



PURITAN PRODUCTS

Effective Date: 04/13/16

Replaces Revision: 05/01/13, 08/17/05

NON-EMERGENCY TELEPHONE
610-866-4225

24-HOUR CHEMTREC EMERGENCY TELEPHONE
800-424-9300

SDS – SAFETY DATA SHEET

1. Identification

Product Identifier: METHYL ETHYL KETONE

Synonyms: 2-Butanone, Ethyl Methyl Ketone, MEK, Methyl Acetone

Chemical Formula: CH₃COCH₂CH₃

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 5)

Skin irritation (Category 2)

Eye irritation (Category 2A)

Specific target organ toxicity - single exposure (Category 3)

Risk Phrases:

R11: Highly flammable.

R36: Irritating to eyes.

R66: Repeated exposure may cause skin dryness or cracking.

R67: Vapors may cause drowsiness and dizziness.

Label Elements:

Trade Name: METHYL ETHYL KETONE

Signal Word: Danger



Hazard Statements:

H225: Highly flammable liquid and vapor.
 H303 + H333: May be harmful if swallowed or if inhaled.
 H315: Causes skin irritation.
 H319: Causes serious eye irritation.
 H336: May cause drowsiness or dizziness.

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: 78-93-3
EC Number: 201-159-0
Index Number: 606-002-00-3
Molecular Weight: 72.11 g/mol

| Ingredient | CAS Number | EC Number | Percent | Hazardous | Chemical Characterization |
|---------------------|------------|-----------|-----------|-----------|---------------------------|
| Methyl Ethyl Ketone | 78-93-3 | 201-159-0 | 99 - 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: Extremely Flammable Liquid and Vapor! Flash point: -9C (16F) CC / Autoignition temperature: 404C (759F)
 Flammable limits in air % by volume: uel: 11.4, lel: 1.4

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.

Fire Extinguishing Media: Dry chemical, foam or Carbon Dioxide. 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. This highly flammable liquid must be kept from sparks, open flame, hot surfaces, and all sources of heat and ignition.

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. 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): 200 ppm (TWA)

ACGIH Threshold Limit Value (TLV): 200 ppm (TWA), 300 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. Use explosion-proof equipment.

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: Sharp mint-like odor

Odor Threshold: Not determined

pH: No information found

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

Melting Point: -86C (-123F)

Boiling Point / Boiling Range: 80C (176F)

Flash Point: -9C (16F) CC

Evaporation Rate (BuAC=1): 2.7 (Ether = 1)

Flammability: Extremely Flammable

Upper / Lower Flammability or Explosive Limits: Upper – 11.4 / Lower – 1.4
Vapor Pressure (mm Hg): 78 @ 20C (68F)
Vapor Density (Air=1): 2.5
Relative Density: 0.805 g/mL at 25C (77F)
Solubility: Soluble
Partition Coefficient: n-octanol / water: log Pow: 0.29
Auto-ignition Temperature: 404C (759F)
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.

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

Incompatible Materials: Oxidizing materials, caustics, amines, Ammonia, strong bases, Chloroform, Chlorosulfonic Acid, Oleum, Potassium-T-Butoxide, heat or flame, Hydrogen Peroxide, Nitric Acid. Can attack many plastics, resins and rubber.

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

11. Toxicological Information

Emergency Overview: DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL OR FATAL IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. AFFECTS CENTRAL NERVOUS SYSTEM. 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. May be absorbed through the skin with possible systemic effects.

Eye Contact: Vapors are irritating to the eyes. Splashes can produce painful irritation and eye damage.

Chronic Exposure: Prolonged skin contact may defat the skin and produce dermatitis. Chronic exposure may cause central nervous system effects.

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

Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System:) May cause drowsiness or dizziness.

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 Ethyl Ketone (78-93-3) | No | No | None |

Acute Toxicity:

Oral rat LD50: 2737 mg/kg; inhalation rat LC50: 23,500 mg/m³ / 8 h; skin rabbit LD50: 6480 mg/kg; investigated as a mutagen, reproductive effector.

Reproductive Toxicity:

Has shown teratogenic effects in laboratory animals.

12. Ecological Information

Ecotoxicity: This material is not expected to be toxic to aquatic life.

Toxicity to fish:

mortality NOEC - *Cyprinodon variegatus* (sheepshead minnow) - 400 mg/l - 96 h

LC50 - *Pimephales promelas* (fathead minnow) - 3,130 - 3,320 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates:

LC50 - *Daphnia magna* (Water flea) - > 520 mg/l - 48 h

EC50 - *Daphnia magna* (Water flea) - 7,060 mg/l - 24 h

Persistence and Degradability: When released into water, 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 the water, this material is expected to have a half-life between 10 and 30 days. 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: UN1193

UN Proper Shipping Name: ETHYL METHYL KETONE

Packing Group: II



DOT

IMDG

IATA

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 Ethyl Ketone (78-93-3) | Yes | Yes | Yes | Yes |

Chemical Inventory Status – Part 2

| Ingredient | Korea | Canada | | Phil. |
|-------------------------------|-------|--------|------|-------|
| | | DSL | NDSL | |
| Methyl Ethyl Ketone (78-93-3) | Yes | Yes | No | Yes |

Federal, State & International Regulations - Part 1

| Ingredient | SARA 302 | | SARA 313 | |
|-------------------------------|----------|-----|---------------|-------|
| | RQ | TPQ | List Chemical | Catg. |
| Methyl Ethyl Ketone (78-93-3) | No | No | Yes | No |

Federal, State & International Regulations - Part 2

| Ingredient | RCRA | | TSCA |
|-------------------------------|--------|--------|------|
| | CERCLA | 261.33 | 8(d) |
| Methyl Ethyl Ketone (78-93-3) | 5000 | U159 | No |

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

Australian Hazchem Code: 2{Y}E

Poison Schedule: S5

16. Other Information

Revision 04/13/16 – modified Effective date

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