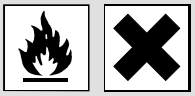
TCI AMERICA

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	**Flammable material; avoid heat and sources of ignition.** **Irritating to skin, eyes, and the respiratory system.**	

Section I. Chemical Product and Company Identification

Chemical Name: **Acetic Acid Isobutyl Ester**

Catalog Number	A0034
Synonym	Acetic Acid 2-methylpropyl Ester; Isobutyl acetate
Chemical Formula	$CH_3COOCH_2CH(CH_3)_2$
CAS Number	110-19-0

Supplier: TCI America
9211 N. Harborgate St.
Portland OR
1-800-423-8616

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
Acetic Acid Isobutyl Ester	110-19-0	Min. 99.0 (GC)	Not available.	Rat LD_{50} (oral) 13400mg/kg Rabbit LD_{50} (oral) 4763mg/kg Rabbit LD_{50} (dermal) >17400mg/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.
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.

Section IV. First Aid Measures

Eye Contact

Check for and remove any contact lenses. IMMEDIATELY flush eyes with runing water for at least 15 minutes. keeping eyelids open. COLD water may be used. DO NOT use an eye oitment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper eyelids. Seek medical attention. Treat symptomatically and supportively.

Skin Contact

After contact with skin, wash immediately with plenty of water. Gently and thorough wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.

Inhalation

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform artificial respiration. WARNING: It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.

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, administer artificial respiration. 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 and, if possible, show the chemical label. Treat symptomatically and supportively.

Section V. Fire and Explosion Data

Flammability	Flammable.	Auto-Ignition	Not available.
Flash Points	21°C (69.8°F).	Flammable Limits	Not available.

Combustion Products

These products are toxic carbon oxides (CO, CO_2).

Fire Hazards

Reactive with strong oxidizers. Vapros may travel to source of ignition and flash back. Closed containers may explode from heat of a fire. Highly flammable in presence of open flames nad sparks, of heat.

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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Fire Fighting Media and Instructions	Flammable liquid. SMALL FIRE: Use DRY chemicals, CO_2, alcohol foam or water spray. LARGE FIRE: Use alcohol foam, water spray or fog.

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Flammable liquid. Irritating material. Keep away from heat and sources of ignition. 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. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information	FLAMMABLE. IRRITANT. Handle with caution and minimize exposure. DO NOT ingest. Do not breathe gas, fumes, vapor or 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. Be sure to use a MSHA/NIOSH approved respirator or equivalent. 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	Colorless liquid.	Solubility	Very soluble in ethanol and ether. Soluble in acetone and in 80 parts water.
Specific Gravity	0.868		
Molecular Weight	116.16	Partition Coefficient	Not available.
Boiling Point	115 to 117°C (239 to 242.6°F)	Vapor Pressure	15 mm Hg @ 20°C
Melting Point	-99 to -98°C (-146.2 to -144.4°F)	Vapor Density	>4
Refractive Index	1.3907 @ 19°C	Volatility	Not available.
Critical Temperature	Not available.	Odor	Fruity, floral odor.
Viscosity	Not available.	Taste	Banana taste.

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, strong alkalis (bases).

Section XI. Toxicological Information

RTECS Number	AI4025000
Routes of Exposure	Eye contact. Ingestion. Inhalation. Skin contact.
Toxicity Data	Rat LD_{50} (oral) 13400mg/kg Rabbit LD_{50} (oral) 4763mg/kg Rabbit LD_{50} (dermal) >17400mg/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	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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Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Isobutyl acetate's production and use as a solvent for nitrocellulose, in thinners and sealants, in topcoat lacquers and as a flavoring ingredient may lead to its release to the environment through various waste streams. Isobutyl acetate occurs naturally in bananas and other fruits such as apples and may be released into the environment as a plant volatile. Based on a vapor pressure of 17.8 mm Hg at 25°C, isobutyl acetate is expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase isobutyl acetate is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals with an atmospheric half-life of about 70 hours. Isobutyl acetate is expected to have moderate mobility in soils based upon an estimated Koc value of 200. 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 Henry's Law constant of 4.5X10-4 atm-cu m/mol. This compound is expected to biodegrade in the environment based on a standard BOD study. In water, isobutyl acetate is not expected to adsorb to sediment or particulate matter given its estimated Koc value. This compound is expected to volatilize from water surfaces given its Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 5 and 118 hours respectively. Hydrolysis is expected to occur slowly based upon estimated hydrolysis half-livesof 3 years and 122 days at pH 7 and 8 respectively. The potential for bioconcentration in aquatic organisms is considered low based on an estimated BCF value 10. Occupational exposure may be through inhalation and dermal contact with this compound at workplaces where isobutyl acetate is produced or used. The general population may be exposed to isobutyl acetate through the ingestion of food sources that contain this compound.

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 the substance.

Section XIV. Transport Information

DOT Classification	DOT CLASS 3: Flammable liquid.
PIN Number	UN1213
Proper Shipping Name	Isobutyl Acetate
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)	WHMIS CLASS B-2: Flammable liquid with a flash point lower than 35°C (100°F).
EINECS Number (EEC)	203-745-1
EEC Risk Statements	R10- Flammable. R18- In use, may form flammable/explosive vapor-air mixture. R36/37/38- Irritating to eyes, respiratory system and skin.
Japanese Regulatory Data	Not available.

Section XVI. Other Information

Version 1.0
Validated on 4/9/1999.
Printed 1/10/2005.

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.