

**Safety data sheet as per COMMISSION REGULATION (EU) No 453/2010  
of 20 May 2010 amending Regulation (EC) No 1907/2006  
Product: Methyl ethyl ketone**



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

**1.1 Product identifier**

**Trade name: Methyl ethyl ketone (MEK)/ 2-butanone**

**CAS No.: 78-93-3**

**EC No.: 201-159-0**

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

**Relevant identified uses:** It is a liquid solvent used in surface coatings, adhesives, printing inks, chemical intermediates, magnetic tapes and lube oil dewaxing agents. MEK also is used as an extraction medium for fats, oils, waxes and resins

**Uses identified against:** no data available

**1.2 Details of the supplier of the safety data sheet:**

**Manufacturer/Supplier:**

Prasol Chemicals Ltd.,  
Prasol House, Plot No.A-17/2/3,  
T.T.C. Indl. Area, Khairne M.I.D.C.,  
Navi Mumbai - 400 710,  
Maharashtra, India.  
Tel: +91-22-27782555  
Fax: +91-22-27782430

**Further information obtainable from:**

Mr. Dhaval Parikh

e-mail:sales@prasolchem.com; inquiry@prasolchem.com

**1.4 Information in case of emergency:**

Product safety department Tel: +91-22- 27782555; Fax:+91-22- 27782430

Other Comments (e.g. language(s) of the phone service): English

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**2.1.1 Classification according to Regulation (EC) No 1272/2008(CLP)**



GHS02



GHS07

Flam. Liq. 2 H225 Highly flammable liquid and vapor

Eye Irrit. 2 H319 Causes serious eye irritation

STOT SE 3 H336 May cause drowsiness or dizziness

**2.1.2 Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant



F; highly flammable

R11: Highly flammable

R36: Irritating to eyes

R67: Vapors may cause drowsiness and dizziness.

**Information concerning particular hazards for human and environment:** Not applicable

**2.2 Label elements**

**Labeling according to Regulation (EC) No 1272/2008 (CLP)**

The substance is classified and labeled according to the CLP regulation.

**Hazard pictograms**



GHS02



GHS07

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**Signal word** Danger

**Hazard-determining components of labeling:** Void

**Hazard statements**

H225 Highly flammable liquid and vapor.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

**Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up

P501 Dispose of contents/container in accordance with local/regional/national/international regulations

**2.3 Other hazards**

**Results of PBT and vPvB assessment:** Not applicable

**SECTION 3: Composition/information on ingredients**

**Chemical characterization:**

CAS No.	Description
78-93-3	Methyl ethyl ketone

**Identification number(s)**

**EC Number** : 201-159-0

**Index number** : 606-002-00-3

**Additional information:**

Molecular Formula: C<sub>4</sub>H<sub>8</sub>O

Molecular Weight: 72.11g/mol

**SECTION 4: First aid measures**

**4.1 General information:**

**After inhalation:** Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Consult a doctor.

**After skin contact:** Remove and isolate contaminated clothing and shoes. In case of contact with substance, immediately flush skin with running water. Wash skin with soap and water. In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin. Keep victim warm and quiet.

**After eye contact:** Immediately flush eyes with running water for at least 20 minutes. If symptoms persist consult a doctor.

**After swallowing:** If symptoms persist consult doctor.

**Information for doctor:**

Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

**4.2 Most important symptoms and effects, both acute and delayed**

Substance causes eye irritation or damage.

**4.3 Indication of any immediate medical attention and special treatment needed** Symptoms following acute acetone ingestion include nausea, vomiting, gastric hemorrhage, sedation, respiratory depression, ataxia, and paresthesia.

**Treatment**

**ORAL EXPOSURE:** Generally requires no specific intervention. Administer intravenous fluids and antiemetics as necessary.

**SEVERE POISONING:** Administer intravenous 0.9% saline for hypotension or persistent tachycardia. Endotracheal intubation and mechanical ventilation may be required in patients with CNS or respiratory depression. Evaluate for gastrointestinal bleeding after large ingestion.

**INHALATION EXPOSURE:** Remove from exposure. Administer oxygen if respiratory distress develops. Treat wheezing or persistent coughing with inhaled beta agonists.

**EYE EXPOSURE:** Irrigate eyes with 0.9% saline after splash exposures. Perform a slit lamp exam in patients

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with persistent irritation. Refer to an ophthalmologist if corneal injury is present.

### **SECTION 5: Firefighting measures**

**5.1 Suitable extinguishing agents:** Small fires: Dry chemical, CO<sub>2</sub>, water spray or alcohol-resistant foam. Large fires: Water spray, fog or alcohol resistant foam. Use water spray or fog;

**5.2 Special hazards caused by the substance, its products of combustion or resulting gases:**

Highly flammable, will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers.

Fire may produce irritating, corrosive and/or toxic gases. Vapors may cause dizziness or suffocation.

Containers may explode when heated.

**5.3 Protective equipment:** Wear positive pressure self-contained breathing apparatus (SCBA).

**Additional information**

A vapor suppressing foam may be used to reduce vapors.

Water spray may reduce vapor; but may not prevent ignition in closed spaces. Runoff from fire control may cause pollution.

### **SECTION 6: Accidental release measures**

**6.1 Person-related safety precautions:**

Wear protective clothing.

Keep unprotected persons away. Do not touch or walk through spilled material.

Stop leak if you can do it without risk.

**6.2 Measures for environmental protection:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

**6.3 Measures for cleaning/collecting:**

Eliminate all ignition sources. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material. A vapor suppressing foam may be used to reduce vapors.

Large spills: Dike far ahead of liquid spill for later disposal.

**Additional information:** All equipment used when handling the product must be grounded.

**6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment

See Section 13 for disposal information

### **SECTION 7: Handling and storage**

**7.1 Precautions for safe handling:**

Avoid breathing vapors. Keep upwind. Do not handle broken packages without protective equipment. Wash away any material which may have contacted the body with copious amounts of water or soap and water.

**Information about fire - and explosion protection:**

Eliminate all ignition sources (Do not smoke, flares, sparks or flames in immediate area). Protect against electrostatic charges.

**Storage:**

**7.2 Conditions for safe storage, including any incompatibilities:** Acetone is stored in steel tanks. Local exhaust ventilation should be applied wherever there is an incidence of point source emissions or dispersion of regulated contaminants in the work area.

**Information about storage in one common storage facility:** Store away from incompatibles.

**Further information about storage conditions:**

Store acetone in closed containers, and keep away from heat, sparks, and flames. Store in cool and dry conditions.

**Additional information about design of technical facilities:** Properly operating chemical fume hood designed for

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hazardous chemicals and having an average face velocity of at least 100 feet per minute.  
7.3 Specific end use(s) No further relevant information available

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

**Ingredients with limit values that require monitoring at the workplace:** no data available

**8.2 Exposure controls**

**Personal protective equipment:**

**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

**Respiratory protection:**

Use suitable respiratory protective device in case of insufficient ventilation.

**Protection of hands:** Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer

**Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:** Tightly sealed goggles; Face shield

**Body protection:** Protective clothing made from polyethylene or chlorinated polyethylene.

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

<b>Appearance</b>	: Colorless liquid
<b>Odour</b>	: mint or acetone-like
<b>Odour threshold</b>	: 20ppm
<b>pH</b>	: not applicable
<b>Melting point/Melting range</b>	: -86°C
<b>Boiling point/Boiling range</b>	: 80°C
<b>Flash point</b>	: -9- -6°C (closed cup)
<b>Evaporation rate</b>	: 6 (butyl acetate= 1)
<b>Flammability</b>	: highly flammable

**Upper/lower flammability or explosive limits:**

**Lower:** 1.8vol%

**Upper:** 10.1 vol%

<b>Vapour pressure at 20-25°C</b>	: 10.4-12.6kPa
<b>Vapour density</b>	: 2.49 (Air = 1)
<b>Density at 20°C</b>	: 0.81 g/cm <sup>3</sup>
<b>Solubility in / Miscibility with water</b>	: 27.5 vol%
<b>Partition coefficient (n-octanol/water) at 23°C:</b>	0.3 @ 40 °C, pH 7
<b>Auto-ignition temperature</b>	: 404°C
<b>Decomposition temperature</b>	: no data
<b>Viscosity: Dynamic at 20°C</b>	: 0.40 mPa·s

**Explosive properties:** Product is not explosive. However, formation of explosive air/ vapour mixtures is possible

**Oxidising properties** : no oxidising properties

**9.2 Other information** Surface tension 24,6 mN/m at 20 °C

## SECTION 10: Stability and reactivity

**10.1 Reactivity** No dangerous reactions known.

**10.2 Chemical stability**

**10.3 Possibility of hazardous reactions**

**10.4 Conditions to avoid**

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**10.5 Incompatible materials** Oxidizers, Acids

**Dangerous reactions:** Acetone will be oxidized with explosive violence if brought into contact with the mixed (nitrating) acids, particularly under confinement.

**10.6 Hazardous decomposition products:** Carbon monoxide and carbon dioxide.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity:**

LD50	Oral	Rat	2.737 mg/kg
LC50	Inhalation	Mouse	4 h, 32.0 mg/m <sup>3</sup>
LC50	Inhalation	Mammal	38.000 mg/m <sup>3</sup>
LD50	Dermal	Rabbit	6.480 mg/kg

**Skin corrosion/irritation:** No irritant effect (rabbit) Prolonged or repeated skin contact may produce dermatitis

**Serious eye damage/irritation:** Irritating effect (rabbit)

**Respiratory or skin sensitization:** No sensitizing effects known.

**Germ cell mutagenicity:** non mutagenic

**Carcinogenicity:** 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:** not toxic

**STOT-single exposure:** May cause drowsiness or dizziness

**STOT-repeated exposure:** no data available

**Aspiration hazard:** no data available

**Additional information:** To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

## SECTION 12: Ecological information

### 12.1 Toxicity

**Aquatic toxicity:**

Toxicity to fish,

Mortality NOEC-Cyprinodon variegatus (sheepshead minnow)-400 mg/l-96h

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

### 12.2 Persistence and degradability

**Biodegradation:** Readily biodegradable (100%)

**Photo degradation:** no data available

**12.3 Bio accumulative potential** low potential for bioaccumulation.

**12.4 Mobility in soil** log Koc 0.654 @ 25 °C

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects** Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

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**SECTION 13: Disposal considerations**

**Waste treatment methods** Do not dispose of with household waste.

**Product:**

**Recommendation** Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable

**Contaminated packaging:** Dispose of waste according to applicable legislation. Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled.

**SECTION 14: Transport information**

**Land Transport (ADR/RID)      Marine Transport (IMDG)      Air Transport (ICAO/ IATA)**

**14.1 UN/ID Number:** 1193

**14.2 UN proper shipping name:** METHYL ETHYL KETONE

**14.3 Transport hazard class:** 3 Flammable liquids

**14.4 Packaging group:** II

**14.5 Environmental hazards:** not a marine pollutant

**14.6 Special precautions for the user:** no further information

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** no data available

**SECTION 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 COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006

**Hazard pictograms** Please refer section 2

**Signal word** Danger

**Labeling according to EU guidelines:**

**Code letter and hazard designation of product:** Please refer section 2

**Risk phrases:** Please refer section 2

**15.2 Chemical safety assessment**

A Chemical Safety Assessment has not been carried out and will be applicable at the time of REACH Registration.

**Substances of very high concern (SVHC) according to REACH, Article 57** The substance is not listed as SVHC.

**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Department issuing MSDS:**

Product safety department.

**Contact:** Tel: +91-022-27782555 Fax: +91-022-27782430

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

CAS: Chemical Abstracts Service (division of the American Chemical Society)

EC50: half minimal effective concentration

EINECS/ EC: European Inventory of Existing Commercial Chemical Substances

EMS Number: Emergency Schedule Number

GHS: Globally Harmonized System of Classification and Labeling of Chemicals

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

IMDG: International Maritime Code for Dangerous Goods

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NOEC: No Observed Effect Concentration( NOEL No Observable Effect Level)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

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**Sources**

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/ EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

ECHA: <http://echa.europa.eu/brief-profile/-/briefprofile/100.001.054>

Aldrich :

<http://www.sigmaaldrich.com/MSDS/MSDS/DisplayMSDSPage.do?country=IN&language=en&productNumber=443468&brand=SIAL&PageToGoToURL=http%3A%2F%2Fwww.sigmaaldrich.com%2Fcatalog%2Fproduct%2Fsial%2F443468%3Flang%3Den>

CDC : <http://www.cdc.gov/niosh/npg/npgd0069.html>

HSDB : <http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+99>

**Data compared to the previous version altered.**

•Section 1: Identification of the substance/mixture and of the company/undertaking

•Section 2: Hazard Identification

•Section 3: Composition/information on ingredients

•Section 4: First-aid measures.

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•Section 7: Handling and storage.

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