



## Safety Data Sheet (SDS)

Revision / Review Date: 12/18/14

### 1. Chemical Product and Company Identification

|                                      |   |
|--------------------------------------|---|
| Product Name:                        | DOP   |
| Distributed By:                      | HB Chemical<br>1665 Enterprise Parkway<br>Twinsburg Oh 44087<br>Phone - 330-920-8023              |
| SDS Prepared By (w Suppliers Input): | HB Chemical   |
| Chemical Name / Family:              | Di 2-ethylhexyl phthalate; Dioctyl phthalate/ Ester   |
| Common names:                        | DOP, DEHP Bis(2-ethylhexyl) phthalate, Phthalic acid bis(2 ethylhexyl ester), 'Dioctyl' phthalate |
| Molecular Formula:                   | C24H38O4  |
| Molecular Weight via GPC, Mn:        | 390.56 g/mol  |
| Product Use:                         | Plasticizer   |
| OSHA Status:                         | Hazardous   |
| CAS No:                              | 117-81-7  |
| EC No:                               | 204-211-0   |

For emergency health, safety, and environmental information, calls 330-920-8023.

For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300.

### 2. Hazard(s) Identification

#### Warning:



#### Emergency overview:

DOP is regulated as a hazardous chemical in North America (other countries do not regulate it). Typical of the phthalate ester group, this clear oily liquid may cause eye and skin irritation. Inhalation should be avoided. Special attention must be paid to regulations regarding hazardous spills.

#### Health hazards:

May cause cancer. May damage fertility.

#### Signs and Symptoms of Exposure:

Lung irritation, Gastrointestinal disturbance.

#### Primary Routes of Entry:

Skin, eyes, inhalation of oil mist if the product is aerosol.

Medical Conditions Generally Aggravated by Exposure: Not available.

#### Eye Contact:

Can be irritating to mucous membrane and eyes.

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| <u>Skin Contact:</u>              | May be mildly irritating to skin.  |
| <u>Ingestion:</u>                 | Can cause nausea and may irritate mouth, throat and stomach.   |
| <u>Inhalation:</u>                | High vapor concentration may be irritating to nose, throat, and the lungs. May cause dizziness.  |
| <u>NFPA Rating:</u>               | Health-0, Fire-1 Reactivity- 0   |
| <u>HMIS Hazard Ratings:</u>       | Health- 1, Flammability - 1, Reactivity - 0, Personal- C   |
| <u>HMIS limitation statement:</u> | The HMIS hazard ratings numbers are meant to give a quick indication of the relative hazards associated with the product. All of the information contained in the SDS should be consulted to assist with the safe handling of this material. |

### **3. Composition / Information on Ingredients**

| Weight Percent / Typical | Component Identity        | CAS Registry Number |
|--------------------------|---------------------------|---------------------|
| 100%                     | Di 2-ethylhexyl phthalate | 117-81-7            |

### **4. First Aid Measures**

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| <u>Inhalation:</u> | Remove to fresh air, give artificial respiration or oxygen if necessary.   |
| <u>Eyes:</u>       | Flush eyes with water for 10-15 minutes, or until irritation subside. Persistent irritation will require medical advice. |
| <u>Skin:</u>       | Remove contaminated clothing and wash skin thoroughly with soap and water.   |
| <u>Ingestion:</u>  | Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.                      |

### **5. Fire-Fighting Measures**

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| <u>Suitable Extinguishing Media:</u>     | Use Chemical foam, water spray, CO2, or Dry Chemical.   |
| <u>Special Fire Fighting Procedures:</u> | Water spray can be used to keep containers cool, but is generally ineffective for direct fire suppression. Direct water will spread fire. Treat as burning oil. Containers can explode through expansion. Keep drums as cool as possible to avoid expansion, explosions, and splattering. Firefighters should wear self-contained breathing apparatus when exposed to smoke, fumes, or decomposition products (carbon dioxide/carbon monoxide). |
| <u>Hazardous Combustion Products:</u>    | This product will decompose under extreme temperatures forming oxides of carbon.  |

Unusual fire and explosion hazards:

None known.

## **6. Accidental Release Measures**

Steps to be taken in case material is spilled:

Dike and contain the spill with inert material (i.e., sand, earth, sawdust) and transfer liquid and solid diking material to separate containers for recovery or disposal. Wash floor area with hot water solution. Remove contaminated clothing and wash before reuse. Wash affected skin areas with soap and water. Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Soak up with inert absorbent material and dispose of as hazardous waste.

Environmental Disposal Information:

Keep spills out of all sewers and bodies of water. Discharge into the environment must be avoided.

Waste Disposal:

All containers should be effectively labeled to facilitate the appropriate disposal or reclaim. Keep in suitable, closed containers for disposal.

## **7. Handling and Storage**

Precautions to be taken in handling:

Perform drum and tote filling in well-ventilated area wearing protective eye shields and clothing. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Storage:

Containers should be kept tightly closed and stored in a dry, cool and well ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Empty Containers:

Not available.

## **8. Exposure Controls / Personal Protection**

Exposure Controls:

Not available.

Respiratory Protection:

Respirators should be selected (when TWA exceeded) and used in accordance with OSHA 29CFR1910.34.

Ventilation:

For normal operation, local exhaust ventilation should suffice. Direct exhaust may be necessary when material becomes heated and vapors are given off or PEL is exceeded. Use only where sufficient ventilation exists to keep exposure levels below recommended levels.

Hand protection:

Wear gloves.

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| <u>Eye Protection:</u>             | Safety glasses.  |
| <u>Skin and Body Protection:</u>   | The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Wear impervious clothing boots and apron as appropriate. |
| <u>Other precautions:</u>          | Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.   |
| <u>Decontamination Facilities:</u> | There should be a shower facility and eyewash in the building where this product is being stored and handled. Exercise good chemical handling practice.  |

## **9. Physical and Chemical Properties**

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| <u>Physical Form:</u>                 | Oily liquid  |
| <u>Appearance &amp; Odor:</u>         | Clear/Mild   |
| <u>Specific Gravity:</u>              | @25°C = 0.983  |
| <u>Softening Point, R&amp;B:</u>      | Not available.   |
| <u>Solubility in Water:</u>           | Not available.   |
| <u>Flash Point, TAG CC F:</u>         | 200 °C   |
| <u>Percent Volatiles (by weight):</u> | Not available.   |
| <u>Viscosity cPs:</u>                 | (25°C) = 80  |
| <u>Evaporation Rate (Water ~ 1):</u>  | <1   |
| <u>Melting point/range:</u>           | -50 °C (-58 °F) - lit.                                       |
| <u>Relative density:</u>              | 0.985 g/cm <sup>3</sup> at 25 °C (77 °F)                     |
| <u>Vapor Pressure ( mm Hg):</u>       | 0.00001 mbar (50°C) 1.6 hPa (1.2 mmHg) at 93.0 °C (199.4 °F) |
| <u>Vapor Density (Air ~ 1):</u>       | >16 (vs air)   |
| <u>Freezing Point:</u>                | -45°C(-49°F)   |
| <u>Boiling Point (°F) Initial:</u>    | 384 °C (723 °F) - lit  |
| <u>Auto ignition Temperature, °C:</u> | 390.0 °C (734.0 °F)  |
| <u>Flammable Limits, %(V):</u>        | Lower explosion limit: 0,3 %(V)                              |

## **10. Stability and Reactivity**

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| <u>Stability:</u> | This product is stable under normal conditions. |
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| <u>Incompatibility (Materials to Avoid):</u> | Material reacts with strong oxidizing agents and bases.   |
| <u>Conditions to Avoid:</u>                  | Heat, sparks, open flame, high temperatures and electric arc from static discharges.                        |
| <u>Hazardous combustion products:</u>        | This product decomposes under high temperature and hydrolyses in humid conditions forming oxides of carbon. |
| <u>Hazardous decomposition products:</u>     | Carbon Dioxide. Carbon Monoxide.  |

## 11. Toxicological Information

Possible cancer hazard. May cause cancer based on animal data. DEHP, di (2-ethylhexyl) phthalate, was administered to rats and mice in a lifetime bioassay sponsored by the U.S. National Toxicology Program (NTP). High feed concentrations (mice: 3000 and 6000 ppm; rats: 6000 and 12,000 ppm) were used because of the very low toxicity of di (2-ethylhexyl) phthalate. Liver tumors were produced at both dose levels in each species. Further studies have shown that the liver tumors probably arose from the ability of di (2-ethylhexyl) phthalate at high doses in rodents to perturb lipid metabolism, to proliferate peroxisomes, or to increase the rate of cell division. Since non-rodent species (including primates) have been shown to be very resistant to these effects, and since it is not genotoxic, DEHP probably presents a negligible carcinogenic risk to humans at exposure levels typical of occupational or consumer use. Oral doses of this material that were high enough to cause toxicity in pregnant animals also produced some minor abnormalities in their offspring. High oral doses of this material given to male animals produced reduced fertility. However, high doses to humans handling this material are not expected since oral consumption is not a likely route of significant exposure. Because this material does not evaporate readily and is not easily absorbed through human skin, it is not expected to produce such effects in humans through inhalation or skin exposure when handled in a manner consistent with the precautionary measures contained in this Safety Data Sheet.

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| <u>IARC:</u>                              | 2B-Group 2B: Possibly carcinogenic to humans (bis(2-Ethylhexyl) phthalate).   |
| <u>NTP:</u>                               | Reasonably anticipated to be a human carcinogen (bis(2-Ethylhexyl) phthalate).  |
| <u>OSHA:</u>                              | 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. |
| <u>Oral:</u>                              | LD50 Rat 30,600 mg/kg.<br>Mouse 33,000 mg/kg.<br>Rabbit 33,900 mg/kg.   |
| <u>Dermal:</u>                            | LD-50: Rabbit > 19,960 mg/kg.   |
| <u>Eye Irritation:</u>                    | Rabbit Result: Mild eye irritation - 24 h   |
| <u>Skin Irritation:</u>                   | Rabbit 25 g/kg Rabbit Result: Mild skin irritation - 24 h   |
| <u>Respiratory or skin sensitisation:</u> | Maximisation Test (GPMT) - Guinea pig. Result: Does not cause skin sensitisation. (OECD Test Guideline 406).                                |
| <u>Germ cell mutagenicity:</u>            | No data available.  |

Reproductive toxicity:

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

**12. Ecological Information**

This material has not been evaluated for environmental effects.

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  
LC50 (daphnid): > 0.16 mg/l -96 h  
NOEC: 0.16 mg/l (limit of solubility in fresh water)  
EC-50 (Selenastrum capricornutum): > 0.10 mg/l-96 h

Toxicity to daphnia and other aquatic invertebrates:

Immobilization EC50-Daphnia magna(water flea)->0.16mg/l-48h

Biodegradability:

Readily biodegradable (OECD Test Guideline 301).

Bioaccumulation:

Oncorhynchus mykiss (rainbow trout) - 100 d - 0.014 mg/l  
Bioconcentration factor (BCF): 113 Remarks: Does not bioaccumulate.

**13. Disposal Considerations**

Reclaim or Dispose of material in accordance with all applicable local, state, and federal regulations. Government regulation may apply to empty DOP containers if not cleaned properly. The major consideration with esters and polyesters is the clean-up difficulty of these oily liquids. In larger spills, the potential for reclaiming the product should be considered and might dictate the type of containment and clean up employed. Incineration by a permitted hazardous waste facility in accordance with all regulatory requirements is the preferred method of disposal.

**14. Transport Information**

D.O.T. Shipping Name:

Environmentally hazardous liquid, N.O.S., Class 9, UN3082, PG 111, RQ (100 lbs. as dioctyl phthalate), notify NRC/911. ERG #171.

Air - ICAO (international Civil Aviation Organization):

Not dangerous goods.

Sea - IMDG (International Maritime Dangerous Goods):

Not dangerous goods.

**15. Regulatory Information**

All components of this material are on the TSCA Inventory.

All components of this material are on the Canadian DSL.

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| <u>SARA 302 Components:</u>                    | No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.  |
| <u>SARA 313 Components:</u>                    | bis(2-Ethylhexyl) phthalate, CAS-No. 117-81-7  |
| <u>SARA 311/312 Hazards:</u>                   | Chronic Health Hazard.   |
| <u>New Jersey RTK Label Information:</u>       | bis(2-Ethylhexyl) phthalate, CAS-No. 117-81-7  |
| <u>Pennsylvania RTK Label Information:</u>     | bis(2-Ethylhexyl) phthalate, CAS-No. 117-81-7  |
| <u>Massachusetts Right To Know Components:</u> | bis(2-Ethylhexyl) phthalate, CAS-No. 117-81-7  |
| <u>California Prop. 65 Components:</u>         | This product contains a chemical known to the State of California to cause cancer and birth defects or other reproduction harm. Bis(2-Ethylhexyl) phthalate, CAS-No. 117-81-7. |

#### **16. Other Information**

The above information has been compiled from what we believe to be credible sources. To our knowledge the information is accurate and reliable, however, it is not guaranteed. Any recommendations issued by HB Chemical personnel or literature is derived from experience and by no means should be taken as fact or construed as a recommendation to violate of any law, regulation or patent. It is the users responsibility to determine the suitability of any HB supplied material in their application. The individual conditions of each customer are well outside of our control and we cannot be held liable for its functionality and use. Please contact our office should you need specific information beyond what is supplied above. As with all Chemical usage safety precautions beyond the stated are highly recommended.