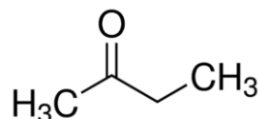


### MATERIAL SAFETY DATA SHEET (MSDS)

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

##### 1.1. Product identifier

Product form : Substance  
:  
EC Index-No. : 606-002-00-3  
EC-No. : 201-159-0  
CAS-No. : 78-93-3  
Product code : 00144  
Formula : C<sub>4</sub>H<sub>8</sub>O  
Chemical structure :



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

###### 1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemicals, Manufacture of substances

###### 1.2.2. Uses advised against

No additional information available


##### 1.3. Details of the supplier of the safety data sheet

SPAN LAB  
UNIT NO. 14, SKY INDUSTRIAL ESTATE, WALIV, VASAI (E)  
401208 Mumbai - INDIA  
PH: +91 9820509929  
[info@spanlab.in](mailto:info@spanlab.in) [www.spanlab.in](http://www.spanlab.in)

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### Classification according to Regulation (EC) No. 1272/2008 [CLP]

 H225  
Category 2  
Serious eye damage/eye irritation, Category 2 H319  
Specific target organ toxicity — Single exposure, Category 3, Narcosis H336

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

# ETHYL METHYL KETONE For Synthesis

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### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

F; R11

T; R23/24/25

T; R39/23/24/25

Full text of R-phrases: see section 16

### Adverse physicochemical, human health and environmental effects

No additional information available

## 2.2. Label elements

### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS02

GHS07

Signal word (CLP) :

Danger

Hazard statements (CLP) :

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

Precautionary statements (CLP) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Name	Product identifier	%
ETHYL METHYL KETONE For Synthesis	(CAS-No.) 78-93-3 (EC-No.) 201-159-0 (EC Index-No.) 606-002-00-3	100

Full text of R- and H-statements: see section 16

### 3.2. Mixtures

Not applicable

# ETHYL METHYL KETONE For Synthesis

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures general	: Call a POISON CENTER/doctor. Specific treatment (see supplemental first aid instruction on this label).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Immediately call a POISON CENTER/doctor. Take off immediately all contaminated clothing. Wash with plenty of water/.... Specific measures (see supplemental first aid instruction on this label). Wash contaminated clothing before reuse.
First-aid measures after eye contact	: Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes.
First-aid measures after ingestion	: Rinse mouth. Obtain emergency medical attention. Immediately call a POISON CENTER/doctor. Specific treatment (see supplemental first aid instruction on this label).

#### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: May cause drowsiness or dizziness.
Symptoms/effects after eye contact	: Causes serious eye irritation.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media	: dry chemical powder, alcohol-resistant foam, carbon dioxide (CO <sub>2</sub> ).
Unsuitable extinguishing media	: Do not use a heavy water stream.

#### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: Flammable solid.
Explosion hazard	: May form flammable/explosive vapour-air mixture.

#### 5.3. Advice for firefighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment.
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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.
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##### 6.1.1. For non-emergency personnel

No additional information available

##### 6.1.2. For emergency responders

Protective equipment	: Avoid breathing dust/fume/gas/mist/vapours/spray.
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#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Collect spillage. On land, sweep or shovel into suitable containers.
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#### 6.4. Reference to other sections

No additional information available

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed	: Handle empty containers with care because residual vapours are flammable.
-----------------------------------	---

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Precautions for safe handling	: No open flames. No smoking. Do not breathe dust/fume/gas/mist/vapours/spray.
Hygiene measures	: Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment.
Storage conditions	: Heat sources. Direct sunlight. Keep in fireproof place.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

Hand protection	: protective gloves
Eye protection	: Chemical goggles or safety glasses
Skin and body protection	: Wear fire/flame resistant/retardant clothing.
Respiratory protection	: Wear appropriate mask

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Clear Colorless.
Odour	: sharp mint-like odor.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: 2.7
Melting point	: -87 °C
Freezing point	: No data available
Boiling point	: 80 °C
Flash point	: -3 °C
Auto-ignition temperature	: 4040 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammable Flammable solid.

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Vapour pressure	: 95 hPa at 20 °C
Relative vapour density at 20 °C	: 2.49
Relative density	: No data available
Density	: 0.81 g/cm <sup>3</sup>
Solubility	: Water: 29 g/100ml
Log Pow	: 0.29
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 0.018 - 0.101 vol %

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Flammable solid. May form flammable/explosive vapour-air mixture.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Open flame. Overheating. Direct sunlight. Heat. Sparks.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

May release flammable gases.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

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STOT-single exposure : May cause drowsiness or dizziness.

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Toxic if swallowed. Toxic in contact with skin.

### SECTION 12: Ecological information

#### 12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

##### ETHYL METHYL KETONE For Synthesis (78-93-3)

Log Pow	0.29
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#### 12.4. Mobility in soil

No additional information available

#### 12.5. Results of PBT and vPvB assessment

No additional information available

#### 12.6. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Additional information : Handle empty containers with care because residual vapours are flammable.

Ecology - waste materials : Hazardous waste due to toxicity.

### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

#### 14.1. UN number

UN-No. (ADR) : 1193

UN-No. (IMDG) : 1193

UN-No. (IATA) : 1193

# ETHYL METHYL KETONE For Synthesis

## Safety Data Sheet

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UN-No. (ADN) : 1193

UN-No. (RID) : 1193

### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : ETHYL METHYL KETONE (METHYL ETHYL KETONE)

Proper Shipping Name (IMDG) : ETHYL METHYL KETONE (METHYL ETHYL KETONE)

Proper Shipping Name (IATA) : Ethyl methyl ketone

Proper Shipping Name (ADN) : ETHYL METHYL KETONE (METHYL ETHYL KETONE)

Proper Shipping Name (RID) : ETHYL METHYL KETONE (METHYL ETHYL KETONE)

Transport document description (ADR) : UN 1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE), 3, II, (D/E)

Transport document description (IMDG) : UN 1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE), 3, II (-1°C c.c.)

Transport document description (IATA) : UN 1193 Ethyl methyl ketone, 3, II

Transport document description (ADN) : UN 1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE), 3, II

Transport document description (RID) : UN 1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE), 3, II

### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR) : 3

Danger labels (ADR) : 3



#### IMDG

Transport hazard class(es) (IMDG) : 3

Danger labels (IMDG) : 3



#### IATA

Transport hazard class(es) (IATA) : 3

Hazard labels (IATA) : 3



#### ADN

Transport hazard class(es) (ADN) : 3

Danger labels (ADN) : 3



# ETHYL METHYL KETONE For Synthesis

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### RID

Transport hazard class(es) (RID) : 3

Danger labels (RID) : 3



### 14.4. Packing group

Packing group (ADR) : II

Packing group (IMDG) : II

Packing group (IATA) : II

Packing group (ADN) : II

Packing group (RID) : II

### 14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

### 14.6. Special precautions for user

#### - Overland transport

Classification code (ADR) : F1

Limited quantities (ADR) : 1I

Excepted quantities (ADR) : E2

Packing instructions (ADR) : P001, IBC02, R001

Mixed packing provisions (ADR) : MP19

Portable tank and bulk container instructions (ADR) : T4

Portable tank and bulk container special provisions (ADR) : TP1

Tank code (ADR) : LGBF

Vehicle for tank carriage : FL

Transport category (ADR) : 2

Special provisions for carriage - Operation (ADR) : S2, S20

Hazard identification number (Kemler No.) : 33

Orange plates :



Tunnel restriction code (ADR) : D/E

EAC code : •2YE

#### - Transport by sea

Limited quantities (IMDG) : 1 L

Excepted quantities (IMDG) : E2

Packing instructions (IMDG) : P001

IBC packing instructions (IMDG) : IBC02

Tank instructions (IMDG) : T4

Tank special provisions (IMDG) : TP1

EmS-No. (Fire) : F-E



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EmS-No. (Spillage)	: S-D
Stowage category (IMDG)	: B
Flash point (IMDG)	: -1°C c.c.
Properties and observations (IMDG)	: Colourless liquid. Flashpoint: -1°C c.c. Explosive limits: 1.8% to 11.5% Miscible with water.
MFAG-No	: 127

### - Air transport

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y341
PCA limited quantity max net quantity (IATA)	: 1L
PCA packing instructions (IATA)	: 353
PCA max net quantity (IATA)	: 5L
CAO packing instructions (IATA)	: 364
CAO max net quantity (IATA)	: 60L
ERG code (IATA)	: 3L

### - Inland waterway transport

Classification code (ADN)	: F1
Limited quantities (ADN)	: 1 L
Excepted quantities (ADN)	: E2
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01
Number of blue cones/lights (ADN)	: 1

### - Rail transport

Classification code (RID)	: F1
Limited quantities (RID)	: 1L
Excepted quantities (RID)	: E2
Packing instructions (RID)	: P001, IBC02, R001
Mixed packing provisions (RID)	: MP19
Portable tank and bulk container instructions (RID)	: T4
Portable tank and bulk container special provisions (RID)	: TP1
Tank codes for RID tanks (RID)	: LGBF
Transport category (RID)	: 2
Colis express (express parcels) (RID)	: CE7
Hazard identification number (RID)	: 33

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions

ETHYL METHYL KETONE For Synthesis is not on the REACH Candidate List

ETHYL METHYL KETONE For Synthesis is not on the REACH Annex XIV List

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### 15.1.2. National regulations

#### Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

#### Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

#### Denmark

Classification remarks : Emergency management guidelines for the storage of flammable liquids must be followed

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product  
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

### 15.2. Chemical safety assessment

No additional information available

## SECTION 16: Other information

Full text of R-, H- and EUH-statements:

Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
R11	Highly flammable
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
F	Highly flammable
T	Toxic

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*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*