



Effective Date: 02/04/14
Replaces Revision: 05/06/09

NON-EMERGENCY TELEPHONE
610-866-4225

24-HOUR CHEMTREC EMERGENCY TELEPHONE
800-424-9300

SDS – SAFETY DATA SHEET

1. Identification

Product Identifier: METHYL ISOBUTYL KETONE

Synonyms: 2-Pentanone,4-methyl-; Hexone; MIBK; Isopropylacetone

Chemical Formula: CH₃COCH₂CH(CH₃)₂

Recommended Use of the Chemical and Restrictions On Use: Industrial Use

Manufacturer / Supplier: Puritan Products; 2290 Avenue A, Bethlehem, PA 18017 **Phone:** 610-866-4225

Emergency Phone Number: 24-Hour Chemtrec Emergency Telephone 800-424-9300

2. Hazard(s) Identification

Classification of the Substance or Mixture:

Flammable liquids (Category 2)

Acute toxicity, Oral (Category 5)

Acute toxicity, Inhalation (Category 4)

Skin irritation (Category 3)

Eye irritation (Category 2A)

Specific target organ toxicity - single exposure (Category 3)

Risk Phrases:

R11: Highly flammable.

R20: Harmful by inhalation.

R36: Irritating to eyes.

R37: Irritating to respiratory system.

Label Elements:

Trade Name: METHYL ISOBUTYL KETONE

Signal Word: Danger



Hazard Statements:

H225: Highly flammable liquid and vapor.
H303: May be harmful if swallowed.
H316: Causes mild skin irritation.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.
H335: May cause respiratory irritation.

Precautionary Statements:

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261: Avoid breathing dust / fume / gas / mist / vapors / spray.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

3. Composition / Information on Ingredients

CAS Number: 108-10-1
EC Number: 203-550-1
Index Number: 606-004-00-4
Molecular Weight: 100.16 g/mol

Ingredient	CAS Number	EC Number	Percent	Hazardous	Chemical Characterization
Methyl Isobutyl Ketone	108-10-1	203-550-1	90 - 100%	Yes	Substance

4. First-aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give Oxygen. Get medical attention.

Ingestion: Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention.

5. Fire-fighting Measures

Fire: Flammable liquid.

Explosion: Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Contact with strong oxidizers may cause fire. Sealed containers may rupture when heated. Sensitive to static discharge. Sensitive to mechanical impact if peroxides are formed.

Fire Extinguishing Media: Dry chemical, foam or Carbon Dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Environmental Precautions and Methods and Materials for Containment and Cleaning Up: Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth,) and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Precautions for Safe Handling and Conditions for Safe Storage, Including Any Incompatibilities: Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Before using bulk quantities of this material, test for presence of explosive peroxides. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid.) Observe all warnings and precautions listed for the product.

8. Exposure Controls / Personal Protection

Airborne Exposure Limits:

OSHA Permissible Exposure Limit (PEL): 100 ppm (TWA)

ACGIH Threshold Limit Value (TLV): 50 ppm (TWA), 75 ppm (STEL)

Ventilation System: A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): If the exposure limit is exceeded and engineering controls are not feasible, a full face piece respirator with organic vapor cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full face piece positive-pressure, air-supplied respirator. **WARNING:** Air purifying respirators do not protect workers in Oxygen-deficient atmospheres.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Butyl rubber is a suitable material for personal protective equipment.

Eye Protection: Use chemical safety goggles and / or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance: Clear, colorless liquid

Odor: Slight camphor odor

Odor Threshold: Not determined

pH: No information found

% Volatiles by volume @ 21C (70F): 100

Melting Point: -80C (-112F)

Boiling Point / Boiling Range: 117-118C (243-244F)

Flash Point: 14C (57F) CC

Evaporation Rate (BuAC=1): 5.6

Flammability: Flammable liquid

Upper / Lower Flammability or Explosive Limits: Upper – 8.0 / Lower – 1.2
Vapor Pressure (mm Hg): 16 @ 20C (68F)
Vapor Density (Air=1): 3.5
Relative Density: 0.8 g/mL at 20C (68F)
Solubility: 16 @ 20C (68F)
Partition Coefficient: n-octanol / water: log Pow: 1.31
Auto-ignition Temperature: 448C (838F)
Decomposition Temperature: No information found
Viscosity: No information found

10. Stability and Reactivity

Reactivity and / or Chemical Stability: Stable under ordinary conditions of use and storage. May form explosive peroxides in air.

Possibility of Hazardous Reactions and Conditions to Avoid: Heat, flames, ignition sources and incompatibles.

Incompatible Materials: Aldehydes, Nitric Acid, Perchloric Acid, Strong Oxidizers. Violent reaction with Potassium-tert-butoxide.

Hazardous Decomposition Products: Carbon Dioxide and Carbon Monoxide may form when heated to decomposition.

11. Toxicological Information

Emergency Overview: DANGER! HARMFUL OR FATAL IF SWALLOWED. FLAMMABLE LIQUID AND VAPOR. MAY FORM EXPLOSIVE PEROXIDES IN AIR. HARMFUL IF INHALED. AFFECTS CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEYS. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Potential Health Effects:

Inhalation: Causes irritation to the nose and throat. Concentrations above the TLV may cause headache, dizziness, nausea, shortness of breath, and vomiting. Higher concentrations may cause central nervous system depression and unconsciousness.

Ingestion: May produce abdominal pain, nausea. Aspiration into lungs can produce severe lung damage and is a medical emergency. Other symptoms expected to parallel inhalation.

Skin Contact: Causes irritation to skin. Symptoms include redness, itching, and pain.

Eye Contact: Vapors are irritating to the eyes. Splashes can cause severe pain and irritation.

Chronic Exposure: Prolonged skin contact may defat the skin and produce dermatitis. Based on animal studies, chronic exposure may affect liver and kidneys.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders, eye problems, impaired respiratory function or central nervous system conditions may be more susceptible to the effects of this substance.

Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System:) May cause respiratory irritation.

Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System:) No data available.

Numerical Measures of Toxicity: Cancer Lists: NTP Carcinogen

Ingredient	Known	Anticipated	IARC Category
Methyl Isobutyl Ketone (108-10-1)	No	No	None

Acute Toxicity:

Oral rat LD50: 2080 mg/kg; Skin rabbit >> 20 mL/kg; irritation eye rabbit, Standard Draize, 40 mg severe; investigated as a reproductive effector.

Reproductive Toxicity: No data available.

12. Ecological Information

Ecotoxicity:

Toxicity to fish LC0 - *Leuciscus idus melanotus* - 480 mg/l - 48 h

Toxicity to daphnia and other aquatic invertebrates EC50 - *Daphnia magna* (Water flea) - 1,550 - 3,623 mg/l - 24 h

Toxicity to algae EC50 - *Desmodesmus subspicatus* (green algae) - 980 - 2,000 mg/l - 48 h

Persistence and Degradability: When released into the soil, this material may biodegrade to a moderate extent. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals.

Bioaccumulative Potential: This material is not expected to significantly bioaccumulate.

Mobility in Soil: When released into the soil, this material is expected evaporate to a moderate extent. When released into the soil, this material may leach into groundwater.

Other adverse effects: When released into water, this material may evaporate to a moderate extent. This material has an estimated bioconcentration factor (BCF) of less than 100. When released into the air, this material is expected to have a half-life between 1 and 10 days.

13. Disposal Considerations

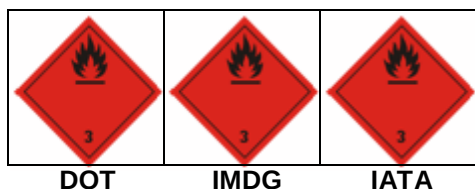
Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

UN Number: UN1245

UN Proper Shipping Name: METHYL ISOBUTYL KETONE

Packing Group: II



Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)

Transport Hazard Class(es): 3

Maritime Transport IMDG/GGVSea

Transport Hazard Class(es): 3

Marine Pollutant: No

Air Transport ICAO-TI and IATA-DGR

Transport Hazard Class(es): 3

Transport in Bulk according to Annex II of MARPOL 73/78 and the IBC Code

Special Precautions for User: No additional information

15. Regulatory Information

Chemical Inventory Status – Part 1

Ingredient	TSCA	EC	Japan	Australia
Methyl Isobutyl Ketone (108-10-1)	Yes	Yes	Yes	Yes

Chemical Inventory Status – Part 2

Ingredient	Korea	Canada		Phil.
		DSL	NDSL	
Methyl Isobutyl Ketone (108-10-1)	Yes	Yes	No	Yes

Federal, State & International Regulations - Part 1

	SARA 302		SARA 313	
Ingredient	RQ	TPQ	List Chemical	Catg.
Methyl Isobutyl Ketone (108-10-1)	No	No	Yes	No

Federal, State & International Regulations - Part 2

	RCRA		TSCA
Ingredient	CERCLA	261.33	8(d)
Methyl Isobutyl Ketone (108-10-1)	5000	U161	No

Chemical Weapons Convention: No		TSCA 12(b): Yes		CDTA: Yes
SARA 311/312:	Acute: Yes	Chronic: Yes	Fire: Yes	Pressure: No
Reactivity: Yes		Pure / Liquid		

Australian Hazchem Code: 3{Y}E

Poison Schedule: S5

16. Other Information

THE INFORMATION CONTAINED IN THIS DATA SHEET IS BASED ON THE DATA AVAILABLE TO PURITAN PRODUCTS AT THIS TIME. WHILE BELIEVED TO BE ACCURATE, PURITAN PRODUCTS DOES NOT CLAIM IT TO BE ALL INCLUSIVE. IT IS PROVIDED INDEPENDENT OF ANY SALE OF THE PRODUCT, FOR THE PURPOSE OF HAZARD COMMUNICATION, AND AS A GUIDE FOR THE APPROPRIATE PRECAUTIONARY HANDLING OF THE PRODUCT BY PROPERLY TRAINED INDIVIDUALS. IT IS NOT INTENDED TO PROVIDE PRODUCT PERFORMANCE OR APPLICABILITY INFORMATION, AND NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND IS MADE WITH RESPECT TO THE PRODUCT, THE UNDERLYING PRODUCT DATA, OR THE INFORMATION CONTAINED HEREIN.

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