

SAFETY DATA SHEET

1. IDENTIFICATION

1.1 Product identifier

Product Name: Methyl Ethyl Ketone
Product Number(s): 42033
Synonyms: 2-Butanone
CAS #: 78-93-3

1.2 Recommended use of the chemical and restrictions on use

Uses: Solvent
Restrictions: No data available

1.3 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Johann Haltermann, Ltd.
16717 Jacintoport Blvd.
Houston, TX 77015 USA
281-452-5951 Fax: 281-457-1127
sds@jhaltermann.com E-mail contact for SDS

1.4 Emergency telephone number

832-376-2026 24 HR Emergency Assistance
800-424-9300 24 HR CHEMTREC

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to 29 CFR §1910.1200 (d)
Flammable liquids (Category 2)
Eye irritation (Category 2)
Specific target organ toxicity - single exposure (Category 3)

2.2 Label elements

Labeling according to 29 CFR §1910.1200 (f)

Pictograms(s):



Signal word: **Danger**

Hazard statement(s):

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

Precautionary statement(s):

Prevention:

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Take precautionary measures against static discharge. Use only non-sparking tools.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response:

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 feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
In case of fire: Use powder, AFFF, foam, or carbon dioxide for extinction.

Storage:

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

Disposal:

Dispose of contents/container to in accordance with local/regional/national/international regulations.

2.3 Other hazards **None**

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS #	EINECS	Amount
METHYL ETHYL KETONE	78-93-3	201-159-0	≥ 99.5%

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

IF exposed or concerned: Get medical advice/attention.
Show this safety data sheet to the doctor in attendance.

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Refer for medical attention.

Skin Contact

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
If skin irritation occurs: Get medical advice/attention.

Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing. Get medical advice/attention.

Ingestion

If swallowed, rinse mouth and drink 1 - 2 glasses of water to drink. Call physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Acute

Eye irritation signs and symptoms may include redness and pain.
Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea, and vomiting.

Delayed

Long term or repeated exposure to this material defats the skin.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. FIRE FIGHTING MEASURES

5.1 Suitable Extinguishing Media

In case of fire: Use powder, AFFF, foam, or carbon dioxide for extinction.
Use water spray to cool fire exposed containers.

Unsuitable Extinguishing Media

No data available.

5.2 Specific hazards arising from the chemical

The vapor mixes well with air, explosive mixtures may be formed.

The vapor is heavier than air and may travel along the ground; distant ignition is possible.

5.3 Special protective equipment and precautions for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand (OSHA/NIOSH approved or equivalent) and full protective gear.

5.4 Further information

No data available.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Protective Measures

Evacuate spill area. Consult an expert.

Isolate hazard area and deny entry to unnecessary or unprotected personnel. Stay upwind and keep out of low area. Remove all possible sources of ignition in the surrounding area.

Personal protection: see Section 8. Use self contained breathing apparatus.

Ventilate contaminated area thoroughly shut off leaks if possible without personal risk.

6.2 Methods and material for containment and cleaning up

Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place.

6.3 Environmental precautions

Do NOT wash away into sewer. Do NOT let this chemical enter the environment.

Use appropriate containment of product and fire fighting water to avoid environmental contamination. Prevent from spreading or entering drains, ditches, or rivers by using sand, earth, or other appropriate barriers.

Notify authorities if any exposure to the general public or environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained.

6.4 Reference to other sections

Refer to Section 8 for personal protection advice and Section 13 for disposal information.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Wear protective gloves/protective clothing/eye protection/face protection.

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

Keep container tightly closed.

Do not breathe dust/fume/gas/mist/vapors/spray.

Do not eat, drink or smoke when using this product.

Ground/bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Take precautionary measures against static discharge. Use only non-sparking tools.

Use only outdoors or in a well-ventilated area.

Wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place. Keep cool.

Keep container tightly closed. Store locked up.

Store separated from strong acids and strong oxidants.

Ensure that all local regulations regarding handling and storage facilities are followed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Permissible Exposure Limits

Compound Name	CAS #	Value 1	Value 2	BEI/Skin Notation
METHYL ETHYL KETONE	78-93-3	ACGIH TWA: 200 ppm; ACGIH STEL: 300 ppm	OSHA TWA: 200 ppm	BEI: MEK: 2 mg/L in urine [end of shift]

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: U.S. Occupational Health and Safety Administration

TWA: Time weighted average

STEL: Short Term Exposure Limit

BEI: Biological Exposure Indices

8.2 Appropriate Engineering Controls

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures may include the following:

Use sealed systems as far as possible. Adequate explosion-proof ventilation to control airborne concentrations below the exposure limits. Local exhaust ventilation is recommended.

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

8.3 Personal Protective Equipment

Wear protective gloves/protective clothing/eye protection/face protection.

All personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers for more information.

Respiratory Protection

Use only with adequate ventilation. If engineering controls do not maintain airborne concentrations at a level which is adequate to protect worker health, an approved respirator should be used.

When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection. Contact respirator supplier for specific recommendations.

For situations where high concentrations of vapors may be present, use an approved supplied air respirator operated in positive pressure mode.

Hand Protection

Where hand contact with this material may occur, use gloves that meet applicable standards. Contact glove manufacturer for advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves.

Eye Protection

Chemical splash goggles which meet the national standards should be used when handling this material.

Skin Protection

Chemical resistant apron or coat and gloves should be used when handling this material.

Specific Hygiene Measures

Do not eat, drink, or smoke when handling this material. Wash hands thoroughly after handling.

Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Monitoring Methods

Monitoring of the vapor concentrations of chemicals in the workplace may be required to confirm compliance with OEL and adequacy of exposure controls.

Sources for recommended air monitoring methods include:

USA: National Institute of Occupational Safety and Health (NIOSH): Manual of Analytical Methods, <http://www.cdc.gov/niosh/nmam/nmammenu.html>.

USA: Occupational Safety and Health Administration (OSHA): Sampling and Analytical Methods, <http://osha.gov/dts/sltc/methods/toc.html>.

Environmental Exposure Controls

Local guidelines for emissions limits for volatile substances must be observed for the discharge of exhaust air containing vapors.

See Sections 6, 7, 12, and 13 for more information on environmental exposure controls.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

(a) Appearance	Form:	Liquid	
	Color:	Colorless	
(b) Odor		Characteristic	
(c) Odor threshold		20 ppm	
(d) pH		No data available	
(e) Melting/freezing point		-86	°C
(f) Initial boiling point and boiling range		80	°C
(g) Flash point		-9	°C
(h) Evaporation rate		No data available	closed cup
(i) Flammability (solid, gas)		No data available	
(j) Upper/lower flammability or explosive limits		11.5 - 1.8	volume % in air
(k) Vapor pressure		90.6	mm Hg at 25°C
(l) Vapor density		2.41	(air = 1)
(m) Relative density		0.8	(water = 1)
(n) Solubility (ies)		29 gm/100 mL	in water
(o) Partition coefficient: n-octanol/water		0.29	as Pow
(p) Auto-ignition temperature		505	°C
(q) Decomposition temperature		No data available	
(r) Viscosity		No data available	

9.2 Other information

Chemical formula	$C_4 H_8 O$
Molecular weight	72.1

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical Stability

This material is expected to be stable under normal conditions of use. Hazardous polymerization will not occur.

10.3 Possibility of hazardous reactions

This material reacts violently with strong oxidants and inorganic acids causing a fire and explosion hazard.

10.4 Conditions to Avoid

Avoid contact with ignition sources and incompatible materials.

10.5 Incompatible materials

Avoid contact with strong oxidizing agents and strong inorganic acids. Attacks some plastics.

10.6 Hazardous Decomposition Products

In the event of fire, oxides of carbon, hydrocarbons, fumes, and smoke may be produced.

11. TOXICOLOGICAL INFORMATION

11.1 Likely routes of exposure

Likely routes of exposure include: inhalation, eye contact, and ingestion.

11.2 Signs and symptoms of exposure

Eye irritation signs and symptoms may include redness and pain.

Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea, and vomiting.

Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.

11.3 Delayed and immediate effects/Chronic effects from short- and long-term exposure

Eye

Contact with eyes may cause redness and pain. Serious/permanent damage is not expected to occur.

Skin

No significant signs or symptoms indicative of any health hazard are expected to occur as a result of skin absorption exposure. It is not expected to be toxic through dermal contact.

Inhalation

Inhalation of this material may cause: cough, dizziness, drowsiness, headache, nausea, vomiting, and lowering of consciousness. It is not expected to be toxic through inhalation.

Ingestion

Ingestion of this material may cause: cough, dizziness, drowsiness, headache, nausea, vomiting, and unconsciousness. It is not expected to be toxic through ingestion.

Chronic effects

Long term or repeated exposure to this material defats the skin.

Subchronic effects

This substance and vapor is irritating to the eyes and respiratory tract. The substance may cause effects on the central nervous system at high concentrations. Exposure far above the OEL may result in unconsciousness.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

No data available.

Reproductive toxicity

Animal tests show that this material possibly causes toxic effects upon human reproduction.

Specific target organ toxicity - single exposure

Central Nervous System (CNS): Exposure can cause effects on the central nervous system.

Specific target organ toxicity - repeat exposure

No data available.

Aspiration hazard

No data available.

Potential health effects

Irritating to the eyes and respiratory system. Vapors may cause drowsiness and dizziness.

11.4 Acute Toxicity Estimates

Compound Name	CAS #	TEST - SPECIES - RESULT
METHYL ETHYL KETONE	78-93-3	Oral LD50 - Rat: 2737 mg/kg; Dermal LD50 - Rabbit: 64800 mg/kg; Inhalation LC50 - Rat: >5000 ppm/6 hr

11.5 Carcinogenicity

IARC (International Agency for Research on Cancer):

No component of this product present in concentrations of 0.1% or greater is identified by IARC to be a probable, possible, or confirmed carcinogen.

NTP (National Toxicology Program):

No component of this product present in concentrations of 0.1% or greater is identified by NTP to be a known or reasonably anticipated carcinogen.

OSHA (U.S. Occupational Health and Safety Administration):

No component of this product present in concentrations of 0.1% or greater is identified by OSHA to be a carcinogen or potential carcinogen.

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Compound Name	CAS #	TEST-SPECIES-RESULTS
METHYL ETHYL KETONE	78-93-3	LC 50 - Leuciscus idus: 4600 mg/L/96 Hr; LC 50-Daphnia Magna: 1382 mg/L/48 Hr

12.2 Persistence and Degradability

According to National Library of Medicine's Hazardous Substance Databank, this material is expected to biodegrade.

12.3 Bioaccumulative potential

According to National Library of Medicine's Hazardous Substance Databank, the potential for bioconcentration in aquatic organisms is low.

12.4 Mobility in soil

According to National Library of Medicine's Hazardous Substance Databank [NLM HSDB], this material is expected to have high mobility in soil.

12.5 Other adverse effects

No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product disposal

Recover or recycle if possible. It is the responsibility of the waste generator to determine the physical characteristics and toxicity of the material generated in order to properly designate the waste classification and disposal methods in compliance with applicable regulations.

Do not dispose into the environment, in drains, or allow to enter waterways. Waste product should not be allowed to contaminate soil or water.

Dispose of contents/container to in accordance with local/regional/national/international regulations.

Container disposal

Follow all SDS/label precautions even after container is emptied because they may retain product residues.

Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed.

Empty containers should be taken for recycling, recovery, or disposal through a suitable qualified or licensed contractor and in accordance with governmental regulations.

Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition as this may cause them to explode.

14. TRANSPORT INFORMATION

- 14.1 UN/NA number** UN 1193
- 14.2 UN proper shipping name** Methyl ethyl ketone
- 14.3 Transport hazard class(es)** 3
- 14.4 Packing group** II
- 14.5 Environmental hazards** Not listed in Appendix B to 49 CFR §172.101.
IMDG Marine pollutant: No
- 14.6 Special precautions for the user**
Emergency Response Guide (ERG): 127
- 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code**
MARPOL Category: Z
IBC Code: 02

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of 29 CFR §1910.1200

This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substance Control Act (TSCA) or are exempt from reporting.

As defined under SARA 311 and 312, this product contains materials that are designated as having the following hazards: Acute Chronic Fire

FEDERAL REGULATORY LISTS:

Compound Name	CAS #	HAP ¹	SARA 313 ³	CERCLA RQ (lb) ⁴	RCRA Code ⁵	CAA 112(r) ²
METHYL ETHYL KETONE	78-93-3	N.L.	N.L.	5,000	U159	N.L.

N.L. - Not listed on regulatory list

Clean Air Act - CAA

¹ HAP: Hazardous Air Pollutant under the Clean Air Act Section 112 (b) [42 U.S.C. 7401 et seq]

²CAA 112(r): Regulated Toxic Substances and Threshold Quantities for Accidental Release Prevention [40 CFR 68]

Superfund Amendments and Reauthorization Act - SARA Title III

SARA 311/312: Hazardous Chemical Reporting [40CFR 370.2]

³SARA 313: Toxic Chemical Release Reporting [40CFR 372.65]

Comprehensive Environmental Response, Compensation, and Liability Act - CERCLA

⁴Reportable Quantities - RQ [40 CFR 302]

⁵Resource Conservation and Recovery Act - RCRA Waste Codes [40 CFR 302]

CALIFORNIA REGULATIONS:

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

PENNSYLVANIA REGULATIONS:

The following product components are cited on the Pennsylvania Hazardous Substances List and/or the Pennsylvania Environmental Hazardous Substances List, and are present at levels which require reporting.

Compound Name	CAS #	LISTING	AMOUNT
METHYL ETHYL KETONE	78-93-3	PA RTK ENVIRONMENTAL	> 99.5%

To the best of our knowledge, this product does not contain any components cited on the Pennsylvania Special Hazardous Substances List.

ADDITIONAL STATE REGULATIONS:

Components of this product are found on the following state lists.

Compound Name	CAS #	STATE LISTS
METHYL ETHYL KETONE	78-93-3	DE, FL, MA, MN, NJ, NY, RI WI

15.2 Chemical safety assessment

No data available.

16. OTHER INFORMATION

Reason for Issue: New SDS
Approval date: April 28, 2015
Supersedes date: New

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END OF SDS
