



Material Safety Data Sheet

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

Section I. Chemical Product and Company Identification

Chemical Name	4-Methyl-2-pentanol		
Catalog Number	M0386	Supplier	TGI America 9211 N. Harborage St. Portland OR 1-800-423-8616
Synonym	Isobutylmethylcarbinol		
Chemical Formula	$(CH_3)_2CHCH_2CH(OH)CH_3$		
CAS Number	108-11-2	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
4-Methyl-2-pentanol	108-11-2	Min. 98.0%(GC)	Not available.	Rat LD ₅₀ (oral) 2590 mg/kg Rabbit LD ₅₀ (dermal) 3536 uL/kg Guinea Pig LD ₅₀ (oral) 812 mg/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 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.

Section V. Fire and Explosion Data

Flammability	Combustible.	Auto-Ignition	305 °C (581 °F)
Flash Points	43 °C (109.4 °F).	Flammable Limits	LOWER: 1% UPPER: 5.5%
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	Combustible Material. 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.		

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Emergency phone number (800) 424-9300

Section VI. Accidental Release Measures

Spill Cleanup Instructions Combustible Material. Irritating Material.
Keep away from heat. 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.

Section VII. Handling and Storage

Handling and Storage Information COMBUSTIBLE. IRRITANT. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. Do not breathe gas/fumes/ vapor/spray.
Always store away from incompatible compounds such as oxidizing agents.

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 Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid. (Clear, Colorless.)	Solubility	Soluble in water, ether, alcohol.
Specific Gravity	0.81(water=1)		
Molecular Weight	102.17	Partition Coefficient	Log P _{ow} 1.43
Boiling Point	132°C (269.6°F)	Vapor Pressure	Not available.
Melting Point	-90°C (-130°F)	Vapor Density	3.53 (Air = 1)
Refractive Index	1.409 to 1.413	Volatility	Not available.
Critical Temperature	Not available.	Odor	Mild.
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.

Section XI. Toxicological Information

RTECS Number	SA7350000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD ₅₀ (oral) 2590 mg/kg Rabbit LD ₅₀ (dermal) 3536 uL/kg Guinea Pig LD ₅₀ (oral) 812 mg/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY : Not available. 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.

Section XII. Ecological Information

Ecotoxicity Not available.

Environmental Fate 4-Methyl-2-pentanol may be released to the environment as a result of its manufacture and use as a solvent and its use in organic synthesis and brake fluids. It may be formed naturally as it has been found in the volatiles from mountain Beaufort cheese. If released to soil, it will be expected to exhibit high to very high mobility in soil based upon an estimated Koc; it may, therefore, leach through soil to groundwater. It will not hydrolyze in moist soil, but it may be subject to volatilization from near surface soil based upon estimated rates for its volatilization from water. It may be subject to biodegradation in soil based upon the rapid biodegradation observed in laboratory aqueous screening tests using sewage and activated sludge inoculums. If released to water, it will not be expected to adsorb to sediment and suspended particulate matter or to bioconcentrate in aquatic organisms based upon estimated Koc and BCF. It will not be expected to hydrolyze or directly photolyze. It may be subject to biodegradation in natural waters based upon the rapid biodegradation observed in laboratory aqueous screening tests using sewage and activated sludge inoculum. It will be subject to volatilization from surface waters based upon half-lives of 23 hr for volatilization from a model river one meter deep flowing 1 m/sec with a wind velocity of 3 m/sec and 10.6 days for volatilization from a model pond. If released to the atmosphere, it can be expected to exist mainly in the vapor-phase in the ambient atmosphere based upon its vapor pressure. The estimated half-life for the reaction with photochemically produced hydroxyl radicals is 2.3 days at an atmospheric concentration of 5×10^5 hydroxyl radicals per cu cm, based upon a measured rate constant. 4-Methyl-2-pentanol has been rated a moderately reactive compound with respect to ozone formations as observed in smog chamber tests. It will not be expected to directly photolyze in the atmosphere. Any general population exposure occurs mainly through the oral ingestion of contaminated drinking water and foods, such as certain cheeses, and through the inhalation of contaminated ambient air. Minor exposure may occur through dermal contact with contaminated water. Occupational exposure may occur through inhalation of contaminated air and dermal contact with solutions containing the compound.

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 3: Flammable liquid.

PIN Number UN2053

Proper Shipping Name Methyl isobutyl carbinol

Packing Group (PG) III

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).
On DSL.

EINECS Number (EEC) 203-551-7

EEC Risk Statements R36/37/38- Irritating to eyes, respiratory system and skin.

Japanese Regulatory Data ENCS No. (2)-217

Section XVI. Other Information

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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.