

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Methyl Ethyl Ketone
CAS number	78-93-3
Synonyms	2-Butanone; Ethyl Methyl Ketone; MEK; Methyl Acetone

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	General purpose solvent.
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1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Specific target organ toxicity, single exposure	Category 3 narcotic effects

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard statements

Highly flammable liquid and vapor. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving

Response

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish.

Storage

Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal

Dispose of waste and residues in accordance with local authority requirements.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None known.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Methyl ethyl ketone	2-Butanone; Ethyl Methyl Ketone; MEK; Methyl Acetone	78-93-3	100%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you unwell.

In case of skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.

In case of eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

If swallowed Rinse mouth. Get medical attention if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide.

Unsuitable extinguishing media Do not use water jet as an extinguished, as this will spread the fire.

5.2 Specific hazards arising from the substance or mixture

Vapors may form explosive mixtures with air. Vapors may travel considerable distances to a source of ignition and flash back. During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides.

5.3 Special protective equipment and precautions for firefighters

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Use standard firefighting procedures and consider the hazards of other involved materials.

5.4 Further information

Flash Point 15.8 °F (-9.0 °C)

Autoignition Temperature 759.2 °F (404 °C)

Explosion limits

Upper	1.80%
Lower	10.10%
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available
NFPA	

Health	Flammability	Instability	Physical hazards
2	3	0	0

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate all protective equipment and clothing during clean-up. Avoid breathing mist/vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

6.2 Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3 Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. The product is soluble in water. Large Spills: Stop the flow of material, if this is risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original container for re-use. For waste disposal, see section 13 of the SDS.

6.4 Reference to other sections

See section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. Do not breathe mist or vapor. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Hygiene measures

When using do not smoke. Always observe good person hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers.

Incompatibilities

Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value
Methyl ethyl ketone	PEL	590 mg/m ³ 200 ppm

US. ACGIH Threshold Limit Values

Component	Type	Value
Methyl ethyl ketone	STEL	300 ppm
	TWA	200 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value
Methyl ethyl ketone	STEL	885 mg/m ³ 300 ppm
	TWA	590 mg/m ³ 200 ppm

Biological occupational exposure limits

MEK: 2 mg/l, Urine specimen

8.2 Exposure controls

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Personal protective equipment

Eye/face protection

Chemical goggles are recommended.

Skin and body protection

Wear appropriate chemical resistance gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with organic vapor cartridge.

Control of environmental exposure

No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless, clear
Odor	No information available
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-124.6 °F (-87 °C)
Boiling Point/Range	176 °F (80 °C)
Evaporation Rate	No information available
Flammability (solid)	No information available
Flammability or explosive limit	
Upper	1.80%
Lower	10.10%
Vapor Pressure	95 hPa (71 mmHg) (68 °F (20 °C))
Vapor Density	2.5
Density	0.805 g/ml (68 °F (20 °C))
Solubility	soluble
Partition coefficient; n-octanol/water	No data available.
Autoignition Temp	759.2 °F (404 °C)
Decomposition Temp	No data available.
Viscosity	No information available
Molecular Formula	C4H8O
Molecular Weight	72.11 g/mol
VOC Content(%)	No information available
Oxidizing properties	Not oxidizing.

9.2 Other safety information

No information available

SECTION 10: Stability and reactivity

10.1 Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

10.2 Chemical stability

Material is stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.

10.5 Incompatible materials

Strong oxidizing agents. Amines. Ammonia. Inorganic acids. Caustics. Isocyanates. Pyridines.

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methyl ethyl ketone	6400 mg/kg (rat)	34.5 mg/l (rat) 4 h	2600 mg/kg

Skin corrosion/irritation

Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitization

Not a respiratory sensitizer. This product is not expected to cause skin sensitization.

Germ cell mutagenicity

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Methyl ethyl ketone	78-93-3	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure

May cause respiratory irritation. May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure

Not classified.

Reproductive toxicity

This product is not expected to cause reproductive or developmental effects.

Chronic effects

Prolonged inhalation may be harmful.

11.2 Additional Information

No information available

SECTION 12: Ecological information

12.1 Toxicity

Product		Species	Test Results
Methyl ethyl ketone	EC50	Daphnia magna	5091 mg/l 48 h
	LC50	Pimephales promelas	3220 mg/l 96 h

12.2 Persistence and degradability

No data is available on the degradability of this substance.

12.3 Bio accumulative potential

No data available for this product.

12.4 Mobility in soil

The product is soluble in water.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN-No	UN1193
Proper Shipping Name	METHYL ETHYL KETONE
Hazard Class	3
Packing Group	II

IMDG

UN-No	UN1193
Proper Shipping Name	METHYL ETHYL KETONE
Hazard Class	3
Packing Group	II

IATA

UN-No	UN1193
Proper Shipping Name	METHYL ETHYL KETONE
Hazard Class	3
Packing Group	II

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed.

SARA 304 Emergency release notification

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Yes, Flammable, Serious eye damage or eye irritation, special target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Not regulated

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed

US state regulations

US. Massachusetts RTK - Substance List

Listed

US. New Jersey Worker and Community Right-to-Know Act

Listed

US. Pennsylvania Worker and Community Right-to-Know Law

Listed

California Proposition 65

Not listed

SECTION 16: Other information

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SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.