TCI AMERICA

SAFETY DATA SHEET

Revision number: 3
Revision date: 08/18/2015

1. IDENTIFICATION

Product name: Bis(2-ethylhexyl) Phthalate
Product code: P0297

Product use: For laboratory research purposes.
Restrictions on use: Not for drug or household use.

Company:
TCI America
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Portland, OR 97203 U.S.A.
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Emergency telephone number:
Chemical Emergencies:
TCI America (8:00am - 5:00pm) PST
+1-503-286-7624
Transportation Emergencies:
Chemtrec 24-Hour
+1-800-424-9300 (U.S.A.)
+1-703-527-3887 (International)
Responsible department:
TCI America
Environmental Health Safety and Security
+1- 503-286-7624

2. HAZARD(S) IDENTIFICATION

OSHA Haz Com: CFR 1910.1200:
Eye Damage/Irritation [Category 2B]
Carcinogenicity [Category 2]
Toxic to Reproduction [Category 1B]
Aquatic Hazard (Acute) [Category 1]

Signal word: Danger!

Hazard Statement(s):
Causes eye irritation
May damage fertility or the unborn child
Suspected of causing cancer
Very toxic to aquatic life

Pictogram(s) or Symbol(s):


Precautionary Statement(s):

[Prevention] Wash hands and face thoroughly after handling. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing, eye protection and face protection.

[Response] If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention. If exposed or concerned: Get medical advice or attention. If exposed: Call a poison center or doctor.

[Storage] Store locked up.

[Disposal] Dispose of contents and container in accordance with US EPA guidelines for the classification and determination of hazardous waste listed in 40 CFR 261.3. (See Section 13)

Hazards not otherwise classified: [HNOC] Causes mild skin irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

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Substance/Mixture: Substance
Components: Bis(2-ethylhexyl) Phthalate
Percent: >98.0%(GC)
CAS Number: 117-81-7
Molecular Weight: 390.56
Chemical Formula: $C_{24}H_{38}O_4$
Synonyms: Di(2-ethylhexyl) Phthalate , Dioctyl Phthalate , Phthalic Acid Bis(2-ethylhexyl) Ester , Phthalic Acid Di(2-ethylhexyl) Ester , Phthalic Acid Dioctyl Ester , DEHP , DOP

4. FIRST-AID MEASURES

Inhalation: Call emergency medical service. Effects of exposure (inhalation) to substance may be delayed. Inhalation of vapors or contact with substance will result in contamination and potential harmful effects. Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Skin contact: Call a poison center or doctor if you feel unwell. Effects of exposure (skin contact) to substance may be delayed. Remove and wash contaminated clothing before re-use. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Eye contact: IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. Contact with material may irritate or burn eyes. Call emergency medical service. Move victim to fresh air. Check for and remove any contact lenses. Keep victim warm and quiet. Treat symptomatically and supportively. Effects of exposure to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Ingestion: Do not induce vomiting with out medical advice. Effects of exposure (ingestion) to substance may be delayed. If swallowed, seek medical advice immediately and show the container or label. Loosen tight clothing such as a collar, tie, belt or waistband. If a person vomits place them in the recovery position so that vomit will not reenter the mouth and throat. Rinse mouth. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Symptoms/effects:

Acute: Redness.
Delayed: Possibly carcinogenic to humans.

Immediate medical attention: CAUTION: Victim may be a source of contamination. If breathing has stopped, perform artificial respiration. Use first aid treatment according to the nature of the injury. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Dry chemical, CO_2 , water spray, or alcohol-resistant foam. Consult with local fire authorities before attempting large scale fire fighting operations.

Specific hazards arising from the chemical
Hazardous combustion products: These products include: Carbon oxides
Other specific hazards: Closed containers may explode from heat of a fire.

Special precautions for fire-fighters:
Use water spray or fog; do not use straight streams. Dike fire-control water for later disposal; do not scatter the material. Containers may explode when heated. Move containers from fire area if you can do it without risk.
Special protective equipment for fire-fighters:
Wear positive pressure self-contained breathing apparatus (SCBA). Structural fire fighters' protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations. Wear chemical protective clothing which is specifically recommended by the manufacturer. It may provide little or no thermal protection.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid contact with skin, eyes, and clothing. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (Section 8). Warn unnecessary personnel to move away. Stop leak if you can do it without risk. Ensure adequate ventilation. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Personal protective equipment: Wear eye protection (splash goggles) and face protection (full length face shield). Wear protective clothing (chemical resistant suit and chemical resistant boots). Vapor respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear protective gloves (nitrile).

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures: Do not clean-up or dispose except under supervision of a specialist. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Warn personnel to move away. Prevent entry into sewers, basements or confined areas; dike if needed.

Methods and materials for containment and cleaning up:
ELIMINATE all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if without risk. Absorb with an inert material and put the spilled material in an appropriate waste disposal container. Use clean non-sparking tools to collect absorbed material. Dike far ahead of spill; use dry sand to contain the flow of material. Ventilate the area.

Environmental precautions:
Keep away from living quarters. Environmental hazard. Do not let product enter drains. Prevent further leakage or spillage if safe to do so. Water runoff can cause environmental damage. Prevent entry into sewers, basements or confined areas; dike if needed.

7. HANDLING AND STORAGE

Precautions for safe handling: Do NOT breath gas, fumes, vapor, or spray. Manipulate under an adequate fume hood. Avoid contact with skin and eyes. Avoid exposure - obtain special instructions before use. Avoid prolonged or repeated exposure. Normal measures for preventive fire protection. Avoid contact - obtain special instructions before use. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Keep container dry. Handle and open container with care. Wear suitable protective clothing, gloves and eye/face protection. When using do not eat, drink, or smoke. Keep away from sources of ignition.

Conditions for safe storage: Store locked up. Keep containers tightly closed in a cool, well-ventilated place. Keep away from incompatibles. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid prolonged storage periods.

Storage incompatibilities: Combustible substances, Store away from oxidizing agents

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits:

ACGIH TLV (TWA):	5 mg/m^3
OSHA PEL (TWA):	5 mg/m^3
OSHA PEL (STEL):	10 mg/m^3

Appropriate engineering controls:
Handle only in a fully enclosed system and equipment. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. Ventilation is normally required when handling or using this product. Eyewash fountains should be provided in areas where there is any possibility that workers could be exposed to the substance. Follow safe industrial engineering/laboratory practices when handling any chemical.

Personal protective equipment

Respiratory protection:	Vapor respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent.
Hand protection:	Wear protective gloves.
Eye protection:	Splash goggles.
Skin and body protection:	Wear protective clothing (chemical resistant suit and chemical resistant boots).

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C):	Liquid
Form:	Clear
Color:	Colorless - Very pale yellow
Odor:	Slight Characteristic
Odor threshold:	No data available

Melting point/freezing point:	-50°C (-58°F)	**pH:**	No data available
Boiling point/range:	361°C (682°F)	**Vapor pressure:**	0.001kPa/20°C
Decomposition temperature:	No data available	**Vapor density:**	13.45
Relative density:	0.99	**Dynamic Viscosity:**	No data available
Kinematic Viscosity:	No data available		
Partition coefficient: n-octanol/water (log P_{ow})	7.54	**Evaporation rate:** (Butyl Acetate = 1)	No data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Flash point: 218°C (424°F)
Autoignition temperature: 390°C (734°F)
Flammability (solid, gas): No data available
Flammability or explosive limits:
Lower: 0.3%
Upper: No data available

Solubility(ies):
Water: Insoluble (0.285mg/L, 24°C)
Miscible: Hexane, Mineral oil
Very soluble: Ether, Benzene, Ethanol
Slightly soluble: Carbon tetrachloride

10. STABILITY AND REACTIVITY

Reactivity: Not Available.
Chemical Stability: Stable under recommended storage conditions. (See Section 7)
Possibility of Hazardous Reactions: No hazardous reactivity has been reported.
Conditions to avoid: Avoid excessive heat and light.
Incompatible materials: Oxidizing agents
Hazardous Decomposition Products: No data available

11. TOXICOLOGICAL INFORMATION

RTECS Number: TI0350000

Acute Toxicity:
orl-rat LD50:30 g/kg
orl-mus LD50:1500 mg/kg
skn-rbt LD50:25 g/kg
ivn-rat LD50:250 mg/kg

Skin corrosion/irritation:
skn-rbt 500 mg/24H MLD

Serious eye damage/irritation:
eye-rbt 500 mg/24H MLD

Respiratory or skin sensitization:
No data available

Germ cell mutagenicity:
dns-rat-lvr 500 umol/L
mmo-mus-lym 40 mg/L (+S9)
mmo-sat 5 mg/plate (-S9)

Carcinogenicity:
orl-mus TDLo:260 g/kg/2Y-C
orl-rat TDLo:216 g/kg/2Y-C

IARC: Group 2B (Possibly carcinogenic to humans) .
NTP: b (Reasonably anticipated to be carcinogens).
OSHA: No data available

Reproductive toxicity:
ipr-mus TDLo:12780 mg/kg(1D male)
ipr-rat TDLo:5 g/kg(5-15D preg)
orl-mus TDLo:1.6 g/kg(17D preg)

Routes of Exposure: Inhalation, Eye contact, Ingestion, Skin contact.
Symptoms related to exposure:
Eye contact may result in redness or pain. Skin contact may result in redness, pain or dry skin.
Potential Health Effects:
Skin and eye contact may result in irritation.
Target organ(s):

12. ECOLOGICAL INFORMATION

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Ecotoxicity

Fish:	96h LC50:75 mg/L (Oryzias latipes) 48h LC50:>3000 ppm (Oryzias latipes)
Crustacea:	48h EC50:>100 mg/L (Daphnia magna)
Algae:	72h EC50:>100 mg/L (Selenastrum capricornutum)

Persistence and degradability:	69 % (by BOD), 89 % (by HPLC)
Bioaccumulative potential (BCF):	1.0 - 3.4 (conc. 1 ppm), 0.7 - 29.7 (conc. 0.1 ppm)
Mobillity in soil:	No data available
Partition coefficient: n-octanol/water (log P_{ow})	7.54
Soil adsorption (Koc):	87420 - 510000
Henry's Law: constant (PaM^3/mol)	2.7×10^{-2}

13. DISPOSAL CONSIDERATIONS

Disposal of product:	Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.
Disposal of container:	Dispose of as unused product. Do not re-use empty containers.
Other considerations:	Observe all federal, state and local regulations when disposing of the substance.

DOT (US)

UN number:	**Proper Shipping Name:**	**Class or Division:**	**Packing Group:**
UN3082	Environmentally hazardous substance, liquid, n.o.s.	9 Miscellaneous hazardous material	III

IATA

UN number:	**Proper Shipping Name:**	**Class or Division:**	**Packing Group:**
UN3082	Environmentally hazardous substance, liquid, n.o.s.	9 Miscellaneous hazardous material	III

IMDG

UN number:	**Proper Shipping Name:**	**Class or Division:**	**Packing Group:**
UN3082	Environmentally hazardous substance, liquid, n.o.s.	9 Miscellaneous hazardous material	III

EmS number: F-A, S-F

15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA 8b.):
This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.

US Federal Regulations

CERCLA Hazardous substance and Reportable Quantity:

SARA 313:	Listed
SARA 302:	Not Listed

State Regulations

State Right-to-Know

Massachusetts	Listed
New Jersey	Not Listed
Pennsylvania	Listed
California Proposition 65:	Listed

Other Information

15. REGULATORY INFORMATION

NFPA Rating:

Health:	0
Flammability:	1
Instability:	0

HMIS Classification:

Health:	0
Flammability:	1
Physical:	0

International Inventories

WHMIS hazard class:	D2B: Materials causing other toxic effects. (Toxic)
Canada: DSL	On DSL
EC-No:	204-211-0

16. OTHER INFORMATION

Revision date: 08/18/2015
Revision number: 3

TCI chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.