

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



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

**1.1 Product identifier**

**Trade name: Methyl isobutyl ketone/ 4-methylpentan-2-one/ MIBK**

**CAS No.: 108-10-1**

**EC No.: 203-550-1**

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

**Relevant identified uses:**

As a solvent for nitrocellulose, lacquers, and certain polymers and resins

As an extraction solvent for precious metals

As a solvent for textile, industrial and other maintenance coatings

As a precursor to 6PPD, an antiozonant used in tires.

**Sector of use:** SU8,9: Manufacture of bulk, large scale chemicals (including petroleum products) and fine chemicals; SU10 formulations

**Environmental release category:** Manufacture (ERC1) and processing aids (ERC8)

**Uses identified against:** none identified

**1.3 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

**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

Eye Irrit. 2 H319 Causes serious eye irritation

Flammable liquid 2 H225 highly flammable liquid and vapour

Acute Tox. 4 H332 Harmful if inhaled

STOT Single Exp. 3 H335 May cause respiratory irritation

EUH066 Repeated exposure may cause skin dryness or cracking

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



Xi; Irritant

F, R11

Highly flammable

Xn, R20

Harmful by inhalation

R36/37/38

Irritating to eyes, respiratory system and skin

R66

Repeated exposure may cause skin dryness or cracking

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

**2.2 Label elements**

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

**Hazard pictograms**

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GHS02



GHS07

**Signal word** *Danger*

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

**Hazard statements**

H319 *Causes serious eye irritation*

H225 *Highly flammable liquid 2*

H332 *Harmful if inhaled*

H335 *May cause respiratory irritation*

EUH066 *Repeated exposure may cause skin dryness or cracking*

**Precautionary statements**

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*

P280 *Wear protective gloves/protective clothing/eye protection/face protection.*

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

P337+P313 *If eye irritation persists: Get medical advice/attention*

**2.3 Other hazards**

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

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

**Chemical characterization:**

CAS No.	Description
108-10-1	Methyl isobutyl ketone

**Identification number(s)**

**EC Number** : 203-550-1

**Index number** : 606-004-00-4

**Additional information:**

**Molecular Formula:** C<sub>6</sub>H<sub>12</sub>O

**Molecular Weight:** 100.16g/mol

### **SECTION 4: First aid measures**

**4.1 General information:** *Consult a physician. Show this safety data sheet to the doctor in attendance.*

**After inhalation:** *If breathing, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.*

**After skin contact:** *Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.*

**After eye contact:** *Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.*

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

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

**The following symptoms may occur:** *Can cause central nervous system depression, Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Blood disorders, Dermatitis, Blurred vision.*

**4.3 Indication of any immediate medical attention and special treatment needed** *No further relevant information available.*

**Information for doctor:** *Treat symptomatically and supportively.*

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

**5.1 Suitable extinguishing agents:**

*For small (incipient) fires water spray, dry powder, Carbon dioxide (CO<sub>2</sub>), Special foam for polar solvents.*

*Unsuitable extinguishing media: High volume water jet*

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**5.2 Special hazards arising from the substance or mixture** Vapors are heavier than air and may spread along floors. Possible re-ignition of vapors from a distance. Warm impregnated insulating material can, with time, ignite spontaneously.

**5.3 Advice for firefighters:** Use water spray to cool unopened containers Wear self-contained breathing apparatus for firefighting if necessary.

**Additional information** Use water spray to cool unopened containers

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

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

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

**6.2 Environmental precautions:** Dam up with sand or inert earth (do not use combustible materials). Do not allow to enter sewers/ surface or ground water.

### **6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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

### **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**

**Storage and handling precautions applicable:** Liquid. Flammable, Irritant, vapors explosive in air

**7.1 Precautions for safe handling:** Avoid inhalation of vapors. Do not get in eyes, on skin, or on clothing. When using, do not eat, drink or smoke. Wash hands after handling. Remove contaminated clothing and protective equipment before entering eating areas Take measures to prevent the buildup of electrostatic charge.

**Information about fire - and explosion protection:** Keep ignition sources away. Do not smoke.

**7.2 Conditions for safe storage, including any incompatibilities:** 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.

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

**Further information about storage conditions:** Store away from moisture. Store in cool and dry place.

**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:** Not required.

**Additional information:** The lists valid during the making were used as basis.

### **8.2 Exposure controls**

**Personal protective equipment:**

**General protective and hygienic measures:**

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:**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose 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).

**Protection of hands:** intermittent contact: Gloves (PVC, neoprene, nitrile rubber)

According to permeation index EN 374: 1 (time elapsed > 10 mins)

Prolonged contact: Impervious butyl rubber gloves

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality

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PRASOL

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:** Safety glasses with side-shields

**Body protection:** Complete suit protecting against chemicals. 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.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

<b>Appearance</b>	: Colorless liquid
<b>Odour</b>	: mild ketone/ camphor like
<b>Odour threshold</b>	: 0.1ppm
<b>pH</b>	: not determined (does not liberate H ions when dissolved)
<b>Melting point/Melting range</b>	: -4.7°C
<b>Initial Boiling point/Boiling range</b>	: 117-118°C
<b>Flash point</b>	: 23°C
<b>Evaporation rate</b>	: 1.6(butyl acetate=1)
<b>Flammability</b>	: flammable
<b>Upper/lower flammability or explosive limits:</b>	
Lower: 1.4vol%	
Upper: 7.5 vol%	
<b>Vapour pressure at 20°C</b>	: 14.8mmHg
<b>Vapour density</b>	: 3.45 (air = 1)
<b>Relative density at 20°C</b>	: 0.801
<b>Solubility in / Miscibility with water</b>	: 14.1g/L at 20°C and pH 5.4
<b>Partition coefficient (n-octanol/water) at 25°C: log Kow</b>	1.9
<b>Auto-ignition temperature</b>	: 460°C
<b>Decomposition temperature</b>	: not determined
<b>Viscosity at 20°C</b>	: 0.585Pas
<b>Explosive properties</b>	: not determined
<b>Oxidising properties</b>	: none
<b>9.2 Other information</b>	Surface tension 24.0dynes/cm at 25°C

## SECTION 10: Stability and Reactivity

**10.1 Reactivity** No dangerous reactions known.

### 10.2 Chemical stability

Under storage at normal ambient temperatures (minus 40° C to + 40° C), the product is stable.

No hazardous reaction when handled and stored according to provisions.

**10.3 Possibility of hazardous reactions** No known hazardous reactions

**10.4 Conditions to avoid** Heat, flames and sparks.

**10.5 Incompatible materials:** Strong oxidizing agents, Strong bases

**10.6 Hazardous decomposition products:** carbon oxides

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity:**

LD50	Oral	rat	2080 mg/kg
LC50	Inhalation	rat	4h 8.2-16.4mg/L
LD50	Dermal	rat	>2000 mg/kg

**Skin corrosion/irritation:** mild skin irritation (rabbit, 24h)

**Serious eye damage/irritation:** moderate eye irritation (rabbit, 24h)

**Respiratory or skin sensitization:** No sensitizing effects known.(guinea pigs)

**Germ cell mutagenicity:** non genotoxic



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**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:** NOAEL 2000ppm reproductive toxicity

NOAEL 1000ppm parental systemic and neonatal toxicity

NOEL 4106mg/m<sup>3</sup> developmental toxicity

**STOT-single exposure:** Inhalation - May cause respiratory irritation. - Lungs

**STOT-repeated exposure:** Repeated exposure may cause skin dryness or cracking

NOAEL 250mg/Kg bw/d<sup>3</sup> (oral) caused kidney effects in rats

NOAEC 450ppm (inhalation) caused kidney effects in rats

**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:

LC50	96h	179mg/l	(Danio rerio/ zebrafish)
EC50	48h	>200 mg/L	(Daphnia magna)
NOEC	21 d	78 mg/L	(Daphnia magna) reproductive
TGK	8 d	725 mg/L	(Scenedesmus quadricauda / green algae) growth inhibition
ErC50	7d	>146 mg/L	(Lemna gibba/ fresh water plant)
TGK	20h	941 mg/L	(Uronema parduzci/ microorganism) growth inhibition

### 12.2 Persistence and degradability

**Biodegradation** readily biodegradable, 83%, 10d

**12.3 Bio accumulative potential** not expected to bio-accumulate.

**12.4 Mobility in soil** log K<sub>oc</sub> 1.32 (calculated)

### 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** No further relevant information available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product:

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is flammable.

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging:** Disposal must be made according to official regulations.

**Recommended cleansing agents:** Water, if necessary together with cleansing agents.

## SECTION 14: Transport information

### Land Transport (ADR/RID)

### Marine Transport (IMDG)

### Air Transport (ICAO/ IATA)

**14.1 UN/ID Number:** 1245

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

**14.3 Transport hazard class:** 3

**14.4 Packaging group:** II

**14.5 Environmental hazards:** none, not a marine pollutant

**14.6 Special precautions for the user:** highly flammable

EMS Number : F-E,S-D

**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

Revision: 15-01

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Issue Date: 21.07.2015

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**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: +91-22- 27782555 Fax: +91-22- 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)

EINECS: European Inventory of Existing Commercial Chemical Substances

EMS: Emergency Schedule

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

IMDG: International Maritime Code for Dangerous Goods

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NOEC: no-observed effect concentration

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

TGK: Toxicity threshold concentration

### 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://apps.echa.europa.eu/registered/data/dossiers/DISS-9d9680be-0ef3-1b89-e044-00144f67d249/DISS-9d9680be-0ef3-1b89-e044-00144f67d249\\_DISS-9d9680be-0ef3-1b89-e044-00144f67d249.html](http://apps.echa.europa.eu/registered/data/dossiers/DISS-9d9680be-0ef3-1b89-e044-00144f67d249/DISS-9d9680be-0ef3-1b89-e044-00144f67d249_DISS-9d9680be-0ef3-1b89-e044-00144f67d249.html)

CDC : <http://www.cdc.gov/niosh/npg/npgd0326.html>

EPA : <http://www.epa.gov/ttnatw01/hlthef/methyl-k.html>

Chemidplus: <http://chem.sis.nlm.nih.gov/chemidplus/rn/108-10-1>

Sigma MSDS: <http://www.sigmaaldrich.com/MSDS/MSDS/DisplayMSDSPage.do?country=IN&language=en&productNumber=360511&brand=SIAL&PageToGoToURL=http%3A%2F%2Fwww.sigmaaldrich.com%2Fcatalog%2Fproduct%2F360511%3Flang%3Den>

Inchem : <http://www.inchem.org/documents/icsc/icsc/eics0511.htm>

HSDB : <http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+hsdb:@term+@rn+@rel+108-10-1>

### Data compared to the previous version altered.

- Section 1: Chemical Product and Company Identification
- Section 3: Composition and Information on Ingredients
- Section 4: First Aid Measures
- Section 5: Fire and Explosion Data
- Section 6: Accidental Release Measures
- Section 7: Handling and Storage
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