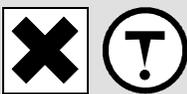


Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Harmful compound, minimize exposure. Irritating to skin, eyes, and the respiratory system. Combustible material; avoid heat and sources of ignition. Risk of serious damage to eyes. CARCINOGEN. MINIMIZE EXPOSURE. Risk of irreversible effects. DANGER, MAY CAUSE CANCER.	

Section I. Chemical Product and Company Identification

Chemical Name	Isophorone		
Catalog Number	I0151	Supplier	TCI America 9211 N. Harborside St. Portland OR 1-800-423-8616
Synonym	1,1,3-Trimethyl-3-cyclohexene-5-one		
Chemical Formula	C ₉ H ₁₄ O		
CAS Number	78-59-1	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
Isophorone	78-59-1	Min. 97.0 (GC)	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.	Rat LC ₅₀ (inhalation) 7g/m ³ Rat LD ₅₀ (oral) 1870mg/kg Rabbit LD ₅₀ (dermal) 1500µl/kg

Section III. Hazards Identification

Acute Health Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury 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.
Chronic Health Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Tumorigenic Effects: Rat TDLo (oral) 180 gm/kg/2 years intermittent. Toxic Effects: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria. Kidney, Ureter, and Bladder - Kidney tumors. Mouse TDLo (oral) 258 gm/kg/2 years intermittent. Toxic Effects: Tumorigenic - Carcinogenic by RTECS criteria. Kidney, Ureter, and Bladder - Kidney tumors. DEVELOPMENTAL TOXICITY Reproductive Effects: Rat TCLo (inhalation) 115 ppm/6 hours, female 6-15 days of pregnancy. Toxic Effects: Maternal Effects - Other Effects. Mouse TCLo (inhalation) 115 ppm/6 hours, female 6-15 days of pregnancy. Toxic Effects: Maternal Effects - Other Effects. 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. 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	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	Combustible.	Auto-Ignition	Not available.
Flash Points	84°C (183.2°F).	Flammable Limits	LOWER: 0.8% UPPER: 3.8%
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.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.		

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Harmful material. Irritating material. Combustible material. Carcinogenic material. Risk of serious damage to eyes. Risk of irreversible effects. Keep away from heat. Mechanical exhaust required. Stop leak if without risk. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Consult federal, state, and/or local authorities for assistance on disposal.
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Section VII. Handling and Storage

Handling and Storage Information	HARMFUL. IRRITANT. COMBUSTIBLE. CARCINOGEN. RISK OF SERIOUS DAMAGE TO EYES. RISK OF IRREVERSIBLE EFFECTS. 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, 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	Splash goggles. 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	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid. (Clear, colorless.)	Solubility	Soluble in alcohol, ether, acetone.
Specific Gravity	0.9229(water=1)		
Molecular Weight	138.21	Partition Coefficient	Not available.
Boiling Point	213 to 214°C (415.4 to 417.2°F)	Vapor Pressure	0.1 kPa (@ 20°C)
Melting Point	-8.1°C (17.4°F)	Vapor Density	4.77 (Air = 1)
Refractive Index	1.4759 @ 20°C	Volatility	Not available.
Critical Temperature	Not available.	Odor	Camphor 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	Reactive with strong oxidizing agents, strong acids, strong alkalis (bases).

Section XI. Toxicological Information

RTECS Number	GW7700000
Routes of Exposure	Eye Contact. Ingestion. inhalation.
Toxicity Data	Rat LC ₅₀ (inhalation) 7g/m ³ Rat LD ₅₀ (oral) 1870mg/kg Rabbit LD ₅₀ (dermal) 1500µl/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Tumorigenic Effects: Rat TDLo (oral) 180 gm/kg/2 years intermittent. Toxic Effects: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria. Kidney, Ureter, and Bladder - Kidney tumors. Mouse TDLo (oral) 258 gm/kg/2 years intermittent. Toxic Effects: Tumorigenic - Carcinogenic by RTECS criteria. Kidney, Ureter, and Bladder - Kidney tumors. DEVELOPMENTAL TOXICITY Reproductive Effects: Rat TClO (inhalation) 115 ppm/6 hours, female 6-15 days of pregnancy. Toxic Effects: Maternal Effects - Other Effects. Mouse TClO (inhalation) 115 ppm/6 hours, female 6-15 days of pregnancy. Toxic Effects: Maternal Effects - Other Effects. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.
Acute Toxic Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury 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	Isophorone is used as a solvent for a large number of natural and synthetic polymers, resins, waxes, fats, oils, and pesticides, in addition to being used as a chemical intermediate. As a result this compound may be released to the environment from a wide variety of industries, from the disposal of many different products and during the application of some pesticides. If released to soil or water, isophorone is predicted to be removed partially by volatilization (half-life 7.5 days from a model river) and partially by biodegradation. Potential biodegradation products include: 3,5,5-trimethyl-2-cyclohexene-1,4-dione, 3,5,5-trimethylcyclohexane-1,4-dione, (S)-4-hydroxy-3,5,5-trimethyl-2-cyclohexen-1-one, and 3-hydroxymethyl-5,5-dimethyl-2-cyclohexen-1-one. Potential exists for contamination of groundwater by leaching through soil. Isophorone is not expected to sorb significantly to suspended solids and sediments in water, bioaccumulate significantly in aquatic organisms, photolyze, oxidize by reaction with singlet oxygen or alkyperoxy radicals in water, or undergo chemical hydrolysis. If released to air, isophorone is expected to exist primarily in the vapor phase. Reaction with ozone is expected to be the dominant removal process and reaction with photochemically generated hydroxyl radicals is expected to be of minor importance (overall half-life 32 min). Isophorone emitted to the atmosphere in particulate form may be removed by wet or dry deposition. The most probable route of human exposure to isophorone in the ambient environment is by ingestion of drinking water contaminated with this compound. Worker exposure may occur by inhalation or dermal contact.

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	Not a DOT controlled material (United States).
PIN Number	Not available.
Proper Shipping Name	Not available.
Packing Group (PG)	Not available.
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).
EINECS Number (EEC)	201-126-0
EEC Risk Statements	R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R41- Risk of serious damage to eyes. R45- May cause cancer.
Japanese Regulatory Data	ENCS No: (3-2381, 3-2389)

Section XVI. Other Information

Version 1.0
Validated on 9/10/2001.
Printed 2/22/2005.

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.