

Methyl ethyl ketone (MEK)

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Trade name	Methyl ethyl ketone (MEK)		
Synonyms	2-Butanone, 3-Butanone, methyl acetone, Ethyl methyl ketone		
Manufacturer/Supplier	SASOL CHEMICALS NORTH AMERICA LLC (An affiliate of Sasol North America Inc.)		
Address	900 Threadneedle, Houston, TX 77079		
Telephone	CHEMTREC North America Transportation Emergency (24-hr)	(800) 424-9300	
	CHEMTREC World Wide	(703) 527-3887	
	Other Emergencies (24-hr)	(337) 494-5142	
	MSDS and Product Information (8:00am-4:30pm CST)	(281) 588-3491	
	Health and Safety Information (8:00am-4:00pm CST)	(281) 588-3492	

SECTION 2 COMPOSITION AND INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS-No.</u>	<u>Weight %</u>
Methyl ethyl ketone	78-93-3	99.5

See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance	Clear, colorless liquid
Odor	Sweet Pleasant. Mint-like.
Precautions	DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR MAY CAUSE EYE, SKIN AND RESPIRATORY IRRITATION. Keep away from heat and flame. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation.
Environmental precautions	Do not flush into surface water or sanitary sewer system. Toxic to aquatic life in high concentrations. Biodegradable.

POTENTIAL HEALTH EFFECTS

Eyes Irritating to eyes.

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- Skin** Repeated or prolonged contact can cause redness, irritation and scaling of the skin (dermatitis). Normal care and personal hygiene should prevent skin effects. The product may be absorbed through the skin.
- Inhalation** Irritation of the nose and throat, dizziness, and headache.
- Ingestion** Aspiration (breathing) into lungs, caused while vomiting, may result in severe pulmonary injury. Depression of central nervous system can occur. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

(See Section 11 for Toxicological Information)

SECTION 4 FIRST AID MEASURES

- Eye contact** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. When symptoms persist or in all cases of doubt seek medical advice. Wash contaminated clothing before re-use.
- Inhalation** Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.
- Ingestion** If swallowed, call a physician or poison control center immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

SECTION 5 FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

- Flash point** -9 °C closed cup 15.8 °F 9 °C open cup 48.2 °F
- Autoignition temperature** 515 °C 959 °F
- Flammable limits in air % by volume** **Lower explosion limit:** 1.4 %(V)
Upper explosion limit: 11.4 %(V)
- Fire and explosion** Vapours may form explosive mixture with air. Flash back possible over considerable distance. Use water spray to disperse the vapors. NFPA Class IB flammable liquid.
- Extinguishing media** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Fire fighting instructions** Self-contained breathing apparatus (SCBA) and structural firefighter's protective clothing will provide limited protection.

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Further information Keep containers and surroundings cool with water spray. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Steps to be taken in case of spill or leak Evacuate personnel to safe areas. Remove all sources of ignition. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Do not flush into surface water or sanitary sewer system.

SECTION 7 HANDLING AND STORAGE

Safe handling advice Ensure all equipment is electrically grounded before beginning transfer operations.

Storage/Transport pressure Ambient.

Further information on storage conditions Keep away from heat and sources of ignition.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES

Air contaminant levels should be controlled below the PEL or TLV for this product (see Exposure Guidelines). Mechanical ventilation may be necessary if working with this product in enclosed areas and/or at elevated temperatures. Use explosion-proof equipment.

PERSONAL PROTECTIVE EQUIPMENT

Eyes When contact with liquid is possible, use a face shield and/or chemical splash goggles. Otherwise use safety glasses with side shields or goggles.

Skin Wear suitable protective clothing, gloves and eye/face protection.

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Inhalation Respiratory protection is normally not required except in emergencies or when conditions cause excessive airborne levels of mists or vapors. NIOSH-approved organic vapor air-purifying respirator, self-contained breathing apparatus, or air-supplied respirators where there may be potential for overexposure.

EXPOSURE GUIDELINES

Components	Exposure limit(s)
Methyl ethyl ketone	ACGIH TWA 200 ppm(590 mg/m3)
	ACGIH STEL 300 ppm(885 mg/m3)
	OSHA TWA 200 ppm(590 mg/m3)

PEL= Permissible Exposure Limits
TLV= Threshold Limit Value
EL= Excursion Limit

TWA= Time Weighted Average (8 hr.)
STEL= Short Term Exposure Limit (15 min.)
WEEL= Workplace Environmental Exposure Level

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	liquid
Colour	Clear, colorless
Odour	Sweet Pleasant. Mint-like.
Form	liquid
Boiling point/range	79.6 °C 175.6 °F
Vapour pressure	77.5 mm Hg @ 20 °C
Vapor density	2.5
Solubility (water)	Soluble.
Viscosity	0.51 cSt
Melting point/range	-86.3 °C -123.3 °F
Density	0.805 g/cm3
pH	No data available.
Evaporation rate	2.7 (Butyl acetate = 1)

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SECTION 10 STABILITY AND REACTIVITY

Conditions to avoid	Keep away from heat and sources of ignition.
Hazardous decomposition products	Combustion products include carbon dioxide, carbon monoxide and possibly other unidentified organic compounds.
Incompatibility with other materials	Can react with strong oxidizers, inorganic acids, and halogens.
Hazardous polymerization	None.

SECTION 11 TOXICOLOGICAL INFORMATION

Eyes	Severe eye irritation
Inhalation	Acute 8 hours LC50 (rat): 23,500 mg/l
Ingestion	Acute oral LD50(rat): 2,737 mg/kg
Reproductive Effects	Embryotoxic and /or fetotoxic in animal. Detected in maternal milk in human. Passes through the placental barrier in humans.

CARCINOGENICITY

This product contains no carcinogenic substances.

SECTION 12 ECOLOGICAL INFORMATION

Aquatic toxicity	<p>Toxic to aquatic life in high concentrations.</p> <p>LC50 (Bluegill sunfish) 24 hours 5,640 mg/l</p> <p>LC50 (Brine shrimp) 24 hours 1,950 mg/l</p> <p>EC50 (microorganisms): 10,000 - 20,000 ppm Activated Sludge Respiration Inhibition Test (ASRI)</p> <p>Waste water treatment test according to OECD Guideline 209. EC50 (Pseudomonas putida (bacteria)): 100 - 10,000 ppm Growth Inhibition Test (OECD 201)</p> <p>EC50 (algae): 3,000 - 10,000 ppm Growth Inhibition Test (OECD 201)</p>
Biodegradation	Biodegradable.

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SECTION 13 DISPOSAL CONSIDERATIONS

Waste code D035 (RQ 5,000 LB)

Disposal methods Dispose of only in accordance with local, state, and federal regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

Empty containers Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, triple-rinsed, properly bunged and promptly returned to a drum reconditioner, or properly disposed.

SECTION 14 TRANSPORT INFORMATION

DOT description RQ Methyl Ethyl Ketone, 3, UN 1193, II

IATA description RQ Methyl Ethyl Ketone, 3, UN 1193, II

IMDG DESCRIPTION RQ Methyl Ethyl Ketone, 3, UN 1193, II

SECTION 15 REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

OSHA classification

Flammable liquid, Eye irritant, Respiratory irritant

TSCA Inventory Listing

Components

CAS-No.

Methyl ethyl ketone

78-93-3

SARA 302 Status

Components

CAS-No.

Weight %

Contains no chemicals subject to SARA 302 reporting.

SARA 311/312 Classification

"Fire hazard", "Immediate (acute) health hazard"

SARA 313 Chemical

Components

CAS-No.

Weight %

Contains no chemicals subject to SARA 313 reporting.

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CERCLA Hazardous Substance Components

CERCLA RQ

Weight %

Methyl ethyl ketone

5,000 LB

99.5

INTERNATIONAL REGULATIONS

Workplace Hazardous Materials Information System (WHMIS) Classification

Class B, Division 2: Flammable liquid.
Class D, Division 2, Subdivision A: Very toxic material
Class D, Division 2, Subdivision B: Toxic material.

Australian Inventory of Chemical Substances (AICS) Listing

Listed on the AICS.

Japanese Minister of International Trade and Industry (MITI) Inventory Listing

Listed on MITI.

Canadian Domestic Substance List (DSL) Inventory Listing

Listed on the DSL.

European Inventory of Existing Commercial Chemical Substances (EINECS) Listing

Listed on EINECS.

Phillipines Inventory List (PICCS)

Listed on PICCS.

Korean Inventory List

Listed on the ECL.

China Inventory List

Listed on the China inventory.

STATE REGULATIONS

California Safe Drinking Water Act (Prop 65) Listing Components

CAS-No.

Contains no chemical subject to California Prop 65.

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SECTION 16 OTHER INFORMATION

HAZARD RATINGS

	<u>Health</u>	<u>Flammability</u>	<u>Reactivity</u>
HMIS	1	3	0
NFPA	1	3	0

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