TCI AMERICA

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	**Harmful compound, minimize exposure.** **Irritating to skin, eyes, and the respiratory system.** **Lachrymator.** **Environmental hazard.**	

Section I. Chemical Product and Company Identification

Chemical Name **Diethyl Phthalate**

Catalog Number	P0296
Synonym	Phthalic Acid Diethyl Ester
Chemical Formula	$C_{12}H_{14}O_4$
CAS Number	84-66-2

Supplier
TCI America
9211 N. Harborgate St.
Portland OR
1-800-423-8616

In case of Emergency Call
Chemtrec®
(800) 424-9300 (U.S.)
(703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Diethyl Phthalate	84-66-2	Min. 98.0%(GC)	Not available.	Rat LD_{50} (oral) 8600 mg/kg Mouse LD_{50} (oral) 6172 mg/kg Rat LD_{50} (intraperitoneal) 5058 ug/kg

Section III. Hazards Identification

Acute Health Effects

Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. 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

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : TUMORIGENIC EFFECTS
Mouse TDLo Skin; 618 mL/kg/ 2 years intermittent
TOXIC EFFECTS
Tumorigenic - Equivocal tumorigenic agent by RTECS criteria
Liver - Tumors
DEVELOPMENTAL TOXICITY: REPRODUCTIVE EFFECTS
Rat TDLo Intraperitoneal; 506 mg/kg; female 5 to 15 days of pregnancy
TOXIC EFFECTS
Effects on Fertility - Post implantation mortality (e.g., dead and or resorbed implants per total number of implants)
Effects on Embryo or Fetus - Fetotoxicity (except death, e.g., stunted fetus)
Specific Developmental Abnormalities - Musculoskeletal system
TDLo Oral; 25 gm/kg; female 6 to 15 days of pregnancy
TOXIC EFFECTS
Specific Developmental Abnormalities - Musculoskeletal system
Mouse TDLo Oral; 171 gm/kg; male 7 days and 7 days prior to mating -21 days after birth prior to mating
TOXIC EFFECTS
Paternal Effects - Spermatogenesis (including genetic material, sperm morphology, motility, and count)
Paternal Effects - Prostate, seminal vessicle, Cowper's gland, accessory glands
Effects on Newborn -Live birth index (similar to T26, except measured after birth)
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.

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Section V. Fire and Explosion Data

Flammability	May be combustible at high temperature.	Auto-Ignition	457°C (854.6°F)
Flash Points	162°C (323.6°F).	Flammable Limits	LOWER: 0.75%
Combustion Products	These products are toxic carbon oxides (CO, CO_2).		
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	Harmful Material. Irritating Material. Lachrymatory. Environmental hazard. 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.

Section VII. Handling and Storage

Handling and Storage Information	HARMFUL. IRRITANT. LACHRYMATORY. ENVIRONMENTAL HAZARD. 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, acids.

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, Colorless.)	Solubility	Soluble in alcohol, ether, acetone, benzene. Very slightly soluble in water. Miscible in other organic solvents. Insoluble in chloroform.
Specific Gravity	1.12 (water=1)		
Molecular Weight	222.24	Partition Coefficient	Not available.
Boiling Point	295°C (563°F)	Vapor Pressure	Not available.
Melting Point	-3°C (26.6°F)	Vapor Density	7.66 (Air = 1)
Refractive Index	1.499 to 1.504	Volatility	Not available.
Critical Temperature	Not available.	Odor	Odorless.
Viscosity	9.5 Pas @ 25°C	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 oxidizing agents, acids, water, nitric acid.

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Section XI. Toxicological Information

RTECS Number	TI1050000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD_{50} (oral) 8600 mg/kg Mouse LD_{50} (oral) 6172 mg/kg Rat LD_{50} (intraperitoneal) 5058 ug/kg
Chronic Toxic Effects	**CARCINOGENIC EFFECTS** : Not available. **MUTAGENIC EFFECTS** : Not available. **TERATOGENIC EFFECTS** : TUMORIGENIC EFFECTS Mouse TDLo Skin; 618 mL/kg/ 2 years intermittent TOXIC EFFECTS Tumorigenic - Equivocal tumorigenic agent by RTECS criteria Liver - Tumors **DEVELOPMENTAL TOXICITY**: REPRODUCTIVE EFFECTS Rat TDLo Intraperitoneal; 506 mg/kg; female 5 to 15 days of pregnancy TOXIC EFFECTS Effects on Fertility - Post implantation mortality (e.g., dead and or resorbed implants per total number of implants) Effects on Embryo or Fetus - Fetotoxicity (except death, e.g., stunted fetus) Specific Developmental Abnormalities - Musculoskeletal system TDLo Oral; 25 gm/kg; female 6 to 15 days of pregnancy TOXIC EFFECTS Specific Developmental Abnormalities - Musculoskeletal system Mouse TDLo Oral; 171 gm/kg; male 7 days and 7 days prior to mating -21 days after birth prior to mating TOXIC EFFECTS Paternal Effects - Spermatogenesis (including genetic material, sperm morphology, motility, and count) Paternal Effects - Prostate, seminal vessicle, Cowper's gland, accessory glands Effects on Newborn -Live birth index (similar to T26, except measured after birth) Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.
Acute Toxic Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. 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	Diethyl phthalate's production and use as a plasticizer, solvent for resins, wetting agent and insect repellent may reslut in its release to the environment through various waste streams. Based on a measured vapor pressure of 2.1X10-3 mm Hg at 25 deg C, diethyl phthalate is expected to exist primarily in the vapor-phase in the ambient atmosphere. Vapor-phase diethyl phthalate is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals with an atmospheric half-life of about 110 hours. Diethyl phthalate is expected to have moderate to low mobility in soil based upon experimental Koc values in the range of 320-1,726 measured in various soils at different pH and organic carbon content. Volatilization from dry soil surfaces is not expected based upon the vapor pressure of this compound. Volatilization from moist soil surfaces is not expected to be important based upon the estimated Henry's Law constant of 6.1X10-7 atm-cu m/mole. In water, biodegradation of diethyl phthalate is expected to occur under aerobic and anaerobic conditions with estimated half-lives of about 3 and 28 days, respectively. Diethyl phthalate is expected to adsorb to sediment or particulate matter given its measured Koc values. This compound is expected to slowly volatilize from water surfaces given its estimated Henry's Law constant. Estimated half-lives for a model river and model lake are 89 and 652 days, respectively. Hydrolysis is expected to occur slowly with an estimated half-life of 110 days at pH 8. The potential for bioconcentration in aquatic organisms is considered high based upon an experimental BCF value of 117 measured in bluegill sunfish. Occupational exposure may be through inhalation of ambient air and dermal contact with this compound at workplaces where diethyl phthalate is produced or used. The general population will be exposed to diethyl phthalate via inhalation of ambient air, ingestion of food and drinking water, and dermal contact with products containing diethyl phthalate.

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.

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	

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Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	On DSL.
EINECS Number (EEC)	201-550-6
EEC Risk Statements	R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R52- Harmful to aquatic organisms. R53- May cause long-term adverse effects in the aquatic environment.
Japanese Regulatory Data	ENCS No. (3)-1301

Section XVI. Other Information

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Notice to Reader