

# Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Irritating to skin, eyes, and the respiratory system.	

## Section I. Chemical Product and Company Identification

Chemical Name	<b>Phthalic Acid Dicyclohexyl Ester</b>		
Catalog Number	P0293	Supplier	TCl America 9211 N. Harborage St. Portland OR 1-800-423-8616
Synonym	Dicyclohexyl Phthalate		
Chemical Formula	C <sub>6</sub> H <sub>4</sub> (COOC <sub>6</sub> H <sub>11</sub> ) <sub>2</sub>		
CAS Number	84-61-7	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
Phthalic Acid Dicyclohexyl Ester	84-61-7	Min. 99.0%(GC)	Not available.	Rat LD <sub>50</sub> (oral) 30 mL/kg

## Section III. Hazards Identification

Acute Health Effects	Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. 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> Not available. 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	207°C (404.6°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

Irritating Material.

Use a shovel to put the material into a convenient waste disposal container. 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.

**Section VII. Handling and Storage**Handling and Storage  
Information

IRRITANT. 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 dust. Always store away from incompatible compounds such as oxidizing agents.

**Section VIII. Exposure Controls/Personal Protection**

## Engineering Controls

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

## Personal Protection

Splash goggles. Lab coat. Dust 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	Solid. (White Crystalline Powder.)	Solubility	Soluble in many organic solvents. Partially soluble in methanol, ethanol, diethyl ether. Insoluble in water.
Specific Gravity	1.383 (water=1)		
Molecular Weight	330.42	Partition Coefficient	Not available.
Boiling Point	222 to 228°C (431.6 to 442.4°F) @ 4 mmHg	Vapor Pressure	0.1 mmHg @ 150
Melting Point	65°C (149°F)	Vapor Density	11.6 (Air = 1)
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Mild aromatic.
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.

**Section XI. Toxicological Information**

## RTECS Number

TI0889000

## Routes of Exposure

Eye Contact. Ingestion. Inhalation.

## Toxicity Data

Rat LD<sub>50</sub> (oral) 30 mL/kg

## Chronic Toxic Effects

**CARCINOGENIC EFFECTS** : Not available.  
**MUTAGENIC EFFECTS** : Not available.  
**TERATOGENIC EFFECTS** : Not available.  
**DEVELOPMENTAL TOXICITY** Not available.  
 Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

## Acute Toxic Effects

Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.  
 Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

**Section XII. Ecological Information**

Ecotoxicity	Not available.
Environmental Fate	Dicyclohexyl phthalate's production and use as a plasticizer may result in its release to the environment through various waste streams. If released into air, a measured vapor pressure of $7.0 \times 10^{-4}$ mm Hg at 25 deg C indicates dicyclohexyl phthalate will exist solely as a vapor in the ambient atmosphere. Vapor-phase dicyclohexyl 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 16 hours. If released to soil, an estimated Koc of $5.6 \times 10^4$ indicates dicyclohexyl phthalate is expected to be immobile. Volatilization from dry soil surfaces is not expected to occur based upon this compound's measured vapor pressure. Dicyclohexyl phthalate may volatilize from wet soil surfaces based upon an estimated Henry's Law constant $7.6 \times 10^{-5}$ atm-cu m/mole, however adsorption to organic matter is expected to attenuate this process. If released into water, this compound's estimated Koc indicates that adsorption to suspended solids and sediment in the water column is expected. Volatilization from water surfaces is expected to occur based upon this compound's estimated Henry's Law constant. Estimated volatilization half-lives from a model river and model lake are 1.1 and 14 days, respectively. However, adsorption to suspended solids and sediment in the water column is expected to attenuate this process. An estimated BCF of $1.2 \times 10^4$ suggests the potential for bioconcentration in aquatic organisms is very high. However, bioconcentration studies on other phthalate esters suggest that bioconcentration may be lower than indicated by the regression-derived equations due to the ability of aquatic organisms to metabolize phthalate esters. Estimated hydrolysis half-lives of 12 and 1.2 years at pHs 7 and 8, respectively, suggest that hydrolysis is not expected to be an important process. Biodegradation is expected to be an important fate process in both water and soil. Dicyclohexyl phthalate reached 68.5% of its theoretical BOD over 4 weeks using an activated sludge inoculum. Occupational exposure to dicyclohexyl phthalate may occur through inhalation of dust particles and dermal contact with this compound at workplaces where dicyclohexyl phthalate is produced or used as a plasticizer.

**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)	201-545-9
EEC Risk Statements	R36/37/38- Irritating to eyes, respiratory system and skin.
Japanese Regulatory Data	ENCs No. (3)-1311, (5)-165

**Section XVI. Other Information**

**Version 1.0**  
**Validated on 10/6/2006.**  
**Printed 10/6/2006.**

**Notice to Reader**

TCI laboratory 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 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.