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**PHARMCO-AAPER**  
AND COMMERCIAL ALCOHOLS

Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300

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# MATERIAL SAFETY DATA SHEETS

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**PRODUCT NAME: DIOCTYL PHTHALATE**  
MSDS NUMBER: EZ060081

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name DOP Plasticizer  
Chemical Name bis(2-ethylhexyl)phthalate  
Synonym(s): bis(2-ethylhexyl)phthalate, phthalic acid bis(2-ethylhexyl) ester, 1,2-benzenedicarboxylic acid diethylhexyl ester, DEHP, phthalic acid diethylhexyl ester, diethylhexyl phthalate;  
Molecular Formula C<sub>24</sub>H<sub>38</sub>O<sub>4</sub>  
Molecular Weight 390.57  
Product Use plasticizer  
OSHA Status hazardous

## 2. COMPOSITION INFORMATION ON INGREDIENTS

(Typical composition is given, and it may vary. A certificate of analysis can be provided.)  
Weight % Component CAS Registry No. 100% di(2-ethylhexyl) phthalate 117-81-7

## 3. HAZARDS IDENTIFICATION

WARNING!

POSSIBLE CANCER HAZARD – MAY CAUSE CANCER BASED ON ANIMAL DATA

HMIS(r) Hazard Ratings: Health – 2\*, Flammability –1,

Chemical Reactivity – 0 H

NOTE: HMIS(c) rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

## 4. FIRST-AID MEASURES

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Eyes: Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention if symptoms persist.

Skin: Wash with soap and water. Get medical attention if symptoms occur.

Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Ingestion: Seek medical advice.

## 5. FIRE FIGHTING MEASURES

Extinguishing Media: water spray, dry chemical, carbon dioxide, foam

Special Firefighting Procedures: Wear self-contained breathing apparatus and protective clothing.

Hazardous Combustion Products: carbon dioxide, carbon monoxide

Unusual Fire and Explosion Hazards: none

## 6. ACCIDENTAL RELEASE MEASURES

Wear appropriate personal protective equipment. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

For Large Spills: Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams.

## 7. HANDLING AND STORAGE

Personal Precautionary Measures: Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials.

Storage: Keep container closed.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Country specific exposure limits have not been established or are not applicable unless listed below.

DI(2-ETHYLHEXYL)PHTHALATE (DEHP)

US. ACGIH Threshold Limit Values

Time Weighted Average (TWA): 5 mg/m<sup>3</sup>

DI-SEC OCTYL PHTHALATE

US. NIOSH: Pocket Guide to Chemical Hazards

Recommended exposure limit (REL): 5 mg/m<sup>3</sup>

US. NIOSH: Pocket Guide to Chemical Hazards

Short Term Exposure Limit (STEL): 10 mg/m<sup>3</sup>

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

PEL: 5 mg/m<sup>3</sup>

US. OSHA Table Z-1 -A (29 CFR 1910.1000)

Time Weighted Average (TWA): 5 mg/m<sup>3</sup>

US. OSHA Table Z-1 -A (29 CFR 1910.1000)

Short Term Exposure Limit (STEL): 10 mg/m<sup>3</sup>

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: high efficiency particulate aerosol (HEPA)

Eye Protection: It is a good industrial hygiene practice to minimize eye contact.

Skin Protection: Wear chemical-resistant gloves, boots, and protective clothing appropriate for the risk of exposure. Contact glove manufacturer for specific information.

Recommended Decontamination Facilities: eye bath, washing facilities

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: liquid

Color: colorless

Odor: slight

Specific Gravity: 0.985 (20 C)  
Vapor Pressure: 20 C; 0.0000001 mbar  
Vapor Density: 13.5  
Freezing Point: -50 C  
Boiling Point: 384 C  
Viscosity: 56.6 mPa.s (25 C)  
Solubility in Water: 0.1 g/l  
Octanol/Water Partition Coefficient: P: 75,858; log P: 4.88  
Flash Point: 216 C (Cleveland open cup)  
Autoignition Temperature: 382 C (ASTM D2155)  
Thermal Decomposition Temperature: > 393 C (DTA)

## 10. STABILITY AND REACTIVITY

Stability: Stable.

Incompatibility: Material reacts with strong oxidizing agents.

Hazardous Polymerization: will not occur

## 11. TOXICOLOGICAL INFORMATION

General: DEHP 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 DEHP. 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 DEHP 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 DEHP 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 material safety data sheet.

Toxicity data are not available unless listed below.

Oral LD-50:(rat) 30,600 mg/kg

Oral LD-50:(rabbit) 33,900 mg/kg

Dermal LD-50: ( rabbit) > 19,960 mg/kg

Skin Irritation (rabbit) slight

Skin Irritation (human) none

Eye Irritation (rabbit) slight

Skin Sensitization: (human) none

## 12. ECOLOGICAL INFORMATION

Oxygen Demand Data:

BOD-5: 40 mg/g

ThOD: 2,580 mg/g

Acute Aquatic Effects Data: 96 h LC-50 (fathead minnow): > 0.67 mg/l NOEC: 0.67 mg/l (limit of solubility in fresh water)

96 h LC-50 (rainbow trout): > 0.32 mg/l NOEC: 0.32 mg/l (limit of solubility in fresh water)

96h LC-50 (sheepshead minnow): >0.17 mg/l NOEC: 0.17 mg/l (limit of solubility in sea water)

96 h LC-50 (bluegill sunfish): >0.20 mg/l NOEC: 0.20 mg/l (limit of solubility in fresh water)

96 h LC-50 (daphnid): > 0.16 mg/l NOEC: 0.16 mg/l (limit of solubility in freshwater)

96 h EC-50 (Selenastrum capricornutum): > 0.10 mg/l

### 13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied.

### 14. TRANSPORT INFORMATION

Marine pollutant components: none unless listed below

Reportable Quantity: 45.4 kg

DOT (USA): Class 9, Packing Group III when material is shipped in quantities in one package at or above the Reportable Quantity and when no other hazard class applies; otherwise, not regulated.

TDG (Canada): Class not regulated

ICAO Status: Class 9, Packing Group III when material is shipped in quantities in one package at or above the Reportable Quantity and when no other hazard class applies; otherwise, not regulated.

IMDG Status: Class 9, Packing Group III when material is shipped in quantities in one package at or above the Reportable Quantity and when no other hazard class applies; otherwise, not regulated.

### 15. REGULATORY INFORMATION

WHMIS (Canada) Status: controlled

WHMIS (Canada) Hazard Classification: D/2/A

SARA 311-312 Hazard Classification(s): delayed (chronic) health hazard

SARA 313: none, unless listed below

di(2-ethylhexyl) phthalate

Carcinogenicity Classification (components present at 0.1% or more): none, unless listed below IARC

(International Agency for Research on Cancer): possibly carcinogenic to humans

ACGIH (American Conference of Governmental Industrial Hygienists): animal carcinogen

NTP (National Toxicology Program): reasonably anticipated to be a carcinogen

TSCA (US Toxic Substances Control Act): This product is listed on the

TSCA inventory. Any impurities present in this product are exempt from listing. Components/impurities of this product require export notification.

DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental

Protection Act): This product is listed on the DSL. Any impurities present in this product are exempt from listing.

EINECS (European Inventory of Existing Commercial Chemical Substances):

This product is listed on EINECS.

EINECS Number: 204-211-0

AICS/NICNAS (Australian Inventory of Chemical Substances and National

Industrial Chemicals Notification and Assessment Scheme): This product is listed on AICS or otherwise complies with NICNAS.

MITI (Japanese Handbook of Existing and New Chemical Substances): This product is listed in the Handbook or has been approved in Japan by new substance notification.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal or greater than the reportable quantities (RQs) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are: **NONE**

### 16. OTHER INFORMATION

The information contained herein is based on data considered to be accurate based on the material as packaged. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It is the user's obligation to determine the conditions of safe use of the product. While this MSDS is based on technical data judged to be reliable, PHARMCO-AAPER assumes not responsibility for the completeness or accuracy of the information contained herein.