

SECTION 1: Identification

1.1. Identification

Product form	: Substance
Substance name	: Methyl Ethyl Ketone (MEK)
Chemical name	: Methyl Ethyl Ketone
CAS-No.	: 78-93-3
Product code	: Ketones
Formula	: C4H8O
Synonyms	: 2-Butanon, 2-butanone, 2-oxobutane, 3-butanone, MEK

1.2. Recommended use and restrictions on use

Use of the substance/mixture	: Use only in industrial processes Chemical raw material
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1.3. Supplier

ECOLINK

2177 Flintstone Drive
Suite A
Tucker, GA 30084
770-621-8240 (t)
www.ecolink.com

1.4. Emergency telephone number

Emergency number	: INFOTRAC 800-535-5053
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SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids Category 2	H225	Highly flammable liquid and vapor
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Specific target organ toxicity (single exposure) Category 3	H336	May cause drowsiness or dizziness

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H225 - Highly flammable liquid and vapor
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US)

: P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking
P233 - Keep container tightly closed
P240 - Ground/Bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P261 - Avoid breathing dust, fume, gas, mist, vapors, spray
P264 - Wash hands thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves, protective clothing, eye protection, face protection
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse

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skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P337+P313 - If eye irritation persists: Get medical advice/attention
P370+P378 - In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/container in accordance with local, regional, national, and/or international regulations.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	GHS-US classification
Methyl Ethyl Ketone (MEK) (Main constituent)	(CAS-No.) 78-93-3	100	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
First-aid measures after skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.
First-aid measures after eye contact : Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.
First-aid measures after ingestion : If swallowed, do NOT induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101 °F (38.3 °C), shortness of breath, chest congestion or continued coughing or wheezing.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/ or fever. Defatting dermatitis signs and symptoms may include a burning sensation, redness, swelling, and/ or blurred vision. Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically. Potential for chemical pneumonitis. Consider: gastric lavage with protected airway, administration of activated charcoal. Call a doctor or poison control center for guidance.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media : None.

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5.2. Specific hazards arising from the chemical

Fire hazard : Vapor is heavier than air, spreads along the ground and distant ignition is possible.
Carbon monoxide may be evolved if incomplete combustion occurs.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Gloves. Protective goggles. Protective clothing.
Emergency procedures : Keep upwind. Mark the danger area. Consider evacuation. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Keep containers closed. Wash contaminated clothes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment : Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute/disperse combustible gas/vapor with water curtain. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills.
Methods for cleaning up : Take up liquid spill into a non combustible material e.g.: kieselguhr, powdered limestone or dry sand/earth/vermiculite. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Before use: check for peroxides and eliminate them. Measure the concentration in the air regularly. Work under local exhaust/ventilation. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Handle uncleaned empty containers as full ones. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.
Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Storage area : Store in a cool area. Keep out of direct sunlight. Store in a dark area. Ventilation at floor level. Fireproof storeroom. Provide for an automatic sprinkler system. Provide for a tub to collect spills. Provide the tank with earthing. May be stored under inert gas. Meet the legal requirements.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (ppm)	300 ppm

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Materials for protective clothing:

GIVE GOOD RESISTANCE: butyl rubber.

GIVE POOR RESISTANCE: natural rubber. neoprene. nitrile rubber. polyethylene. PVC. viton

Hand protection:

Gloves

Eye protection:

Safety glasses

Skin and body protection:

Head/neck protection. Protective clothing

Respiratory protection:

Full face mask with filter type A at conc. in air > exposure limit

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Clear
Odor	: Characteristics
Odor threshold	: 2 - 85 ppm 6 - 251 mg/m ³
pH	: No data available
Melting point / Freezing point	: -86 °C (1013 hPa) (-123 °F)
Boiling point	: 79.6 °C (1013 hPa) (175.1 °F)
Flash point	: -9 °C (16 °F)
Relative evaporation rate (butyl acetate=1)	: 6
Relative evaporation rate (ether=1)	: 2.7
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: 12.600 Pa (20 °C)
Vapor pressure at 50 °C	: 370 hPa
Relative vapor density at 20 °C	: 2.4
Relative density	: 0.81 (20 °C)
Relative density of saturated gas/air mixture	: 1.2
Specific gravity / density	: 810 kg/m ³ (20 °C)
Molecular mass	: 72.11 g/mol
Solubility	: Soluble in water.
Log Pow	: 0.3 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 40 °C)
Auto-ignition temperature	: 515 °C (959 °F)

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Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 0.4 mPa.s (25 °C)
Explosion limits	: 1.5 - 12 vol % 45 - 378 g/m ³ LEL: 1.5 vol % UEL: 12 vol %
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

Minimum ignition energy	: 0.53 mJ
Specific conductivity	: 36000 pS/m
Saturation concentration	: 311 g/m ³
VOC content	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Volatile.

SECTION 10: Stability and reactivity

10.1. Reactivity

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts with strong oxidizing agents.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Methyl Ethyl Ketone (MEK) (78-93-3)	
LD50 oral rat	2193 mg/kg body weight (Equivalent or similar to OECD 423, Rat, Male/female, Read-across)
LD50 dermal rabbit	> 10 ml/kg (Equivalent or similar to OECD 402, 24 h, Rabbit, Male, Experimental value)

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: May cause drowsiness or dizziness.
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Practically non-toxic if swallowed (LD50 oral 2000/5000 mg/kg). Repeated exposure may cause skin dryness or cracking. Non-toxic in contact with skin (LD50 skin > 5000 mg/kg). May cause drowsiness or dizziness. Causes serious eye irritation. Caution! Substance is absorbed through the skin.
Symptoms/effects	: May cause drowsiness or dizziness.

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Symptoms/effects after inhalation	: Irritation of the nasal mucous membranes. Nausea. Headache. EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract. Central nervous system depression. Dizziness. Mental confusion. Narcosis. Disturbances of consciousness.
Symptoms/effects after skin contact	: Red skin. ON CONTINUOUS EXPOSURE/CONTACT: Not irritating. Cracking of the skin.
Symptoms/effects after eye contact	: Irritation of the eye tissue.
Symptoms/effects after ingestion	: AFTER INGESTION OF HIGH QUANTITIES: Symptoms similar to those listed under inhalation. Risk of aspiration pneumonia.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Itching. Skin rash/inflammation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Slightly harmful to crustacea. Not harmful to fishes. Groundwater pollutant. Not harmful to activated sludge. Not harmful to algae. Not harmful to bacteria.

Methyl Ethyl Ketone (MEK) (78-93-3)	
LC50 fish 1	2993 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Static system, Fresh water, Experimental value)
EC50 Daphnia 1	308 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)
ErC50 (algae)	1972 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value)

12.2. Persistence and degradability

Methyl Ethyl Ketone (MEK) (78-93-3)	
Persistence and degradability	Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	2.03 g O ₂ /g substance
Chemical oxygen demand (COD)	2.31 g O ₂ /g substance
ThOD	2.44 g O ₂ /g substance

12.3. Bioaccumulative potential

Methyl Ethyl Ketone (MEK) (78-93-3)	
Log Pow	0.3 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 40 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

Methyl Ethyl Ketone (MEK) (78-93-3)	
Surface tension	0.024 N/m (20 °C)
Log Koc	1.53 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil. Slightly harmful to plants.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Do not discharge into surface water. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery. May be discharged to wastewater treatment installation.
Additional information	: Flammable vapors may accumulate in the container.

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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	: UN1193 Methyl ethyl ketone, 3, II
UN-No.(DOT)	: UN1193
Proper Shipping Name (DOT)	: Methyl ethyl ketone
Class (DOT)	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT)	: II - Medium Danger
Hazard labels (DOT)	: 3 - Flammable liquid



DOT Packaging Non Bulk (49 CFR 173.xxx)	: 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
DOT Special Provisions (49 CFR 172.102)	: IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 60 L
DOT Vessel Stowage Location	: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
Other information	: No supplementary information available.

Transportation of Dangerous Goods

Transport by sea

Transport document description (IMDG)	: UN 1193 Ethyl methyl ketone (methyl ethyl ketone), 3, II
UN-No. (IMDG)	: 1193
Proper Shipping Name (IMDG)	: Ethyl methyl ketone (methyl ethyl ketone)
Class (IMDG)	: 3 - Flammable liquids
Packing group (IMDG)	: II - substances presenting medium danger
EmS-No. (1)	: F-E
EmS-No. (2)	: S-D

Air transport

Transport document description (IATA)	: UN 1193 Ethyl methyl ketone, 3, II
UN-No. (IATA)	: 1193
Proper Shipping Name (IATA)	: Ethyl methyl ketone
Class (IATA)	: 3 - Flammable Liquids
Packing group (IATA)	: II - Medium Danger

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SECTION 15: Regulatory information

15.1. US Federal regulations

Methyl Ethyl Ketone (MEK) (78-93-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not subject to reporting requirements of the United States SARA Section 313

CERCLA RQ

5000 lb

SARA Section 311/312 Hazard Classes

Physical hazard - Flammable hazard
Health hazard - Acute health hazard

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

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State or local regulations

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Revision date : 05/02/2018

Full text of H-phrases:

H225	Highly flammable liquid and vapor
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness

NFPA health hazard

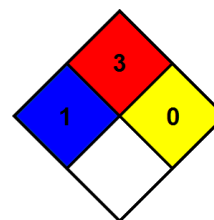
: 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard

: 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.

NFPA reactivity

: 0 - Material that in themselves are normally stable, even under fire conditions.



SDS US (GHS HazCom 2012)

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