Carolina International Sales Co., Inc

2522 Plantation Center Drive
Matthews, NC 28105
(704) 845 9440

www.ciscochem.com

MATERIAL SAFETY DATA SHEET

IN CASE OF TRANSPORT EMERGENCY CONTACT CHEMTREC
USA: 1-800-424-9300
INTERNATIONAL: 1-703-527-3887

1. PRODUCT NAME: Methyl Ethyl Ketone

2. CHEMICAL NAME:

3. SYNOMYMS: MEK

4. CAS NUMBER: 78-93-3

5. COMPOSITION: Methyl Ethyl Ketone (2-butanone) (78-93-3)
100%

6. PROPERTIES: ODOR & APPEARANCE: clear, colorless, liquid with sharp, sweetish acetone-like odor
ODOR THRESHOLD: 5 – 55ppm
VAPOUR PRESSURE: 78mmHg/10.3kPa (20 c)
EVAPORATION RATE (butyl Acetate=1): 4.6
VAPOR DENSITY (air=1): 2.4
BOILING RANGE: 80 c/175 F
FREEZING POINT: -86 c/-123 F
SPECIFIC GRAVITY: 0.806 (20/20 c)
WATER SOLUBILITY: 270 grams per litre (20 c)
IN OTHER SOLVENTS: soluble in most organic solvents
VISCOSITY: 0.4 centipoise (20 c)

7. HAZARDS: HMIS (U.S.A.): Health – 1, Fire – 3, Reactivity - 0
MATERIAL USE: solvent in paints and coatings

8. FIRE FIGHTING INFORMATION: FLASH POINT: -9 c/16 F -closed cup (other data give flash point as between –6 c and –2 c)
AUTOIGNITION TEMPERATRE: 404 c/759 F
FLAMMABLE LIMITS: 1.8% - 12.0% not known
COMBUSTION PRODUCTS: carbon monoxide, nitrogen oxides, smoke, part oxidized hydrocarbon fragments
FIREFIGHTING PRECAUTIONS: foam, dry chemical, water fog, water spray only to cool & dilute, product floats on water - water jet may spread flames; firefighters must wear SCBA
STATIC DISCHARGE: will not accumulate a static charge
MECHANICAL IMPACT: not sensitive
CHEMICAL STABILITY: stable; will not polymerize
REACTIVE WITH: strong oxidizing agents, strong mineral acids, contact with both alkalies & halogenated compounds may explode
DECOMPOSOTION PRODUCTS: apart from Hazardous Combustion Products, explosive peroxides may form on prolonged exposure to air
Note: blends with MEK and Isopropyl alcohol can develop explosive MEK peroxide quite rapidly on exposure to air and light.

9. PERSONAL PROTECTION MEASURES: HANDS: butyl rubber gloves – also “Barricade” & “Tychem”
EYES: safety glasses with side shields or chemical goggles
VENTILATION: mechanical ventilation to maintain air titre below TWAEV/TLV (Part 2, above); respirator with organic vapor cartridge should be available for escape purposes – store in airtight container
CLOTHING: impermeable (hands, above) apron, boots, long sleeves, if splashing is anticipated

10. FIRST AID PROCEDURES: SKIN: Wash with soap and plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or laundered.

EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.
INHALATION: Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If breathing stops, administer artificial respiration and seek medical aid promptly.
INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.
NOTE: Inadvertent inhalation of vomited material may seriously damage the lungs. The risk and danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity product. The stomach should only be emptied under medical supervision, after the installation of an airway to protest the lungs.

11. EXPOSURE LIMITS:

TWAEV ppm: 200
LD50 ORAL: 2350
SKIN (mg/kg): 6480
LC50ppm INHALATON: 7990

12. TOXICOLOGICAL INFORMATION:

EFFECTS ACUTE EXPOSSURE
SKIN CONTACT: aggressively drying, may irritate
SKIN ABSORPTION: yes, slowly; no toxic effects anticipated by this route
EYE CONTACT: severely irritating, vapor irritating above 200ppm; may damage eyes
INHALATION: slightly irritating above 100ppm, strongly irritating above 350ppm; headache, dizziness, drowsiness, intoxication
INGESTION: headache, dizziness, drowsiness, intoxication
EFFECTS OF CHRONIC EXPOSURE
GENERAL: prolonged exposure may cause skin cracking and dermatitis
SENSITISING: not a sensitizer – only one reported case of human sensitisation
REPRODUCTIVE EFFECT: experimental reproductive toxin at 1000ppm – 3x the level which is irritating to inhale & 5x the level irritating to eyes: no known effect in humans
SYNERGISTIC WITH: not known
ESTIMATED LD50: 3000mg/kg (oral, mouse) 2350mg/kg (oral, rat), 2740mg/kg (oral, rat), 6480mg/kg (skin, rabbit)
ESTIMATED LC50: 7990ppm (inhalation, rat), 10,880ppm (inhalation, mouse)

13. ECOLOGICAL INFORMATION:

This product cannot accumulate in living tissue – This product is readily and rapidly biodegradable in the presence of oxygen; BOD testing suggests 76% & 89% degradation in 5 & 20 days; half-life in air estimated as 14 days.

14. DISPOSAL CONSIDERAIONS:

DO NOT FLUSH TO SEWER; may be incinerated in approved facility.

15. CARCINOGENIC PROPERTIES & NOTIFICATIONS:

Not a tumorigen not a carcinogen; humans or animals.

16. TRANSPORT INFORMATION:

USA 49 CFR
Product identification number: UN – 1193
Shipping name: ethyl methyl ketone or methyl ethyl ketone
Classification: Class 3; packing group II
Label: 3 - flammable liquid
Class: B2, D 2A

2522 Plantation Center Drive
Matthews, NC 28105
(704) 845 9440
www.ciscochem.com

17. HANDLING & STORAGE: Store in a cool dry environment, away from sources of ignition, heat and oxidizing agents. Use with adequate ventilation. Although this product is not a static accumulator, its very low flash point indicates that you should ground the container before handling to prevent static discharge. Take extreme care to avoid sparks – only use non-sparking tools and explosion-proof electrical equipment nearby. Do not cut, drill, weld or grind on or near this container. Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

18. ACCIDENTAL RELEASE MEASURES: LEAK PRECAUTION: dyke to control spillage and prevent environmental contamination. Serious Fire Risk: blanket spill with foam as a precaution against accidental ignition. Take extremely care to avoid sparks – do not operate (turn on OR off) electrical appliances near spill, unless explosion proof. HANDLING SPILL: ventilate contaminated area; recover free liquid with explosion-proof pumps; absorb residue on an inert sorbent, pick up using non-sparking plastic or aluminium shovel, & store in closed containers for disposal

19. REGULATORY INFORMATION: IMMEDIATELY DANGEROUS TO LIFE OR HEALTH (IDLH): 3000ppm

ACCEPTABLE DAILY INTAKES

An Acceptable Daily Intake (ADI), defined as the amount of chemical to which humans can be exposed on daily basis over an extended period of time (usually a lifetime(without suffering a deleterious effect, for methyl ethyl ketone is 3.2 mg/day for oral exposure.

ALLOWABLE TOLERANCES

Methyl ethyl ketone is exempted from the requirement of a tolerance when used as a solvent, cosolvent in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only.

OSHA STANDARDS

Permissible Exposure Limit: Table Z-1 8-hr Time Weighted Avg: 200ppm (590mg/cu m). Vacated 1989 OSHA PEL TWA 200ppm (590mg/cu m); STEL 300ppm (885mg/cu m) is still enforced in some states.

NIOSH RECOMMENDATIONS

Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 200ppm (590mg/cu m). Recommended Exposure Limit: 15 min Short-Term Exposure Limit: 300ppm (885mg/cu m). T

THRESHOLD LIMIT VALUES

8 hr Time Weighted Avg (TWA): 200ppm; 15 min Short Term Exposure Limit (STEL): 300ppm. Biological Exposure Index (BEI): Determinant: methyl ethyl ketone in urine; Sampling Time: end of shift; BEI: 2mg/l.

ATMOSPHERIC STANDARDS

This action promulgates standards of performance for equipment leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The intended effect of these standards is to require all newly constructed, modified, and reconstructed SOCMI process units to use the best demonstrated system of continuous emission reduction for equipment leaks of VOC, considering costs, non air quality health and environmental impact and energy requirements. Methyl ethyl ketone is produced, as an intermediate or final product, by process units covered under this subpart. Small quantities of this waste may qualify for partial exclusion from hazardous waste regulations (40 CFR 261.5). F005; When methyl ethyl ketone is a spent solvent, it is classified as a hazardous waste from a nonspecific source (F005), as stated in 40 CFR 261.31, and must be managed according to State and/or Federal hazardous waste regulations.

FIFRA REQUIREMENTS

Unless designated as an active ingredient in accordance with paragraph (b) or (c) of this section, this substance, when used in antimicrobial products, is considered inert, having no independent pesticidal activity. The percentage of such an ingredient shall be included on the label in the total percentage of inert ingredients. Methyl ethyl ketone is exempted from the requirement of tolerance when used as a solvent or cosolvent in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only.

2522 Plantation Center Drive
Matthews, NC 28105
(704) 845 9440
www.ciscochem.com

FDA REQUIREMENTS

Methyl ethyl ketone is an indirect food additive for use only as a component of adhesives. Methyl ethyl ketone is an indirect food additive polymer for use as a basic component of single and repeated use food contact surfaces. Residue limit 0.1% by weight of finished packaging cellophane. Methyl ethyl ketone is a food additive permitted for direct addition to food for human consumption as a synthetic flavoring substance and adjuvant in accordance with the following conditions: 1) the quantity added to food does not exceed the amount reasonably required to accomplish its intended physical, nutritive, or other technical effect in food, and 2) when intended for use in or on food it is of appropriate food grade and is prepared and handled as food ingredient.