1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers
Product name : Dioctyl phthalate
Product Number : D201154
Brand : Aldrich
Index-No. : 607-317-00-9
REACH No. : 01-2119484611-38-XXXX
CAS-No. : 117-81-7

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number
Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Reproductive toxicity (Category 1B), H360
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

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)
H360 May damage fertility or the unborn child.
H410 Very toxic to aquatic life with long lasting effects.
Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P273 Avoid release to the environment.
P281 Use personal protective equipment as required.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P391 Collect spillage.
P405 Store locked up.
2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Synonyms | Bis(2-ethylhexyl) phthalate
|          | Phthalic acid bis(2-ethylhexyl ester) |

| Formula  | C_{24}H_{38}O_{4} |
| Molecular Weight | 390.56 g/mol |
| CAS-No.  | 117-81-7 |
| EC-No.   | 204-211-0 |
| Index-No.| 607-317-00-9 |
| Registration number | 01-2119484611-38-XXXX |

Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
</table>
| bis(2-Ethylhexyl) phthalate| Repr. 1B; H360 | 90 - 100 %    

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

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

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.

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

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 fire fighting if necessary.

5.4 Further information

no data available
6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe 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
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
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.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>bis(2-Ethylhexyl) phthalate</td>
<td>117-81-7</td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td>Lower Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Potential Occupational Carcinogen See Appendix A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ST</td>
<td>10 mg/m3</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Potential Occupational Carcinogen See Appendix A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>10 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
<td></td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment

**Eye/face protection**
Safety glasses with side-shields conforming to EN166. 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: 0.2 mm
Break through time: 480 min
Material tested: Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

**Splash contact**
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 120 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, 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**
Impervious 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

- **a)** Appearance  
  Form: liquid
- **b)** Odour  
  No data available
- **c)** Odour Threshold  
  No data available
- **d)** pH  
  No data available
- **e)** Melting point/freezing point  
  Melting point/range: -50 °C (-58 °F) - lit.
- **f)** Initial boiling point and boiling range  
  384 °C (723 °F) - lit.
- **g)** Flash point  
  207 °C (405 °F) - closed cup
- **h)** Evaporation rate  
  No data available
- **i)** Flammability (solid, gas)  
  No data available
- **j)** Upper/lower flammability or
  Lower explosion limit: 0.3 % (V)
explosive limits

k) Vapour pressure 1.6 hPa (1.2 mmHg) at 93.0 °C (199.4 °F)
l) Vapour density no data available
m) Relative density 0.985 g/cm³ at 25 °C (77 °F)
n) Water solubility no data available
o) Partition coefficient: n-octanol/water no data available
p) Auto-ignition temperature 390.0 °C (734.0 °F)
q) Decomposition temperature no data available
r) Viscosity no data available
s) Explosive properties no data available
t) Oxidizing properties no data available

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
no data available

10.5 Incompatible materials
Strong oxidizing agents

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

Acute toxicity
LD₅₀ Oral - rat - 30,000 mg/kg
Inhalation: no data available
LD₅₀ Dermal - rabbit - 25,000 mg/kg
no data available

Skin corrosion/irritation
Skin - rabbit
Result: Mild skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - rabbit
Result: Mild eye irritation - 24 h

Respiratory or skin sensitisation
no data available
Germ cell mutagenicity
no data available

Carcinogenicity
This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (bis(2-Ethylhexyl) phthalate)
NTP: Reasonably anticipated to be a human carcinogen (bis(2-Ethylhexyl) phthalate)
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.

Reproductive toxicity
May cause congenital malformation in the fetus.
Presumed human reproductive toxicant
May cause reproductive disorders.

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Additional Information
RTECS: TI0350000
Lung irritation, Gastrointestinal disturbance
Kidney -

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Toxicity to fish
LC50 - Pimephales promelas (fathead minnow) - > 0.67 mg/l - 96 h
LC50 - Oncorhynchus mykiss (rainbow trout) - > 0.32 mg/l - 96 h
LC50 - Cyprinodon variegatus (sheepshead minnow) - > 0.17 mg/l - 96 h
LC50 - Lepomis macrochirus (Bluegill) - > 0.20 mg/l - 96 h
NOEC - other fish - > 0.3 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates
Immobilization EC50 - Daphnia magna (Water flea) - > 0.16 mg/l - 48 h

12.2 Persistence and degradability
no data available
Biodegradability
Result: - Readily biodegradable.
(OECD Test Guideline 301)

12.3 Bioaccumulative potential
Bioaccumulation
Oncorhynchus mykiss (rainbow trout) - 100 d
- 0.014 mg/l
Bioconcentration factor (BCF): 113

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. Very toxic to aquatic life with long lasting effects.

no data available

13. **DISPOSAL CONSIDERATIONS**

13.1 **Waste treatment methods**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

14. **TRANSPORT INFORMATION**

**DOT (US)**

UN number: 3082  
Class: 9  
Packing group: III

Proper shipping name: Environmentally hazardous substances, liquid, n.o.s. (bis(2-Ethylhexyl) phthalate)

Reportable Quantity (RQ): 100 lbs

Marine pollutant: No

Poison Inhalation Hazard: No

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

15. **REGULATORY INFORMATION**

**REACH No.**

: 01-2119484611-38-XXXX

**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**

The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
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<td>117-81-7</td>
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**SARA 311/312 Hazards**

**Massachusetts Right To Know Components**

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**Pennsylvania Right To Know Components**

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**New Jersey Right To Know Components**

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**California Prop. 65 Components**

WARNING! This product contains a chemical known to the State of California to cause cancer.

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<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>117-81-7</td>
<td>2009-02-01</td>
</tr>
</tbody>
</table>
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
bis(2-Ethylhexyl) phthalate

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.
H360 May damage fertility or the unborn child.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
Repr. Reproductive toxicity

HMIS Rating
Health hazard: 0
Chronic Health Hazard: *
Flammability: 1
Physical Hazard 0

NFPA Rating
Health hazard: 0
Fire Hazard: 1
Reactivity Hazard: 0

Further information
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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 present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956
Version: 5.4 Revision Date: 01/30/2014 Print Date: 03/03/2014