

Material Safety Data for: Dioctyl Terephthalate

1. PRODUCT IDENTIFICATION

Name	bis(2-ethylhexyl terephthalate)
Synonyms	terephthalic acid, bis(2-ethylhexyl) ester; DOTP
CAS#	6422-86-2
Europe EC#	229-176-9
Product Uses	plasticiser

2. INGREDIENTS

	%	TWAEV / TLV mg/m ³	LD ₅₀ ORAL	(mg/kg) SKIN	LC ₅₀ ppm INHALATION
terephthalic acid, bis(2-ethylhexyl) ester	100%	not listed	>20,000	not known	not known

3. (a) HAZARDS SUMMARY

Hazards, Quick Guide:	<i>not hazardous</i>
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Canada – WHMIS

Key:

not controlled under WHMIS

B 2 – Flash Point <38°C, **B 3** – Flash Point >38°C & <93°C

D 1 – Immediately Toxic, **D 2** – Chronic Toxicity

C – Oxidising Substance, **E** – Corrosive

U.S.A. – HMIS

Key:

Health – 0, Fire – 0, Reactivity – 0

0=minimal, 1=slight, 2=moderate, 3=serious, 4=severe

3. (b) HAZARDS – TOXICITY

Effects, Acute Exposure

Skin Contact	little to no effect
Skin Absorption	not absorbed through the skin
Eye Contact	mildly irritating – will not damage eyes
Inhalation	low vapour pressure & high viscosity makes inhalation of vapour or mist unlikely; mice exposed to air saturated with DOTP vapour showed little effect apart from nasal irritation
Ingestion	not known – not a route of industrial exposure; bitter taste discourages intake

Effects, Chronic Exposure

General	very low toxicity; feeding 1000mg/kg/day to rats for 90 days had little effect; one ingestion test showed high frequency of cataracts in treated animals; <i>not relevant to industrial exposure</i>
Sensitising	not a sensitiser in humans or animals
Carcinogen/Tumorigen	not considered a tumorigen or a carcinogen in humans or animals
Reproductive Effect	no known effect in humans or animals
Mutagen	no known effect on humans or animals
Synergistic With	not known
LD ₅₀ (oral)	above 20,000mg/kg (rat) – <i>phthalates are known to have very low toxicity</i>
LD ₅₀ (skin)	not known – not absorbed through the skin
LC ₅₀ (inhalation)	not known

* **NOTE:** Small amounts of phthalates can be absorbed from a variety of plastics by ingestion. Metabolism of phthalates can produce substances which mimic sex hormones – they are thought to be “anti androgens” – and may have effects on the developing fetus & young children. There are also weak (and unproven) statistical links to health effects such as obesity, insulin resistance, and attention deficit disorder. Although absorption via the skin is slight, even tiny amounts of phthalates may be able to produce harmful effects. Accordingly, take care to limit skin contact with this product.
Please note that the above is characteristic of phthalates in general, and does not depend on either the source or the manufacturer of the product.

Please ensure that this MSDS is given to, and explained to people using this product.

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4. FIRST AID

- SKIN:** Wash with soap and plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or laundered.
- EYES:** Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.
- INHALATION:** Remove from contaminated area promptly. **CAUTION: Rescuer must not endanger himself!** If breathing stops, administer artificial respiration and seek medical aid promptly.
- INGESTION:** Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.

5. PHYSICAL PROPERTIES

Odour & Appearance	clear, colourless, odourless, viscous liquid with a bitter taste
Odour Threshold	not known – odourless
Vapour Pressure	1mmHg / 0.13kPa (215°C / 419°F) – <i>note very high temperature of measurement</i>
Evaporation Rate (<i>Butyl Acetate = 1</i>)	not known – not volatile
Vapour Density (air = 1)	13.5 (<i>theoretical</i>)
Boiling Range	383°C / 721°F
Freezing Point	-48°C / -55°F
Specific Gravity	0.983 (20/20°C)
Water Solubility	4 milligrams/litre (20°C / 68°F) – <i>effectively nil</i>
Also soluble in	acetone, ethanol, aromatic hydrocarbins
Viscosity	63 centipoise (25°C / 77°F)
pH	none – (<i>does not liberate hydrogen ions when dissolved</i>)
Molecular Weight	390grams per mole

6. FLAMMABILITY & FIRE FIGHTING

Flash Point	238°C / 460°F (closed cup)
Autoignition Temperature	not known
Flammable Limits	not known
Combustion Products	carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments
Fire Fighting Precautions	as for materials sustaining fire <i>OR</i> treat as an oil fire; fire fighters must wear SCBA
Static Charge Accumulation	probably not – <i>in any case high flash point ensures there is no hazard from static charge</i>

7. STABILITY / REACTIVITY

Dangerously Reactive With	strong oxidising agents
Also Reactive With	none known
Stability	stable; will not polymerize
Decomposes in Presence of	not known
Decomposition Products	none apart from Hazardous Combustion Products
Sensitive to Mechanical Impact	no

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8. PROTECTIVE EQUIPMENT / EXPOSURE CONTROL

ACGIH TLV	not listed
OSHA PEL	not listed
STEL	not listed
Ventilation	no special ventilation required
Hands	neoprene, nitrile or butyl gloves may be worn – <i>check with supplier to confirm suitability</i>
Eyes	safety glasses with side shields – <i>always protect the eyes</i>
Clothing	no special protective clothing required

9. HANDLING & STORAGE

Store in a cool, dry environment, away from open flame and oxidising agents.

Never cut, drill, weld or grind on or near this container. Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

NOTE: Many phthalates appear to alter the action of sex hormones in the fetus and in young children. Although there is less evidence of an effect in adults, it is prudent to minimise skin contact with these substances. (see also NOTE in Part 3b)

10. SPILL PROCEDURES

Leak Precaution	dyke to control spillage and prevent environmental contamination
Handling Spill	ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on an inert sorbent, sweep, shovel & store in closed containers for recycling or disposal

11. DISPOSAL

Waste Disposal	do not flush to sewer , recycle solvent if possible, if local regulations permit, may be put in sanitary landfill, may be incinerated in approved facility after mixing with a flammable waste
Containers	Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use. Pails must be vented and thoroughly dried prior to crushing and recycling. IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs). Steel containers must be inspected, pressure tested & recertified every 5 years. <i>Never cut, drill, weld or grind on or near this container, even if empty</i>

12. ENVIRONMENTAL INFORMATION

Bioaccumulation	this product is not a bioaccumulator; rodents excrete ~98% within 144 hours
Biodegradation	a similar product degrades readily in the presence of oxygen
Abiotic Degradation	this product reacts with atmospheric hydroxyl radicals; estimated half-life in air is 17.5 hours; not expected to hydrolyse in water
Mobility in soil, water	this product is water insoluble and cannot move in soil and water
Aquatic Toxicity	
LC ₅₀ (Fish, 96hr)	not known
EC ₅₀ (Crustacea, 48hr)	not known

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13. TRANSPORT REGULATIONS

<i>Canada TDG</i>	PIN	UN- not regulated for transport
AND	Shipping Name	not regulated for transport
<i>U.S.A. 49 CFR</i>	Class	not regulated for transport
	Packing Group	not regulated for transport
Marine Pollutant		not a marine pollutant

14. EMERGENCY INFORMATION

<i>Canada</i>	Call CANUTEC (collect)	(613) 996-6666
<i>U.S.A.</i>	Call CHEMTREC	(800) 424-9300

15. REGULATIONS

Canada DSL	on inventory
U.S.A. TSCA	on inventory
Europe EINECS	on inventory

TSCA Requirements: Pursuant to section 8(d) of TSCA, EPA promulgated a model Health and Safety Data Reporting Rule. The section 8(d) model rule requires manufacturers, importers, and processors of listed chemical substances and mixtures to submit to EPA copies and lists of unpublished health and safety studies. Bis(2-ethylhexyl) terephthalate is included on this list. Effective date: 1/3/83; Sunset date: 1/3/93.

16. PREPARATION INFORMATION

Prepared for Megaloid Laboratories by Peter Bursztyn, (705) 734-1577

With data from RTECS, Haz. Substance Data Base, Cheminfo (CCOHS), IUCLID Datasheets (European Chem. Substance Info. System), & others, as available

Preparation Date: February 2004 Revision Date: February 2007, February 2010

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