.000 mg/kg

(OECD Test Guideline 423)

LC50 Inhalation - Rat - male and female - 4 h - > 22 mg/l - vapor

(OECD Test Guideline 436)

LD50 Dermal - Rat - male and female - > 2.000 mg/kg

(OECD Test Guideline 402)

##### **Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

##### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: No eye irritation

(OECD Test Guideline 405)

##### **Respiratory or skin sensitization**

Buehler Test - Guinea pig

Result: Does not cause skin sensitization.

(OECD Test Guideline 406)

##### **Germ cell mutagenicity**

Suspected of causing genetic defects.

In vitro tests showed mutagenic effects

Test Type: Ames test

Test system: TA1535

Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: (National Toxicology Program)  
Test Type: gene mutation test  
Test system: mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

Test Type: In vivo micronucleus test  
Species: Rat

Application Route: inhalation (vapor)  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: DNA damage

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

**Endocrine disrupting properties**

**Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - male and female - Oral - NOAEL (No observed adverse effect level) - 100 mg/kg - LOAEL (Lowest observed adverse effect level) - 300 mg/kg

RTECS: ER2450000

Cough, Shortness of breath, Headache, Nausea, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After absorption of large quantities:

Nausea  
narcosis

Organic peroxides generally show a more or less strongly pronounced irritant effect on skin and mucous membranes. In some cases it has displayed a sensitising effect with allergic



manifestations in predisposed persons. Mutagenic properties are associated with some compounds. The product should be handled with the care due when dealing with chemicals.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12: Ecological information

### 12.1 Toxicity

No data available

Toxicity to daphnia and other aquatic invertebrates      static test EC50 - Daphnia magna (Water flea) - > 73,1 mg/l - 48 h (OECD Test Guideline 202)

Toxicity to algae      static test ErC50 - Pseudokirchneriella subcapitata (algae) - ca. 36 mg/l - 72 h (OECD Test Guideline 201)

Toxicity to bacteria      static test EC50 - activated sludge - > 1.000 mg/l - 30 min (OECD Test Guideline 209)

### 12.2 Persistence and degradability

Biodegradability      aerobic - Exposure time 28 d  
Result: 6 % - Not readily biodegradable.  
(OECD Test Guideline 301D)

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

#### Product:

Assessment      : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

Discharge into the environment must be avoided.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

No data available

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## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 3107

IMDG: 3107

IATA: 3107

### 14.2 UN proper shipping name

ADR/RID: ORGANIC PEROXIDE TYPE E, LIQUID (DI-tert-BUTYL PEROXIDE)

IMDG: ORGANIC PEROXIDE TYPE E, LIQUID (DI-tert-BUTYL PEROXIDE)

IATA: Organic peroxide type E, liquid (Di-tert-Butyl peroxide)

Special Provisions: "Keep away from heat" label required.

### 14.3 Transport hazard class(es)

ADR/RID: 5.2

IMDG: 5.2

IATA: 5.2

### 14.4 Packaging group

ADR/RID: -

IMDG: -

IATA: -

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

### 14.6 Special precautions for user

No data available

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## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

#### National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES

#### Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

### 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

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## SECTION 16: Other information

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

H225 Highly flammable liquid and vapor.

H242 Heating may cause a fire.

H341 Suspected of causing genetic defects.

H412 Harmful to aquatic life with long lasting effects.

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the

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