

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
  	<p>Flammable material; avoid heat and sources of ignition. Corrosive to eyes and skin on contact. Toxic compound, do not ingest or inhale. Avoid all contact with this material. May develop pressure. Open carefully. May form explosive mixtures in air. Heat sensitive. Freeze.</p>	

Section I. Chemical Product and Company Identification

Chemical Name	Hydrogen Chloride (ca. 1mol/L Ethyl Acetate)		
Catalog Number	H1060	Supplier	TCI America 9211 N. Harborage St. Portland OR 1-800-423-8616
Synonym	Not available.		
Chemical Formula	HCl		
CAS Number	7647-01-0 (HCl) 141-78-6 (Ethyl Acetate)	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
Hydrogen Chloride <small>(ca. 1mol/L Ethyl Acetate)</small>	7647-01-0 (HCl) 141-78-6 (Ethyl Acetate)	Approx. 4.0 Approx. 96.0	ACGIH TLV-CL 5ppm (HCl) ACGIH TLV-TWA 400ppm (Ethyl Acetate)	<p>HCl: Rat LC₅₀ (inhalation) 60938mg/m³/5M Rat LC₅₀ (inhalation) 3124ppm/1H Rat LC₅₀ (inhalation) 3940mg/m³/30M</p> <p>Ethyl Acetate: Rat LC₅₀ (inhalation) 200gm/m³ Rat LD₅₀ (oral) 5620mg/kg Rabbit LD₅₀ (dermal) >20ml/kg</p>

Section III. Hazards Identification

Acute Health Effects	<p>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. Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. 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 : REPRODUCTIVE EFFECTS: Hydrogen Chloride: Rat TCl₀ (Inhalation) 450mg/m³/1 Hour, female, 1 Day prior to mating. Toxic Effects: Effects on Embryo or Fetus- Fetotoxicity. Specific Developmental Abnormalities- Homeostasis. 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. 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	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.

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Emergency phone number (800) 424-9300

Section V. Fire and Explosion Data

Flammability	Flammable.	Auto-Ignition	427°C (800.6°F) (Ethyl Acetate)
Flash Points	-3°C (26.6°F) (C.C.) (Ethyl Acetate)	Flammable Limits	LOWER: 2.2% UPPER: 11.5% (Ethyl Acetate)
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	Flammable liquid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Consult with local fire authorities before attempting large scale fire-fighting operations.		

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Flammable liquid. Corrosive liquid. Toxic liquid. May develop pressure. May form explosive mixtures in air. Heat sensitive. 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. 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.
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Section VII. Handling and Storage

Handling and Storage Information	FLAMMABLE. CORROSIVE. TOXIC. MAY DEVELOP PRESSURE. MAY FORM EXPLOSIVE MIXTURES IN AIR. HEAT SENSITIVE. FREEZE. Keep locked up. Keep container dry. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. 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, metals, 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	Face shield. 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	ACGIH TLV-CL 5ppm (HCl) ACGIH TLV-TWA 400ppm (Ethyl Acetate)

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid. (Clear.)	Solubility	HCl: Soluble in water, alcohol, benzene and ether. Insoluble in hydrocarbons. Ethyl Acetate: Soluble in alcohol, ether, acetone and benzene. Miscible with chloroform.
Specific Gravity	0.9 (water=1) (Ethyl Acetate)	Partition Coefficient	Not available.
Molecular Weight	36.46 (HCl) 88.11 (Ethyl Acetate)	Vapor Pressure	9.7kPa (@ 20°C)
Boiling Point	77 to 78°C (170.6 to 172.4°F) (Ethyl acetate)	Vapor Density	1.27 (Air = 1) (HCl) 3.04 (Air = 1) (Ethyl acetate)
Melting Point	-84°C (-119.2°F) (Ethyl acetate)	Volatility	Not available.
Refractive Index	1.37(Ethyl acetate)	Odor	Pungent.
Critical Temperature	Not available.	Taste	Not available.
Viscosity	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	Heat sensitive. Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents, metals, acids, alkalis (bases), copper, copper alloys, aluminum, amines.

Section XI. Toxicological Information

RTECS Number	MW4025000 (HCl) AH5425000 (Ethyl acetate)
Routes of Exposure	Eye Contact. Ingestion. Inhalation. Skin contact.
Toxicity Data	HCl: Rat LC ₅₀ (inhalation) 60938mg/m ³ /5M Rat LC ₅₀ (inhalation) 3124ppm/1H Rat LC ₅₀ (inhalation) 3940mg/m ³ /30M Ethyl Acetate: Rat LC ₅₀ (inhalation) 200gm/m ³ Rat LD ₅₀ (oral) 5620mg/kg Rabbit LD ₅₀ (dermal) >20ml/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY : REPRODUCTIVE EFFECTS: Hydrogen Chloride: Rat TCl ₀ (Inhalation) 450mg/m ³ /1 Hour, female, 1 Day prior to mating. Toxic Effects: Effects on Embryo or Fetus- Fetotoxicity. Specific Developmental Abnormalities- Homeostasis. 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. 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	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. Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Ethyl acetate's production and use as a pharmaceutical aid, in artificial fruit essences, and as a solvent may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 93 mm Hg at 25 deg C indicates ethyl acetate will exist solely as a vapor in the ambient atmosphere. Vapor-phase ethyl acetate 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 9.4 days. If released to soil, ethyl acetate is expected to have high mobility based upon an estimated Koc of 59. Volatilization from moist soil surfaces is expected to occur based upon a Henry's Law constant of 1.34X10 ⁻⁴ atm-cu m/mole. Ethyl acetate's vapor pressure indicates the potential for volatilization from dry soil surfaces exists. Biodegradation is expected to be an important process in both soil and water, based upon ethyl acetate's biodegradation in aqueous screening studies. 93% biodegradation was observed in a complete mix continuous-flow activated sludge system. 26.6 and 57.1% of ethyl acetate's theoretical BOD was reached in 5 days using the standard dilution method and seawater dilution method, respectively. If released into water, ethyl acetate is not expected to adsorb to suspended solids and sediment in water based on the estimated Koc. Volatilization from water surfaces is expected to be an important fate process based on ethyl acetate's Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 8.9 hours and 5.6 days, respectively. An estimated BCF of 3.2 suggests the potential for bioconcentration in aquatic organisms is low. Ethyl acetate's hydrolysis half-life at 25 deg C and pH 7 is 2.0 years. Occupational exposure to ethyl acetate may occur through inhalation and dermal contact with this compound at workplaces where ethyl acetate is produced or used or where adhesives, thinners, degreasers, paints, inks, and dome reagents are used. The general population may be exposed to ethyl acetate via inhalation of ambient air, ingestion of food and drinking water, or dermal contact with consumer products containing this compound. (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	CLASS 3: Flammable liquid. Class 8: Corrosive material.
PIN Number	UN2924
Proper Shipping Name	Flammable liquids, corrosive, n.o.s.
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. On EPA IRIS Database. Deminimis: 1.0%
WHMIS Classification (Canada)	CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS E: Corrosive liquid.
EINECS Number (EEC)	231-595-7 (HCl) 205-500-4 (Ethyl Acetate)
EEC Risk Statements	R11- Highly flammable. R18- In use, may form flammable/explosive vapor-air mixture. R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R34- Causes burns.
Japanese Regulatory Data	ENCS No. 1-215 (HCl) 2-726 (Ethyl Acetate)

Section XVI. Other Information**Version 1.0****Validated on 1/9/2007.****Printed 1/9/2007.****Notice to Reader**

TCl 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.