1. Identification

Product Name  
Dioctyl phthalate

Cat No.  
AC117090000; AC117090010; AC117090025; AC117090050; AC117090100; AC117090250; AC117091000

Synonyms  
Bis(2-ethylhexyl) phthalate; DOP; Di-2-ethylhexyl phthalate

Recommended Use  
Laboratory chemicals.

Uses advised against  

Details of the supplier of the safety data sheet

Company  
Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

Emergency Telephone Number  
For information US: 001-800-ACROS-01 / Europe: +32 14 57 52 11
Emergency Number US: 001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No. US: 001-800-424-9300 / Europe: 001-703-527-3887

2. Hazard(s) identification

Classification  
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| Carcinogenicity | Category 1B |
| Reproductive Toxicity | Category 1B |

Label Elements

Signal Word  
Danger

Hazard Statements  
May cause cancer
May damage fertility. May damage the unborn child

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required

Response
IF exposed or concerned: Get medical attention/advice

Storage
Store locked up

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazard not otherwise classified (HNOC)

WARNING! This product contains a chemical known in the State of California to cause cancer, birth defects or other reproductive harm.

### 3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>117-81-7</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

### 4. First-aid measures

**Eye Contact**
Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

**Skin Contact**
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

**Inhalation**
Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.

**Ingestion**
Call a physician immediately. Clean mouth with water.

**Most important symptoms/effects**
No information available.

**Notes to Physician**
Treat symptomatically

### 5. Fire-fighting measures

**Suitable Extinguishing Media**
Water spray. Carbon dioxide (CO\textsubscript{2}). Dry chemical. Use water spray to cool unopened containers. Chemical foam.

**Unsuitable Extinguishing Media**
No information available

**Flash Point**
195 °C / 383 °F

**Method -**
No information available

**Autoignition Temperature**
390 °C / 734 °F

**Explosion Limits**
- Upper: 0.18%
- Lower: 0.1%

**Sensitivity to Mechanical Impact**
No information available

**Sensitivity to Static Discharge**
No information available

**Specific Hazards Arising from the Chemical**
Vapors may form explosive mixtures with air.

**Hazardous Combustion Products**
Dioctyl phthalate

Carbon monoxide (CO) Carbon dioxide (CO₂)

Protective Equipment and Precautions for Firefighters
Vapors are heavier than air and may spread along floors. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

<table>
<thead>
<tr>
<th></th>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

6. Accidental release measures

Personal Precautions
Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Use personal protective equipment. Ensure adequate ventilation. Do not touch damaged packages or spilled material.

Environmental Precautions
See Section 12 for additional ecological information.

Methods for Containment and Clean Up
Wear self-contained breathing apparatus and protective suit. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Do not let this chemical enter the environment.

7. Handling and storage

Handling
Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest. Use only in area provided with appropriate exhaust ventilation.

Storage
Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

8. Exposure controls / personal protection

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>TWA: 5 mg/m³</td>
<td>(Vacated) TWA: 5 mg/m³</td>
<td>IDLH: 5000 mg/m³</td>
<td>TWA: 5 mg/m³</td>
</tr>
<tr>
<td></td>
<td>(Vacated) STEL: 10 mg/m³</td>
<td>TWA: 5 mg/m³</td>
<td>STEL: 10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures
Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State
Liquid
Dioctyl phthalate

Revision Date 23-May-2017

Appearance Light yellow
Odor Odorless
Odor Threshold No information available
pH No information available
Melting Point/Range -50 °C / -58 °F
Boiling Point/Range 384 °C / 723.2 °F @ 760 mmHg
Flash Point 195 °C / 383 °F
Evaporation Rate No information available
Flammability (solid,gas) Not applicable
Flammability or explosive limits
Upper 0.18%
Lower 0.1%
Vapor Pressure 1.8 mbar @ 200 °C
Vapor Density 13.46 (Air = 1.0)
Specific Gravity 0.981
Solubility practically insoluble
Partition coefficient; n-octanol/water No data available
Autoignition Temperature 390 °C / 734 °F
Decomposition Temperature No information available
Viscosity 80 mPa.s at 20 °C
Molecular Formula C24 H38 O4
Molecular Weight 390.55

10. Stability and reactivity

Reactive Hazard None known, based on information available
Stability Stable under normal conditions.
Conditions to Avoid Incompatible products.
Incompatible Materials Strong oxidizing agents
Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO₂)
Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>LD50 = 30 g/kg (Rat)</td>
<td>LD50 = 25 g/kg (Rabbit)</td>
<td>LC50 = 10600 mg/m³ (Rat) 4 h</td>
</tr>
</tbody>
</table>

Toxically Synergistic Products
No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available
Sensitization No information available
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>117-81-7</td>
<td>Group 2B</td>
<td>Reasonably Anticipated</td>
<td>A3</td>
<td>X</td>
<td>Not listed</td>
</tr>
</tbody>
</table>
**Mutagenic Effects**  No information available

**Reproductive Effects**  No information available.

**Developmental Effects**  No information available.

**Teratogenicity**  Teratogenic effects have occurred in experimental animals.

**STOT - single exposure**  None known

**STOT - repeated exposure**  None known

**Aspiration hazard**  No information available

**Symptoms / effects, both acute and delayed**  No information available

**Endocrine Disruptor Information**

<table>
<thead>
<tr>
<th>Component</th>
<th>EU - Endocrine Disrupters Candidate List</th>
<th>EU - Endocrine Disruptors - Evaluated Substances</th>
<th>Japan - Endocrine Disruptor Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>Group I Chemical</td>
<td>High Exposure Concern</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**Other Adverse Effects**  See actual entry in RTECS for complete information.

---

**12. Ecological information**

**Ecotoxicity**
Do not empty into drains.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>EC50: &gt; 0.1 mg/L, 96h static (Pseudokirchneriella subcapitata)</td>
<td>LC50: &gt; 100 mg/L, 96h static (Oncorhynchus mykiss)</td>
<td>EC50 = 800 mg/L 15 min</td>
<td>LC50: = 9.4 mg/L, 48h (Daphnia magna)</td>
</tr>
<tr>
<td></td>
<td>EC50: &gt; 0.1 mg/L, 96h (Pseudokirchneriella subcapitata)</td>
<td>LC50: &gt; 0.67 mg/L, 96h flow-through (Oryzias latipes)</td>
<td>EC50 = 800 mg/L 30 min</td>
<td>EC50: &gt; 0.16 mg/L, 48h (Daphnia magna)</td>
</tr>
<tr>
<td></td>
<td>EC50: &gt; 130 mg/L, 72h (Desmodesmus subspicatus)</td>
<td>LC50: &gt; 0.32 mg/L, 96h semi-static (Poecilia reticulata)</td>
<td>EC50 = 800 mg/L 5 min</td>
<td></td>
</tr>
</tbody>
</table>
13. Disposal considerations

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

<table>
<thead>
<tr>
<th>Component</th>
<th>RCRA - U Series Wastes</th>
<th>RCRA - P Series Wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>U028</td>
<td></td>
</tr>
</tbody>
</table>

14. Transport information

<table>
<thead>
<tr>
<th>DOT</th>
<th>TDG</th>
<th>IATA</th>
<th>IMDG/IMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>

15. Regulatory information

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>204-211-0</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Legend:
- X - Listed
- E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
- F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
- N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
- P - Indicates a commenced PMN substance
- R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
- S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
- T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
- XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
- Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
- Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b)

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>117-81-7</td>
<td>&gt;95</td>
<td>0.1</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories

| Acute Health Hazard   | No     |
| Chronic Health Hazard | Yes    |
| Fire Hazard           | No     |
| Sudden Release of Pressure Hazard | No |
| Reactive Hazard       | No     |

CWA (Clean Water Act)

<table>
<thead>
<tr>
<th>Component</th>
<th>CWA - Hazardous Substances</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Clean Air Act

<table>
<thead>
<tr>
<th>Component</th>
<th>HAPS Data</th>
<th>Class 1 Ozone Depleters</th>
<th>Class 2 Ozone Depleters</th>
</tr>
</thead>
</table>

Page 6 / 7
Di(2-ethylhexyl)phthalate

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>100 lb</td>
<td>-</td>
</tr>
</tbody>
</table>

California Proposition 65
This product contains the following proposition 65 chemicals

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>California Prop. 65</th>
<th>Prop 65 NSRL</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>117-81-7</td>
<td>Carcinogen</td>
<td>310 µg/day</td>
<td>Developmental Carcinogen</td>
</tr>
</tbody>
</table>

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant: N
DOT Severe Marine Pollutant: N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade
No information available

16. Other information

Prepared By: Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date: 24-Nov-2010
Revision Date: 23-May-2017
Print Date: 23-May-2017
Revision Summary: This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of SDS