
 <p>CHEMLABS Quality Our Forte</p>	<p>LEONID CHEMICALS PVT. LTD., BANGALORE</p> <p>An ISO-9001:2008 Certified Company</p> <p>Quality Assurance Department</p>	<p>(CODE) DOCUMENT : WI (CODE) SECTION : WI/SM (DATE) : 01.04.2011</p>	 <p>Issue : 02 Rev.: 00</p>
<p>Title: MATERIAL SAFETY DATA SHEET (MSDS): 2-BUTANONE</p>			<p>1 Page of 1</p>

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name:

2-Butanone

Cat No:

B024

CAS-No. :

78-93-3

Synonyms:

Methyl ethyl Ketone, MEK, Ethyl methyl Ketone

Company Information:

LEONID CHEMICALS Pvt Ltd,
62/A2, 1st Stage,
Yeshvanthpur Industrial Suburb,
Asoka puram School Road,
Bangalore -22, Karnataka, INDIA
Ph- +91-80-23378354
Fax: +918023378354/23377126

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

Identified uses: Laboratory chemicals, Manufacture of substances

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Flammable liquids (Category 2)



Eye irritation (Category 2)

Specific target organ toxicity - single exposure (Category 3)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking.

Vapours may cause drowsiness and dizziness.

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Label elements

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

Pictogram

Signal word Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - 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.

Supplemental Hazard information (EU)

EUH066 Repeated exposure may cause skin dryness or cracking.

According to European Directive 67/548/EEC as amended.

Hazard symbol(s)

R-phrase(s)

R11 Highly flammable.

R36 Irritating to eyes.

R66 Repeated exposure may cause skin dryness or cracking.

R67 Vapours may cause drowsiness and dizziness.

S-phrase(s)

S 9 Keep container in a well-ventilated place.

S16 Keep away from sources of ignition - No smoking.

Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS



Formula: C₄H₈O

Molecular Weight: 72.11 g/mol

CAS-No.: 78-93-3

EC-No.: 201-159-0

Index-No.: 606-002-00-3

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4. FIRST AID MEASURES

Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

Central nervous system depression, Gastrointestinal disturbance, narcosis

Indication of any immediate medical attention and special treatment needed

no data available

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

no data available

Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.



Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

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Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage, including any incompatibilities

Store under inert gas. Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Hygroscopic.

Specific end uses

no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components with workplace control parameters

Exposure controls



Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

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Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique

(Without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection

impervious clothing, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.


Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

- a) Appearance Form: liquid, clear
Colour: colourless
- b) Odour no data available
- c) Odour Threshold no data available
- d) pH: no data available
- e) Melting point/freezing point: -87 °C
- f) Initial boiling point and boiling range: 80 °C.
- g) Flash point: -3 °C - closed cup
- h) Evaporation rate: no data available
- i) Flammability (solid, gas): no data available
- j) Upper/lower flammability or explosive limits
Upper explosion limit: 10.1 %(V)
Lower explosion limit: 1.8 %(V)
- k) Vapour pressure: 95 hPa at 20 °C
- l) Vapour density: 2.49 - (Air = 1.0)
- m) Relative density: 0.805 g/mL at 25 °C
- n) Water solubility: soluble
- o) Partition coefficient: noctanol/waterlog Pow: 0.29
- p) Autoignition temperature: no data available
- q) Decomposition temperature: no data available

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- r) Viscosity: no data available
- s) Explosive properties: no data available
- t) Oxidizing properties: no data available

Other safety information

Surface tension 24,6 mN/m at 20 °C

10. STABILITY AND REACTIVITY

Reactivity

no data available

Chemical stability

no data available

Possibility of hazardous reactions

no data available

Conditions to avoid

Exposure to moisture.

Heat, flames and sparks. Extremes of temperature and direct sunlight.

Incompatible materials

Oxidizing agents, Strong reducing agents

Hazardous decomposition products

Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

LD50 Oral - rat - 2.737 mg/kg

LC50 Inhalation - mouse - 4 h - 32.000 mg/m³

LC50 Inhalation - Mammal - 38.000 mg/m³

LD50 Dermal - rabbit - 6.480 mg/kg

Skin corrosion/irritation

Skin - rabbit - Skin irritation - 24 h



Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

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no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as

probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.

Ingestion May be harmful if swallowed.

Skin May be harmful if absorbed through skin. Causes skin irritation.

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Eyes Causes serious eye irritation.

Signs and Symptoms of Exposure

Central nervous system depression, Gastrointestinal disturbance, narcosis

Additional Information

RTECS: EL6475000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish mortality NOEC - *Cyprinodon variegatus* (sheepshead minnow) - 400 mg/l - 96 h

LC50 - *Pimephales promelas* (fathead minnow) - 3.130 - 3.320 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

LC50 - *Daphnia magna* (Water flea) - > 520 mg/l - 48 h

EC50 - *Daphnia magna* (Water flea) - 7.060 mg/l - 24 h



Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

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Results of PBT and vPvB assessment
no data available

Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

UN number

ADR/RID: 1193 IMDG: 1193 IATA: 1193

UN proper shipping name

ADR/RID: ETHYL METHYL KETONE

IMDG: ETHYL METHYL KETONE

IATA: Ethyl methyl ketone

Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

Packaging group

ADR/RID: II IMDG: II IATA: II

Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user



no data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

no data available

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Chemical Safety Assessment
no data available

16. OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Leonid Chemicals Pvt. Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Leonid Chemicals Pvt. Ltd. has been advised of the possibility of such damages.



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Quality Our Forte

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		(CODE) SECTION : B024	
Title: SPECIFICATION MANUAL – BUTAN-2-ONE			Issue : 02 Rev.: 00 1 Page of 1

Specification manual - Butan-2-one

C₄H₈O

MW: 72.11

Product : Butan-2-one
Description : Clear liquid
Cat No : B024
Cas No : 78-93-3
Prepared Date : 03.09.2008
Approved Date : 03.09.2008

REVISION HISTORY			
Issue/Rev	Description of Change	Author	Effective Date
01/00	Initial Release	S. Paul Joshua	03.09.2008
02/00	Reviewed no changes	S. Paul Joshua	01.04.2011
Next Review Due :	02.04.2015		
To be reviewed by :	Head-QC/QA		

Sl. No.	Tests	Specification
		LR
1	Assay (GC)	Min 99 %
2	Boiling range	75°C-80.5°C

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance