1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
150 Allen Road Suite 302
Basking Ridge, New Jersey 07920
Information: 1-800-416-2505

Emergency Contact:
CHEMTREC 1-800-424-9300
Calls Originating Outside the US:
703-527-3887 (Collect Calls Accepted)

SUBSTANCE: METHYL ETHYL KETONE

TRADE NAMES/SYNONYMS:
MTG MSDS 221; BUTANONE; 2-BUTANONE; ETHYL METHYL KETONE; METHYL ACETONE; MEK; RCRA U159; UN 1193; M-209; C4H8O; MAT14460; RTECS EL6475000

CHEMICAL FAMILY: ketones, aliphatic

CREATION DATE: Jan 24 1989
REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: METHYL ETHYL KETONE
CAS NUMBER: 78-93-3
PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2  FIRE=3  REACTIVITY=0

EMERGENCY OVERVIEW:
COLOR: colorless
PHYSICAL FORM: liquid
ODOR: minty, sweet odor
MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, aspiration hazard, central nervous system depression
PHYSICAL HAZARDS: Flammable liquid and vapor. Vapor may cause flash fire.

POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: irritation, nausea, vomiting, difficulty breathing, headache, drowsiness,
dizziness, loss of coordination, unconsciousness  
**LONG TERM EXPOSURE:** no information on significant adverse effects  
**SKIN CONTACT:**  
**SHORT TERM EXPOSURE:** irritation  
**LONG TERM EXPOSURE:** irritation  
**EYE CONTACT:**  
**SHORT TERM EXPOSURE:** irritation  
**LONG TERM EXPOSURE:** irritation  
**INGESTION:**  
**SHORT TERM EXPOSURE:** nausea, vomiting, difficulty breathing, irregular heartbeat, headache, dizziness, blood disorders, coma, aspiration hazard  
**LONG TERM EXPOSURE:** no information on significant adverse effects

### 4. FIRST AID MEASURES

**INHALATION:** If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

**SKIN CONTACT:** Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**EYE CONTACT:** Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**INGESTION:** Aspiration hazard. DO NOT induce vomiting. If vomiting occurs, keep head lower than hips to help prevent aspiration. Get immediate medical attention. Give artificial respiration if not breathing.

**NOTE TO PHYSICIAN:** For ingestion, consider gastric lavage and activated charcoal slurry.

### 5. FIRE FIGHTING MEASURES

**FIRE AND EXPLOSION HAZARDS:** Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive above flash point.

**EXTINGUISHING MEDIA:** alcohol-resistant foam, carbon dioxide, regular dry chemical, water, alcohol-resistant foam

Large fires: Use alcohol-resistant foam or flood with fine water spray.

**FIRE FIGHTING:** Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny
entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any
discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile).
Water may be ineffective.

FLASH POINT: 16 F (-9 C) (CC)
LOWER FLAMMABLE LIMIT: 1.4% @ 93.3 C
UPPER FLAMMABLE LIMIT: 11.4% @ 93.3 C
AUTOIGNITION: 759 F (404 C)
FLAMMABILITY CLASS (OSHA): IB

6. ACCIDENTAL RELEASE MEASURES

AIR RELEASE:
Reduce vapors with water spray.

SOIL RELEASE:
Dig holding area such as lagoon, pond or pit for containment. Absorb with sand or other non-combustible material.

WATER RELEASE:
Cover with absorbent sheets, spill-control pads or pillows. Remove trapped material with suction hoses.

OCCUPATIONAL RELEASE:
Avoid heat, flames, sparks and other sources of ignition. Remove sources of ignition. Stop leak if possible
without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-
combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for
later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out
of low areas. Notify Local Emergency Planning Committee and State Emergency Response Commission for
release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable
under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-
2675 (USA).

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Subject to storage
incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
METHYL ETHYL KETONE:
200 ppm (590 mg/m3) OSHA TWA
300 ppm (885 mg/m³) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)
200 ppm ACGIH TWA
300 ppm ACGIH STEL
200 ppm (590 mg/m³) NIOSH recommended TWA 10 hour(s)
300 ppm (885 mg/m³) NIOSH recommended STEL

VENTILATION: Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

3000 ppm
Any supplied-air respirator operated in a continuous-flow mode.
Any powered, air-purifying respirator with organic vapor cartridge(s).
Any air-purifying respirator with a full facepiece and an organic vapor canister.
Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister.
Any self-contained breathing apparatus with a full facepiece.
Any supplied-air respirator with a full facepiece.
Emergency or planned entry into unknown concentrations or IDLH conditions -
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Escape -
Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister.
Any appropriate escape-type, self-contained breathing apparatus.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid
COLOR: colorless
ODOR: minty, sweet odor
MOLECULAR WEIGHT: 72.12
MOLECULAR FORMULA: C-H3-C-H2-C-O-C-H3
BOILING POINT: 176 F (80 C)
FREEZING POINT: -123 F (-86 C)
VAPOR PRESSURE: 100 mmHg @ 25 C
VAPOR DENSITY (air=1): 2.5
SPECIFIC GRAVITY (water=1): 0.8054
WATER SOLUBILITY: 27.5%
PH: Not available
VOLATILITY: Not available
ODOR THRESHOLD: 10 ppm
EVAPORATION RATE: 2.7 (ether=1)
VISCOSITY: 0.40 cP @ 25 C
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
SOLVENT SOLUBILITY:
Soluble: alcohol, ether, benzene, acetone, oils

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES: halo carbons, acids, combustible materials, oxidizing materials, peroxides, bases

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: oxides of carbon

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

METHYL ETHYL KETONE:
IRRITATION DATA: 350 ppm eyes-human; 500 mg/24 hour(s) skin-rabbit moderate; 402 mg/24 hour(s) skin-rabbit mild; 14 mg/24 hour(s) open skin-rabbit mild; 80 mg eyes-rabbit
TOXICITY DATA: 23500 mg/m3 inhalation-rat LC50; 6480 mg/kg skin-rabbit LD50; 2737 mg/kg oral-rat LD50
LOCAL EFFECTS:
Irritant: inhalation, skin, eye
ACUTE TOXICITY LEVEL:
Moderately Toxic: inhalation, ingestion
Slightly Toxic: dermal absorption
TARGET ORGANS: central nervous system
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: nervous system disorders, respiratory disorders, skin disorders and allergies
MUTAGENIC DATA: Available.
REPRODUCTIVE EFFECTS DATA: Available.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:
FISH TOXICITY: >400000 ug/L 96 hour(s) LC50 (Mortality) Sheepshead minnow (Cyprinodon variegatus)

INVERTEBRATE TOXICITY: 5091000 ug/L 48 hour(s) EC50 (Immobilization) Water flea (Daphnia magna)

ALGAL TOXICITY: >500000 ug/L 96 hour(s) EC50 (Photosynthesis) Diatom (Skeletonema costatum)

ENVIRONMENTAL SUMMARY: Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Hazardous Waste Number(s): D035. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level- 200.0 mg/L. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U159.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Ethyl methyl ketone
ID NUMBER: UN1193
HAZARD CLASS OR DIVISION: 3
PACKING GROUP: II
LABELING REQUIREMENTS: 3

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
SHIPPING NAME: Methyl ethyl ketone
UN NUMBER: UN1193
CLASS: 3
PACKING GROUP/CATEGORY: II

15. REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):
METHYL ETHYL KETONE: 5000 LBS RQ


SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):
ACUTE: Yes
CHRONIC: No
FIRE: Yes
REACTIVE: No
SUDDEN RELEASE: No


STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: BD2

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.

16. OTHER INFORMATION

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