

# Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Possible Reproductive Effector; suspected of damaging fertility or the unborn child. This compound is a skin sensitizer. This compound is a respiratory sensitizer.	

## Section I. Chemical Product and Company Identification

Chemical Name	<b>Di-n-octyl Phthalate</b>		
Catalog Number	P0304	Supplier	TCI America 9211 N. Harbortgate St. Portland OR 1-800-423-8616
Synonym	1,2-Benzenedicarboxylic acid, 1,2-dioctyl ester (CA INDEX NAME); Phthalic Acid Di-n-octyl Ester		
Chemical Formula	C <sub>24</sub> H <sub>38</sub> O <sub>4</sub>		
CAS Number	117-84-0		
		In case of Emergency Call	<b>Chemtrec®</b> <b>(800) 424-9300 (U.S.)</b> <b>(703) 527-3887 (International)</b>

## Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Di-n-octyl Phthalate	117-84-0	Min. 98.0 (GC)	Not available.	Rat LD <sub>50</sub> (oral) 47 gm/kg Mouse LD <sub>50</sub> (oral) 6513 mg/kg Guinea Pig LD <sub>50</sub> (dermal) >5 gm/kg

## Section III. Hazards Identification

Acute Health Effects	Skin contact may result in sensitization. Always cover all exposed skin with an impermeable layer and use proper eye protection. A OSHA/MSHA approved dust and vapor respirator is required when working with this material. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	<b>CARCINOGENIC EFFECTS</b> : Not available. <b>MUTAGENIC EFFECTS</b> : Not available. <b>TERATOGENIC EFFECTS</b> : Not available. <b>DEVELOPMENTAL TOXICITY</b> : Reproductive Effects. Rat TDLo Intraperitoneal 5 gm/kg, female 5-15 days of pregnancy TOXIC Effects: Effects on Embryo or Fetus - Fetotoxicity Specific Developmental Abnormalities - Eye, ear Specific Developmental Abnormalities - Other developmental abnormalities Rat TDLo Oral 5600 mg/kg, male 4 weeks prior to mating TOXIC Effects: Paternal Effects - Spermatogenesis Paternal Effects - Testes, epididymis, sperm duct Mouse TDLo Oral 78240 mg/kg, female 6-13 days of pregnancy TOXIC Effects: Effects on Newborn - Live birth index Effects on Newborn - Growth Statistics Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

## Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

**Section V. Fire and Explosion Data**

Flammability	May be combustible at high temperature.	Auto-Ignition	Not available.
Flash Points	219°C (426.2°F).	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO <sub>2</sub> ).		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		

**Section VI. Accidental Release Measures**

Spill Cleanup Instructions	Possible Reproductive Effecting material. Respiratory sensitizing material. Skin sensitizing material. Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Consult federal, state, and/or local authorities for assistance on disposal.
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**Section VII. Handling and Storage**

Handling and Storage Information	POSSIBLE REPRODUCTIVE EFFECTOR. RESPIRATORY SENSITIZER. SKIN SENSITIZER. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. Do not breathe gas/fumes/ vapor/spray. Always store away from incompatible compounds such as oxidizing agents, alkalis (bases).
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**Section VIII. Exposure Controls/Personal Protection**

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent.
	
Exposure Limits	Not available.

**Section IX. Physical and Chemical Properties**

Physical state @ 20°C	Liquid. (Clear, light yellow.)	Solubility	Soluble in many organic solvents. Insoluble in water.
Specific Gravity	0.98 (water=1)		
Molecular Weight	390.56	Partition Coefficient	Log P <sub>ow</sub> : 8.10
Boiling Point	380°C (716°F)	Vapor Pressure	3.5 xE-4 Pa (@ 25°C)
Melting Point	Not available.	Vapor Density	13.5 (Air = 1)
Refractive Index	1.48	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
Viscosity	Not available.	Taste	Not available.

**Section X. Stability and Reactivity Data**

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents, strong alkalis (bases).

**Section XI. Toxicological Information**

RTECS Number	T11925000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD <sub>50</sub> (oral) 47 gm/kg Mouse LD <sub>50</sub> (oral) 6513 mg/kg Guinea Pig LD <sub>50</sub> (dermal) >5 gm/kg

Chronic Toxic Effects	<p><b>CARCINOGENIC EFFECTS</b> : Not available.  <b>MUTAGENIC EFFECTS</b> : Not available.  <b>TERATOGENIC EFFECTS</b> : Not available.  <b>DEVELOPMENTAL TOXICITY</b>: Reproductive Effects.  Rat TDLo Intraperitoneal 5 gm/kg, female 5-15 days of pregnancy  TOXIC Effects:  Effects on Embryo or Fetus - Fetotoxicity  Specific Developmental Abnormalities - Eye, ear  Specific Developmental Abnormalities - Other developmental abnormalities  Rat TDLo Oral 5600 mg/kg, male 4 weeks prior to mating  TOXIC Effects:  Paternal Effects - Spermatogenesis  Paternal Effects - Testes, epididymis, sperm duct  Mouse TDLo Oral 78240 mg/kg, female 6-13 days of pregnancy  TOXIC Effects:  Effects on Newborn - Live birth index  Effects on Newborn - Growth Statistics  Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.</p>
Acute Toxic Effects	<p>Skin contact may result in sensitization. Always cover all exposed skin with an impermeable layer and use proper eye protection. A OSHA/MSHA approved dust and vapor respirator is required when working with this material.  Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.</p>

### Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	<p>Di-n-octyl phthalate's production and use as a plasticizer may result in its release to the environment through various waste streams. If released to air, a measured vapor pressure of 2.6X10<sup>-6</sup> mm Hg at 25 deg C suggests that di-n-octyl phthalate will exist in both the vapor and particulate phases in the ambient atmosphere. Vapor-phase di-n-octyl phthalate will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 19 hours. Particulate-phase di-n-octyl phthalate will be physically removed from the atmosphere by wet and dry deposition. If released to soil, an estimated Koc of 6.1X10<sup>+5</sup> indicates di-n-octyl phthalate will be immobile. Volatilization from wet and dry soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of 4.5X10<sup>-7</sup> atm-cu m/mole and this compound's measured vapor pressure. One study suggests that biodegradation in soil may be important following acclimation of the resident microbial population. If released into water, a sediment Koc value of &gt;1.0X10<sup>+5</sup> indicates this compound will adsorb to suspended solids and sediment in the water column. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's estimated Henry's Law constant. Measured BCFs ranging from 1.1 to 9332 suggest bioconcentration in aquatic organisms is low to high. Hydrolysis is not expected to be an important process based upon a half-life of 107 years at pH 7 and 25 deg C. A half-life of 5 days was measured in a model terrestrial-aquatic ecosystem. 85% biodegradation of di-n-octyl phthalate was observed after 10 days incubation in Rhine river water at 20 deg C; at 4 deg C, biodegradation was negligible. Occupational exposure to di-n-octyl phthalate may occur through inhalation of aerosols and dermal contact with this compound at workplaces where di-n-octyl phthalate is produced or used as a plasticizer. The general population may be exposed to di-n-octyl phthalate via inhalation of ambient air, ingestion of contaminated drinking water, and dermal contact with products containing di-n-octyl phthalate as a plasticizer.</p>

### Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. 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. Observe all federal, state and local regulations when disposing of the substance.
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### Section XIV. Transport Information

DOT Classification	Not a DOT controlled material (United States).
PIN Number	Not applicable.
Proper Shipping Name	Not applicable.
Packing Group (PG)	Not applicable.
DOT Pictograms	

### Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is <b>ON</b> the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	On DSL
EINECS Number (EEC)	204-217-7
EEC Risk Statements	R42/43- May cause sensitization by inhalation and skin contact. R46- May cause heritable genetic damage. R47- May cause birth defects.
Japanese Regulatory Data	ENCS No. 3-1307

**Section XVI. Other Information****Version 1.0****Validated on 9/27/2010.****Printed 9/27/2010.****Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household, 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 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 MSDS sheets 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 MSDS sheets 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, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.

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