

Safety data sheet as per Commission Regulation (EU) 2015/830

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 (MIBK)
Chemical Name	4-methylpentan-2-one
CAS Number	108-10-1
EC Number	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 anti-ozonant used in tires.
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Uses identified against	Not for use other than those specified
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1.3 Details of the supplier of the safety data sheet:

Manufacturer	Prasol Chemicals Pvt. 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.
Telephone	+91-22-27782555
Telefax	+91-22-27782430
e-mail address	sales@prasolchem.com; inquiry@prasolchem.com

1.4 Emergency telephone number

Telephone	+91-22- 27782555
Language	English

◆ SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Flammable Liquid	Category 2	H225	Highly flammable liquid and vapor
Eye Irritation	Category 2	H319	Causes serious eye irritation
Acute Toxicity	Category 4	H332	Harmful if inhaled
Specific Target Organ Toxicity	Category 3	H335	May cause respiratory irritation
		EUH066	Repeated exposure may cause skin dryness or cracking

Information concerning particular hazards for human and environment: No further information

2.2 Label elements

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

Hazard pictograms



GHS02

GHS07

Signal word

Warning

Hazard statements

H225	Highly flammable liquid and vapor
H319	Causes serious eye irritation
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H335	May cause respiratory irritation
EUH066	Repeated exposure may cause skin dryness or cracking

Precautionary statements

General

P103 Read label before use.

Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed
P240	Ground and bond container and receiving equipment
P241	Use explosion - proof [electrical/ventilating/lighting/...] equipment
P242	Use non-sparking tools
P243	Take action to prevent static discharge
P261	Avoid breathing fume/gas/mist/ vapours/spray
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well -ventilated area

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Response	P280	Use protective gloves and eye protection.
	P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
	P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breath
	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Storage	P312	Call a doctor if you feel unwell.
	P337+P331	If eye irritation persists: Get medical advice.
	P370+P378	In case of fire: Use CO ₂ , dry powder, foam or water spray to extinguish.
	P403+P233	Store in a well-ventilated place. Keep container tightly closed.
	P403+P235	Store in a well-ventilated place. Keep cool.
	P405	Store locked up.
Disposal	P501	Dispose of contents and container in accordance with national regulations

2.3 Other hazards

Not a PBT, vPVB substance according to the criteria of REACH regulation

◆ SECTION 3: Composition/information on ingredients

3.1 Substances

Ingredient	CAS No.	EC No.	Concentration (%)
Methyl isobutyl ketone (MIBK)	108-10-1	203-550-1	99 min

Additional information:

Molecular Formula	C ₆ H ₁₂ O
Molecular Weight	100.16

◆ SECTION 4: First aid measures

4.1 Description of first aid measures

General information	Take off all contaminated clothing immediately.
After inhalation	If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention
After skin contact	Wash off with plenty of water immediately, seek medical advice if necessary.
After eye contact	Rinse with plenty of water immediately and seek medical advice.
After swallowing	Do not induce vomiting and seek medical advice immediately.
4.2 Most important symptoms and effects, both acute and delayed	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	Treat symptomatically and supportively.

◆ SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media CO₂, dry powder, foam or water spray
Unsuitable extinguishing media water jet

5.2 Special hazards arising from the substance or mixture

Flammable. Explosive mixtures with air may even form at room temperature. Beware of re-ignition. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Electrically ground and bond all equipment. Flammable mixtures of this product are readily ignited even by static discharge. Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may back-flash over great distances when ignited. Ignition by hot surfaces, sparks and open flames. May form toxic carbon oxides if case of fire.

5.3 Advice for firefighters

Do not expose to high temperature.
Danger of bursting and explosion.
Use fine water spray to cool endangered containers.
Move undamaged containers from immediate hazard area.



Do not allow fire water to penetrate into surface or ground water.
 Fire residuals and contaminated extinguishing water must be disposed of
 in accordance with the regulations of the local authorities.

◆ **SECTION 6: Accidental release measures**

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| 6.1 Personal precautions, protective equipment and emergency procedures | Remove persons not involved upwind.
Wear a self-contained breathing apparatus and chemical protective clothing.
Solvent-resistant protective clothing recommended. |
| 6.2 Environmental precautions | Plug leak if safely possible.
Do not allow to enter drains, surface waters, basements or pits.
When released into the environment, alert police and fire brigade. |
| 6.3 Methods and material for containment and cleaning up | In case of spills of large quantities: Dam spills and pump to remove.
Explosion protection required. Absorb leftover product with non-flammable liquid-binding material (e.g. earth, sand, vermiculite or ground sand stone) and place in closed containers for disposal. |
| 6.4 Reference to other sections | Section 8 for information on personal protection equipment.
Section 13 for disposal information |

◆ **SECTION 7: Handling and storage**

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| 7.1 Precautions for safe handling | Provide adequate ventilation, and local exhaust as needed. Provide room air exhaust at ground level. Concentrated vapours are heavier than air. Avoid the formation of aerosol. Do not breathe vapours. Use only explosion-protected equipment/instruments. Do not use air pressure.. |
| 7.2 Conditions for safe storage, including any incompatibilities | Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharge. Beware of re-ignition. Potentially explosive mixture may form within partially empty containers. Emergency cooling must be provided for in case of a fire in the vicinity. Do not weld. |
| Advice on protection against fire and explosion | Keep container dry. Keep container tightly closed in a cool, well-ventilated place. Protect from direct sunlight.
Incompatible products: Strong oxidizing agents, Ozone, Hydrogen peroxide
Packaging material: Recommended: Stainless steel, Iron
To be avoided: Rubber, Polyethylene, PVC |
| Storage | Observe prohibition against storing together! |
| Advice on common storage | 2 Flammable liquids |
| Storage class | Stable under recommended storage conditions |
| Storage stability | Solvent |
| 7.3 Specific end use(s) | |

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

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| 8.1 Control parameters | Occupational Exposure Limit TLV 50 ppm, 75 ppm short-term exposure limit |
| 8.2 Exposure controls | |
| Appropriate engineering controls | Explosion protection required. Provide good ventilation and/or an exhaust system in the work area. |
| Personal protective equipment | |
| Eye/ face protection | closed goggles, face shield |
| Skin protection | |
| Hand protection | Butyl-rubber 0.5 mm > 480 min |
| Body protection | Use solvent-resistant protective clothing.
Flame-retardant antistatic protective clothing; safety shoes |
| Respiratory protection | Respiratory equipment with suitable filter or a self-contained respiratory apparatus. |
| Thermal hazards | Flammable liquid; do not expose to heat |
| Industrial hygiene | Do not inhale vapours / aerosols. Avoid contact with skin and eyes. Remove immediately all contaminated clothing. Use disposable clothing if appropriate.
Smoking, eating and drinking should be prohibited in the application area. |



SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

◆	Appearance	Colourless liquid
	Odour	mild ketone/ camphor-like
	Odour threshold	0.1ppm
	pH	not determined (does not liberate H ions when dissolved)
	Melting point	-4.7°C
	Boiling point	117-118°C
	Flash point	23°C (Closed cup)
	Evaporation rate	1.6 (nBuAc=1)
	Flammability (solid, gas)	flammable
	Flammability limits	Lower 1.4Vol % Upper 7.5Vol %
	Vapour pressure	14.8mmHg at 20°C
	Vapour density	3.45 (air =1)
	Relative density	0.801 at 20°C
	Solubility in water	14.1% at 20°C, pH 5.4
	Partition coefficient	1.9 log Kow (n-octanol/water) at 20°C
	Ignition temperature	460°C
	Decomposition temperature	no data available
	Viscosity at 20 °C	0.545mPa.s
	Explosive properties	No explosive properties. Formation of explosive air/ vapour mixtures is possible
	Oxidizing properties	no oxidizing properties

9.2 Other information

Heat of combustion	35000kJ/kg
Heat of vaporization	364 kJ/kg

SECTION 10: Stability and reactivity

◆	10.1 Reactivity	Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may back-flash over great distances when ignited. May become electrostatically charged.
	10.2 Chemical stability	Under storage at normal ambient temperatures (-40°C to +40°C), the product is stable.
	10.3 Possibility of hazardous reactions	No known hazardous reactions if used as directed. Reacts with hydrogen peroxide to form unstable peroxides
	10.4 Conditions to avoid	Flammable. Keep away from heat and sources of ignition. Concentrated vapours are heavier than air. Forms explosive mixtures with air, also in empty, uncleaned containers.
	10.5 Incompatible materials	strong oxidizing agents, strong bases, amines, potassium tert-butoxide, aldehydes and reducing agents
	10.6 Hazardous decomposition products	Thermal decomposition products- carbon oxides, organic vapours

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity				
LD50	oral	rat	2080 mg/kg bw	not classified
LC0	inhalation	4h, rat	8.2-16.4mg/l	Category IV
LD50	Dermal	rabbit	2000 mg/kg bw	not classified
Skin irritation				
not irritating				
Serious eye irritation				
slightly irritating category 2 (rabbit)				
Respiratory or skin sensitization				
Non sensitizing				
Germ cell mutagenicity				
non mutagenic (Ames test)				
Carcinogenicity				
no indications for a carcinogenic potential				
Reproductive toxicity				
no adverse effect on reproduction (rat)				
STOT-single exposure				
Inhalation - May cause respiratory irritation. - Lungs				
STOT-repeated exposure				
NOAEL 250 mg/kg bw/d, oral				

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Aspiration hazard NOAEC 450pm, inhalation
 no data available

◆ **SECTION 12: Ecological information**

12.1 Toxicity

Aquatic toxicity

Toxicity to fish	LC50	96h	179mg/L	<i>Danio rerio</i>
Toxicity to aquatic invertebrates	EC50	48h	200mg/L	<i>Daphnia magna</i>
Toxicity to aquatic algae and cyanobacteria	TGK	8d	725mg/L	<i>Scenedesmus quadricauda</i>
Toxicity to microorganisms	TGK	16h	275mg	<i>Pseudomonas putida</i>
Long term toxicity to aquatic invertebrates	NOEC	21d	78 mg/L (reproduction)	<i>Daphnia magna</i>

12.2 Persistence and degradability

Biodegradation readily biodegradable (83% in 28days)

12.3 Bioaccumulative potential

Bioconcentration factor 0.5
 very low potential for bioaccumulation

12.4 Mobility in soil

log Koc =1.9; very low potential for geoaccumulation

12.5 Results of PBT and vPvB assessment

Not a PBT, vPvB substance according to the REACH regulation

12.6 Other adverse effects

No further information available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Observe all federal, state, and local environmental regulations.
 Contact a licensed professional waste disposal service to dispose of this material.
 Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
 Do not dispose in sewage.

◆ **SECTION 14: Transport information**

	ADR/RID	IMDG	ICAO/IATA
14.1 UN Number	1245	1245	1245
14.2 UN proper shipping name	METHYL ISOBUTYL KETONE		
14.3 Transport hazard class	3	3	3
14.4 Packaging group	II	II	II
14.5 Environmental hazards	not environmentally hazardous, not a marine pollutant		
14.6 Special precautions for the user	Flammable liquid; Flash point 23°C (closed cup)		
	EmS number	F-E,S-D	
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	See regulatory information for transport approval		

◆ **SECTION 15: Regulatory information**

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

Major accident hazard Seveso III P5a (Flammable Liquids)

International Chemical Inventory Status

USA (TSCA)	listed
Canada (DSL)	listed
Australia (AICS)	listed
Japan (MITI)	listed
Korea (KECL)	listed
Philippines (PICCS)	listed
China	listed
New Zealand	listed
Taiwan	listed

15.2 Chemical safety assessment

A Chemical Safety Assessment will be carried out at the time of REACH registration

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.

Further information:

Sections in which changes have been made since the last version are marked with a diamond ◆ in the left hand margin.

Abbreviations and acronyms in English language:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CLP	Classification for Labeling and Packaging
DSL	Domestic Substances List
EC	European Commission
EC50	Half maximal effective concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
IATA	International Air Transport Association
IBC	International Bulk Chemical
ICAO	International Civil Aviation Organization
IMDG	International Maritime Code for Dangerous Goods
KECL	Korea Existing Chemicals List
KOC	Soil adsorption coefficient
KOW	Partition Coefficient octanol-water
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
MARPOL	International Convention for the Prevention of Pollution from Ships
MITI	Ministry of International Trade and Industry
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No Observed Adverse Effect Level
PBT	Persistent, bioaccumulative and toxic substances
PICCS	Philippine Inventory of Chemicals and Chemical Substances
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
STOT	Specific target organ toxicity
TSCA	Toxic Substances Control Act
UN	United Nations
vPVB	(very) Persistent, (very) Bioaccumulative

Sources

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

ECHA	https://echa.europa.eu/registration-dossier/-/registered-dossier/14866
Chemid	https://chem.nlm.nih.gov/chemidplus/rn/108-10-1
HSDB	https://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+148
CDC	https://www.cdc.gov/niosh/ipcsneng/neng0511.html