




Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
 	<p>THIS MATERIAL IS TOXIC BY INHALATION. Highly toxic compound, do not ingest or inhale. Avoid all contact with this material. Combustible material; avoid heat and sources of ignition. Severely irritating to skin, eyes, and the respiratory system. This compound is a possible skin sensitizer. Lachrymator. Moisture sensitive material. Refrigerate and vent pressure slowly before opening.</p>	

Section I. Chemical Product and Company Identification

Chemical Name	Isocyanic Acid Phenyl Ester		
Catalog Number	I0131	Supplier	TCI America 9211 N. Harbortgate St. Portland OR 1-800-423-8616
Synonym	Benzene, Isocyanato- (9 Cl)		
Chemical Formula	C ₆ H ₅ NCO		
CAS Number	103-71-9	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
Isocyanic Acid Phenyl Ester	103-71-9	Min. 98.0(GC)	Not available.	Rat LC ₅₀ (inhalation) 22mg/m ³ /4H Rat LD ₅₀ (oral) 800mg/kg Rabbit LD ₅₀ (dermal) 7130 mg/kg

Section III. Hazards Identification

Acute Health Effects	<p>Highly toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Severely 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. 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>
Chronic Health Effects	<p>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.</p>

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	Wash with soap and water. Get medical attention if irritation develops.
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	Combustible.	Auto-Ignition	Not available.
Flash Points	53°C (127.4°F).	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂). WARNING: Very toxic cyanide gas may be produced in a fire. Do not inhale.		
Fire Hazards	Not available.		

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Emergency phone number (800) 424-9300

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	Combustible liquid. DO NOT USE WATER. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, carbon dioxide or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Consult with local fire authorities before attempting large scale fire-fighting operations.


Section VI. Accidental Release Measures

Spill Cleanup Instructions	This material is toxic by inhalation. Highly toxic material. Combustible material. Severely irritating material. Possible sensitizing material. Lachrymatory material. Moisture sensitive material. Refrigerate material. Keep away from heat. Mechanical exhaust required. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Consult federal, state, and/or local authorities for assistance on disposal.
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Section VII. Handling and Storage

Handling and Storage Information	THIS MATERIAL IS TOXIC BY INHALATION. HIGHLY TOXIC. COMBUSTIBLE. SEVERE IRRITANT. POSSIBLE SENSITIZER. LACHRYMATOR. MOISTURE SENSITIVE. REFRIGERATE AND VENT PRESSURE SLOWLY BEFORE OPENING. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents, acids, 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. (Colorless to light yellow.)	Solubility	Decomposes in water and alcohol.
Specific Gravity	1.10 (water=1)		
Molecular Weight	119.12	Partition Coefficient	Not available.
Boiling Point	162 to 163°C (323.6 to 325.4°F)	Vapor Pressure	0.2 kPa (@ 20°C)
Melting Point	-30°C (-22°F)	Vapor Density	Not available.
Refractive Index	1.53412 @ 25.9°C	Volatility	Not available.
Critical Temperature	Not available.	Odor	Acrid.
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	Moisture sensitive. Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents, acids, strong alkalis (bases), heat, water, alcohols, amines, ammonia, amides, glycols, caprolactam solution.

Section XI. Toxicological Information

RTECS Number	DA3675000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LC ₅₀ (inhalation) 22mg/m ³ /4H Rat LD ₅₀ (oral) 800mg/kg Rabbit LD ₅₀ (dermal) 7130 mg/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.

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Emergency phone number (800) 424-9300

Acute Toxic Effects	Highly toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Severely 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. 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.
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Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Phenyl isocyanate's use as a reagent for identifying alcohols and amines and an intermediate for organic synthesis may result in its release to the environment through various waste streams. If released to water, phenyl isocyanate will hydrolyze rapidly (hydrolysis half-lives of phenyl isocyanate range from 20 seconds to 75.5 minutes). Other fate processes in water will be unimportant by comparison. If released to the atmosphere, phenyl isocyanate will exist primarily in the vapor phase. Vapor-phase phenyl isocyanate will degrade in the atmosphere by reaction with photochemically produced hydroxyl radicals with an estimated half-life of approximately 7.5 days. Removal of atmospheric phenyl isocyanate may occur through wet deposition and hydrolysis. If released to soil, phenyl isocyanate is expected to have high to low mobility based on estimated Koc values of 127 to 955. However, since isocyanates hydrolyze rapidly in water, soil mobility, biodegradation, and other fate processes of phenyl isocyanate in soil are not expected to be important. Volatilization of phenyl isocyanate is not expected from moist soils, but may be important from dry soils. Occupational exposure to phenyl isocyanate can occur through dermal contact and inhalation. Phenyl isocyanate has been detected in polyurethane foundry mold binder, in iron and steel foundry, and in aluminum foundry atmospheres. (HSDB)

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	Forbidden to ship by Air CLASS 6.1: Toxic material. CLASS 3: Flammable liquid.
PIN Number	UN2487
Proper Shipping Name	Phenyl isocyanate
Packing Group (PG)	I (DOT: Zone B; 16ppm)
DOT Pictograms	

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)	CLASS B-3: Combustible liquid with a flash point between 37.8 °C (100 °F) and 93.3 °C (200 °F). CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). On DSL.
EINECS Number (EEC)	203-137-6
EEC Risk Statements	R24/25- Toxic in contact with skin and if swallowed. R26- Very toxic by inhalation. R36/37/38- Irritating to eyes, respiratory system and skin. R42/43- May cause sensitization by inhalation and skin contact.
Japanese Regulatory Data	ENCs No. 3-2213

Section XVI. Other Information

Version 1.0
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Printed 5/16/2007.

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.