

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
 	Corrosive to eyes and skin on contact. Combustible material; avoid heat and sources of ignition. Harmful compound, minimize exposure. Readily absorbed through skin.	

Section I. Chemical Product and Company Identification

Chemical Name	Propionic Acid		
Catalog Number	P0500	Supplier	TCl America 9211 N. Harbortgate St. Portland OR 1-800-423-8616
Synonym	Carboxyethane		
Chemical Formula	CH ₃ CH ₂ COOH		
CAS Number	79-09-4	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
Propionic Acid	79-09-4	Min. 99.0 (GC,T)	Not available.	Rat LD ₅₀ (oral) 2600 mg/kg Rabbit LD ₅₀ (dermal) 500 uL/kg Mouse LD ₅₀ (intravenous) 625 mg/kg

Section III. Hazards Identification

Acute Health Effects	Corrosive to skin, eyes, and respiratory system. Liquid or spray mist may produce tissue damage, particularly in mucous membranes of the eyes, mouth and respiratory tract. Skin contact may produce burns. Eye contact can result in corneal damage or blindness. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Corrosive materials may cause serious injury if ingested. Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Readily absorbed through skin. 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. DEVELOPMENTAL TOXICITY : Not available. The substance is toxic to mucous membranes, upper respiratory tract, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

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	DO NOT INDUCE VOMITING. 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	485 °C (905 °F)
Flash Points	52 °C (125.6 °F).	Flammable Limits	LOWER: 2.1% UPPER: 12%
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.		

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Emergency phone number (800) 424-9300

Fire Fighting Media
and Instructions

Combustible liquid.
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use alcohol foam, water spray 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 MeasuresSpill Cleanup
Instructions

Corrosive material. Combustible material. Harmful material. Material is readily absorbed through skin.
Keep away from heat. Mechanical exhaust required. 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. Use water spray curtain to divert vapor drift. 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 StorageHandling and Storage
Information

CORROSIVE. COMBUSTIBLE. HARMFUL. READILY ABSORBED THROUGH SKIN. Keep container dry. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. Wear suitable protective clothing. If you feel unwell, seek medical attention and show the label when possible. Treat symptomatically and supportively.

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

Face shield. 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	Miscible with water. Soluble in alcohol, ether.
Specific Gravity	0.992 (water=1)		
Molecular Weight	74.08	Partition Coefficient	Log P _{ow} : 0.33
Boiling Point	141 to 142°C (285.8 to 287.6°F)	Vapor Pressure	390 Pa (@ 20°C)
Melting Point	-24 to -23°C (-11.2 to -9.4°F)	Vapor Density	2.6 (Air = 1)
Refractive Index	1.385 - 1.388	Volatility	Not available.
Critical Temperature	Not available.	Odor	Pungent.
Viscosity	10 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 strong oxidizing agents.

Section XI. Toxicological Information

RTECS Number

UE5950000

Routes of Exposure

Eye Contact. Ingestion. Inhalation.

Toxicity Data

Rat LD₅₀ (oral) 2600 mg/kg
Rabbit LD₅₀ (dermal) 500 uL/kg
Mouse LD₅₀ (intravenous) 625 mg/kg

Chronic Toxic Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY: Not available.
The substance is toxic to mucous membranes, upper respiratory tract, skin, eyes.
Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

Acute Toxic Effects

Corrosive to skin, eyes, and respiratory system. Liquid or spray mist may produce tissue damage, particularly in mucous membranes of the eyes, mouth and respiratory tract. Skin contact may produce burns. Eye contact can result in corneal damage or blindness. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Corrosive materials may cause serious injury if ingested. Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Readily absorbed through skin. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity

Not available.

Environmental Fate

Propionic acid's production and use as a feed and corn preservative, and chemical intermediate may result in its release to the environment through various waste streams. Its use to control fungi and bacteria in drinking water for livestock and poultry is expected to result in its direct release to the environment. It is also released to the environment with the manufacture and use of coal-derived and shale oil liquid fuels and during the disposal of coal liquefaction and gasification and wood preserving chemical waste byproducts. Textile mills, sewage treatment facilities, municipal and industrial landfills, hazardous waste sites, and gasoline and diesel fueled engines can release propionic acid to the environment. If released to air, a vapor pressure of 3.53 mm Hg at 25 deg C indicates propionic acid will exist solely as a vapor in the ambient atmosphere. Vapor-phase propionic acid 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 11 days. Photolysis of propionic acid is not expected to be important fate processes. Propionic acid is miscible in water and monitoring data has shown that physical removal from air by wet deposition is an important removal mechanism. If released to soil, propionic acid is expected to have very high mobility based upon an estimated Koc of 1.2. Volatilization from moist soil surfaces is not expected to be an important fate process based upon a Henry's Law constant of 4.45×10^{-7} atm-cu m/mole. Propionic acid may volatilize from dry soil surfaces based upon its vapor pressure. Biodegradation is likely to be the most important removal mechanism of propionic acid from soil. If released into water, propionic acid is not expected to adsorb to suspended solids and sediment in water based upon the estimated Koc. Biodegradation is likely to be the most important removal mechanism of propionic acid from water. A pKa of 4.87 indicates propionic acid will exist in the ionized form at pH values of 5 to 9 and therefore volatilization from water surfaces is not expected to be an important fate process. Hydrolysis is not expected to occur due to the lack of hydrolyzable functional groups. Occupational exposure to propionic acid may occur through inhalation and dermal contact with this compound at workplaces where propionic acid is produced or used. The general population may be exposed to propionic acid via inhalation of ambient air, ingestion of food and drinking water, and dermal contact with this compound and other consumer products containing propionic acid.

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 8: Corrosive material
DOT Class 3: Flammable liquid

PIN Number

UN3463

Proper Shipping Name

Propionic Acid

Packing Group (PG)

II

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 E: Corrosive liquid.
On DSL

EINECS Number (EEC)

201-176-3

EEC Risk Statements

R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.
R34- Causes burns.

Japanese Regulatory Data

ENCS No. 2.602

Section XVI. Other Information**Version 1.0****Validated on 3/26/2007.****Printed 3/26/2007.****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.

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