

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
 	Flammable liquid having a flash point lower than 37.8°C (100°F). Irritant. Chronic exposure may result in dermatitis. May cause nausea, headache, and vomiting upon exposure.	   

Section I. Chemical Product and Company Identification

Chemical Name	3-Pentanone		
Catalog Number	P0061	Supplier	TCl America 9211 N. Harborgate St. Portland OR 1-800-423-8616
Synonym	Diethyl ketone		
Chemical Formula	CH ₃ CH ₂ COCH ₂ CH ₃		
CAS Number	96-22-0	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
3-Pentanone	96-22-0	Min. 98.0 (GC)	This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.	Rat LD ₅₀ (oral) 2140mg/kg Mouse LD ₅₀ (intravenous) 513mg/kg Rabbit LD ₅₀ (dermal) 20mL/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	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. Toxicity to the reproductive system: Not available. There is no known effect from chronic exposure to this product. 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. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention.
Skin Contact	If the chemical gets spilled on a clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash any contaminated clothing before reusing.
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. SEEK IMMEDIATE MEDICAL ATTENTION in case of ingestion of a radioactive material.

Section V. Fire and Explosion Data

Flammability	Flammable.	Auto-Ignition	452°C (845.6°F)
Flash Points	9°C (48.2°F)	Flammable Limits	LOWER: 1.6%
Combustion Products	These products are toxic carbon oxides (CO, CO ₂).		
Fire Hazards	No specific information is available regarding the flammability of this compound in the presence of various materials.		
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. No additional information is available regarding the risks of explosion.		

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Emergency phone number (800) 424-9300

Fire Fighting Media and Instructions

Flammable liquid, insoluble in water.
SMALL FIRE: Use DRY chemicals, CO₂, alcohol foam or water spray.
LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Section VI. Accidental Release Measures

Spill Cleanup Instructions

Flammable liquid. Irritating material.
 Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT get water inside container. DO NOT touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Call for assistance on disposal. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information

FLAMMABLE. IRRITANT. Keep away from heat and sources of ignition. Ground all equipment containing material. DO NOT ingest. Do not breathe gas, fumes, vapor or spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
 Always store away from incompatible compounds such as oxidizing agents, reducing agents, alkalis.

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 should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.



Exposure Limits

This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid.	Solubility	Easily soluble in diethyl ether. Partially soluble in methanol. Very slightly soluble in hot water, n-octanol, acetone. Insoluble in cold water.
Specific Gravity	0.8138		
Molecular Weight	86.13°C	Partition Coefficient	0.99
Boiling Point	101.7°C (215.1°F)	Vapor Pressure	35.43 mm of Hg (@ 20°C)
Melting Point	-39.8°C (-39.6°F)	Vapor Density	3 (Air = 1)
Refractive Index	1.3905 @ 20°C	Volatility	Not available.
Critical Temperature	287.8°C (550°F)	Odor	Acetone-like
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

Highly reactive with oxidizing agents, reducing agents, alkalis.

Section XI. Toxicological Information

RTECS Number

SA8050000

Routes of Exposure

Eye Contact. Ingestion. inhalation.

Toxicity Data

Rat LD₅₀ (oral) 2140mg/kg
 Mouse LD₅₀ (intravenous) 513mg/kg
 Rabbit LD₅₀ (dermal) 20mL/kg

Chronic Toxic Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
 Toxicity to the reproductive system: Not available.
 There is no known effect from chronic exposure to this product. 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.

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Emergency phone number (800) 424-9300

Section XII. Ecological Information

Ecotoxicity Not available.

Environmental Fate 3-Pentanone is a naturally occurring volatile emitted from many plants and fruits. It is also a combustion product of automobile exhaust and cigarette smoke. It may also enter the environment as emissions or in wastewater from its production and use as a solvent for paints and as a starting material for organic syntheses. Based on an experimental vapor pressure of 37.7 mm Hg at 25 deg C, 3-pentanone is expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase 3-pentanone is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals with an estimated atmospheric half-life of about 8 days. Photochemical degradation of 3-pentanone by natural sunlight is expected to occur at approximately 1/5 the rate of degradation by photochemically produced hydroxyl radicals. 3-Pentanone is expected to have high mobility in soils based an estimated Koc value of 75. Volatilization from dry soil surfaces is expected based upon the vapor pressure of this compound. Volatilization from moist soil surfaces is also expected based upon the estimated Henry's Law constant of 8.9×10^{-5} atm-cu m/mol. This compound has been shown to biodegrade under aerobic conditions. In water, 3-pentanone is not expected to adsorb to suspended solids or sediment based upon its estimated Koc values. Volatilization from water surfaces is expected to be an important environmental fate process given its estimated Henry's Law constant. Estimated half-lives for a model river and model lake are 12 and 155 hours, respectively. Bioconcentration in aquatic organisms is considered low based upon an estimated BCF value of 3. Occupational exposure may be through inhalation and dermal contact with this compound at workplaces where 3-pentanone is produced or used. The general population may be exposed to 3-pentanone through the ingestion of food sources that contain this compound. Exposure may also arise from inhalation of ambient air and ingestion of drinking water.

Section XIII. Disposal Considerations

Waste Disposal Recycle to process, if possible. Consult your local or 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 this substance.

Section XIV. Transport Information

DOT Classification DOT CLASS 3: Flammable liquid.

PIN Number UN1156

Proper Shipping Name Diethyl ketone

Packing Group (PG) II

DOT Pictograms

**Section XV. Other Regulatory Information and Pictograms**

TSCA Chemical Inventory (EPA) This product is **ON** the EPA Toxic Substances Control Act (TSCA) inventory.

WHMIS Classification (Canada) WHMIS CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).

EINECS Number (EEC) 202-490-3

EEC Risk Statements R10- Flammable.
R18- In use, may form flammable/explosive vapor-air mixture.

Japanese Regulatory Data Not available.

Section XVI. Other Information

Version 1.0
Validated on 12/21/2000.
Printed 3/17/2005.

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.