








Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
  	<p>Toxic compound, do not ingest or inhale. Avoid all contact with this material.</p> <p>Combustible material; avoid heat and sources of ignition.</p> <p>Irritating to skin, eyes, and the respiratory system.</p> <p>Lachrymator.</p> <p>Environmental hazard. Harmful to aquatic life.</p>	   

Section I. Chemical Product and Company Identification

Chemical Name	4'-Chloroacetophenone		
Catalog Number	C0033	Supplier	TCI America 9211 N. Harborsgate St. Portland OR 1-800-423-8616
Synonym	<i>p</i> -Chloroacetophenone		
Chemical Formula	C ₈ H ₇ ClO		
CAS Number	99-91-2	<div><div>In case of Emergency Call</div><div>Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)</div></div>	

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
4'-Chloroacetophenone	99-91-2	Min. 97.0 (GC)	Not available.	Mouse LD ₅₀ (oral) 1207 mg/kg Mouse LD ₅₀ (inhalation) 1752 mg/m 3/15M Mouse LD ₅₀ (intraperitoneal) 100 mg/kg

Section III. Hazards Identification

Acute Health Effects	<p>Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness 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.</p> <p>Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.</p>
Chronic Health Effects	<p>CARCINOGENIC EFFECTS : Not available.</p> <p>MUTAGENIC EFFECTS : Not available.</p> <p>TERATOGENIC EFFECTS : Not available.</p> <p>DEVELOPMENTAL TOXICITY: Not available.</p> <p>Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.</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	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
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	90 °C (194 °F)	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO ₂), halogenated compounds. WARNING: Highly toxic HCl gas is produced during combustion.		
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.		

Continued on Next Page

Emergency phone number (800) 424-9300

Section VI. Accidental Release Measures**Spill Cleanup Instructions**

Toxic material. Combustible material. Irritating material. Lachrymatory material. Environmentally hazardous material. Keep away from heat. Mechanical exhaust required. Stop leak if without risk. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: DO NOT get water inside container. Absorb with an inert material and put the spilled material in an appropriate waste disposal. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Consult federal, state, and/or local authorities for assistance on disposal.

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

TOXIC. COMBUSTIBLE. IRRITANT. LACHRYMATORY. ENVIRONMENTAL HAZARD. Keep locked up. 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, alkalis (bases).

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. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits**

Not available.

Section IX. Physical and Chemical Properties**Physical state @ 20°C**

Liquid. (Clear, colorless.)

Solubility

Miscible with alcohol, ether.
Practically insoluble in water.

Specific Gravity

1.19 (water=1)

Molecular Weight

154.59

Partition Coefficient

LOG P_{ow}: 2.32

Boiling Point

237°C (458.6°F)

Vapor Pressure

68 Pa (@ 25°C)

Melting Point

15°C (59°F) (freezing point)

Vapor Density

5.2 (Air = 1)

Refractive Index

1.55

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 oxidizing agents, alkalis (bases).

Section XI. Toxicological Information**RTECS Number**

KM5600000

Routes of Exposure

Eye Contact. Ingestion. Inhalation.

Toxicity Data

Mouse LD₅₀ (oral) 1207 mg/kg
Mouse LD₅₀ (inhalation) 1752 mg/m³/15M
Mouse LD₅₀ (intraperitoneal) 100 mg/kg

Chronic Toxic Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY: Not available.
Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Acute Toxic Effects

Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness 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	p-Chloroacetophenone is an anthropogenic compound which is used as a synthetic intermediate. It may be released to the environment as a fugitive emission during its production and use, in wastewater effluent, and as an emission from improperly regulated kerosene heaters. If released to soil, an estimated soil adsorption coefficient of 436 indicates that p-chloroacetophenone will display moderate mobility in soil. It is expected to rapidly volatilize from moist soil to the atmosphere, but only slowly volatilize from dry soil. If released to water, p-chloroacetophenone is expected to rapidly volatilize to the atmosphere. The estimated half-life for volatilization of p-chloroacetophenone from a model river is 4.8 hrs. p-Chloroacetophenone will not bioconcentrate in fish and aquatic organisms although it may weakly adsorb to sediment and suspended organic matter. If released to the atmosphere, p-chloroacetophenone is expected to undergo slow atmospheric removal by a gas-phase reaction with photochemically produced hydroxyl radicals. An estimated half-life for this process is 13.8 days. Occupational exposure to p-chloroacetophenone may occur by inhalation or dermal contact during its production, formulation and use. Members of the general population may be exposed to p-chloroacetophenone during the use of improperly maintained kerosene space heaters.

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	DOT CLASS 6.1: Toxic material
PIN Number	UN3416
Proper Shipping Name	Chloroacetophenone, liquid
Packing Group (PG)	II RQ = 100 (45.4)
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-1B: Material causing immediate and serious toxic effects (TOXIC). On DSL.
EINECS Number (EEC)	202-800-7
EEC Risk Statements	R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R52- Harmful to aquatic organisms.
Japanese Regulatory Data	ENCS No. 3-1241

Section XVI. Other Information

Version 1.0
Validated on 11/3/2010.
Printed 11/3/2010.

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.