1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 2,5-Bis(tert-butylperoxy)-2,5-dimethylhexane (Luperox® 101)

Product Number : 388092
Brand : Aldrich
Company : Sigma-Aldrich
            3050 Spruce Street
            SAINT LOUIS MO  63103
            USA
Telephone : +18003255832
Fax : +18003255052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 2,5-Bis(tert-butylperoxy)-2,5-dimethylhexane
Formula : C₁₆H₃₄O₄

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-63-7</td>
<td>201-128-1</td>
<td>-</td>
<td>&gt;= 93 - &lt;= 95 %</td>
</tr>
<tr>
<td>110-05-4</td>
<td>203-733-6</td>
<td>617-001-00-2</td>
<td>&lt;= 4 %</td>
</tr>
<tr>
<td>22431-89-6</td>
<td>-</td>
<td>-</td>
<td>&lt;= 6 %</td>
</tr>
<tr>
<td>3025-88-5</td>
<td>221-184-0</td>
<td>-</td>
<td>&lt;= 1 %</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Combustible Liquid, Organic Peroxide, Irritant

HMIS Classification
Health hazard:  2
Flammability:  2
Physical hazards:  1

NFPA Rating
Health hazard: 2
Fire: 2
Reactivity Hazard: 1
Special hazard: OX

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
Skin: May be harmful if absorbed through skin. Causes skin irritation.
Eyes: Causes eye irritation.
Ingestion: May be harmful if swallowed.

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties
Flash point: 65 °C (149 °F) - closed cup
Ignition temperature: no data available

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

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Do not let product enter drains.

Methods for cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Keep away from combustible material. Take measures to prevent the build up of electrostatic charge.
8. EXPOSURE CONTROLS/PERSOAL PROTECTION

Contains no substances with occupational exposure limit values.

**Personal protective equipment**

**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).

**Hand protection**
Handle with gloves.

**Eye protection**
Face shield and safety glasses

**Skin and body protection**
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**Hygiene measures**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
Form  liquid

**Safety data**
- pH  no data available
- Melting point  no data available
- Boiling point  55 - 57 °C (131 - 135 °F) at 9 hPa (7 mmHg)
- Flash point  65 °C (149 °F) - closed cup
- Ignition temperature  no data available
- Lower explosion limit  no data available
- Upper explosion limit  no data available
- Density  0.877 g/cm3
- Water solubility  no data available

10. STABILITY AND REACTIVITY

**Storage stability**
Stable under recommended storage conditions.
**Materials to avoid**
Strong bases, Powdered metals, Strong oxidizing agents, Reducing agents, Organic materials, acids, Strong reducing agents

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. **TOXICOLOGICAL INFORMATION**

**Acute toxicity**
no data available

**Irritation and corrosion**
no data available

**Sensitisation**
no data available

**Chronic exposure**

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.

**Signs and Symptoms of Exposure**
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Potential Health Effects**

- **Inhalation**
  May be harmful if inhaled. Causes respiratory tract irritation.

- **Skin**
  May be harmful if absorbed through skin. Causes skin irritation.

- **Eyes**
  Causes eye irritation.

- **Ingestion**
  May be harmful if swallowed.

12. **ECOLOGICAL INFORMATION**

**Elimination information (persistence and degradability)**
no data available

**Ecotoxicity effects**
no data available

**Further information on ecology**
no data available

13. **DISPOSAL CONSIDERATIONS**
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 3105  Class: 5.2  Packing group: II
Proper shipping name: Organic peroxide type D, liquid (2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane)
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 3105  Class: 5.2  EMS-No: F-J, S-R
Proper shipping name: ORGANIC PEROXIDE TYPE D, LIQUID (2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY)HEXANE)
Marine pollutant: No

IATA
UN-Number: 3105  Class: 5.2
Proper shipping name: Organic peroxide type D, liquid (2,5-Dimethyl-2,5-di-(tert-butylperoxy) hexane)

15. REGULATORY INFORMATION

OSHA Hazards
Combustible Liquid, Organic Peroxide, Irritant

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Dioxane, 3,3,6,6-tetramethyl-</td>
<td>22431-89-6</td>
</tr>
<tr>
<td>2,5-Dimethylhexane 2,5-dihydroperoxide</td>
<td>3025-88-5</td>
</tr>
</tbody>
</table>

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

SARA 313 Components
SARA 313: 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

Massachusetts Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
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</thead>
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<td>Di-tert-butyl peroxide</td>
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<td>1991-07-01</td>
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Pennsylvania Right To Know Components

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<td>1991-07-01</td>
</tr>
<tr>
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<td>22431-89-6</td>
<td></td>
</tr>
<tr>
<td>Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide</td>
<td>78-63-7</td>
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New Jersey Right To Know Components

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</table>
2,5-Dimethylhexane 2,5-dihydroperoxide 3025-88-5
Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide 78-63-7

California Prop. 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information
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