

Safety data sheet as per Commission Regulation (EU) 2020/878

Product: Methyl isobutyl ketone



PRASOL®

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

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.

Uses identified against Not for use other than those specified

1.3 Details of the supplier of the safety data sheet:

Manufacturer Prasol Chemicals Limited
Prasol House, Plot No.A-17/2/3,
T.T.C. Industrial Area, Khairne M.I.D.C.,
Navi Mumbai - 400 710.
Maharashtra, India.
Telephone +91-22-27782555/ 61952500
Telefax +91-22-61952577
e-mail address sales@prasolchem.com; inquiry@prasolchem.com

1.4 Emergency telephone number

Telephone +91-22- 27782555/ 61952500
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	H336	May cause drowsiness or dizziness
Carcinogenicity	Category 2	H351	Suspected of causing cancer (by inhalation)
		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



GHS08

Signal word

Danger

Hazard statements

H225	Highly flammable liquid and vapor
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing cancer (by inhalation)
EUH066	Repeated exposure may cause skin dryness or cracking

Precautionary statements

General	P103	Read label before use.
Prevention	P203	Obtain, read and follow all safety instructions before use.
	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

Safety data sheet as per Commission Regulation (EU) 2020/878

Product: Methyl isobutyl ketone



PRASOL®

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 breathing.
	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P312	Call a doctor if you feel unwell.
Storage	P318	If exposed or concerned, get medical advice.
	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.
Disposal	P405	Store locked up.
	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 Annex XIII to REACH regulation

Not having endocrine disruptive properties as per criteria of Delegated Regulations (EC) 2017/2100 or (EC) 2018/605

◆ SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Name	Methyl isobutyl ketone (MIBK)
CAS Number	108-10-1
EC Number	203-550-1
Molecular Formula	C ₆ H ₁₂ O
Molecular Weight	100.16

Ingredient	Classification	Concentration (%)	SCL, M-factor, ATE
Methyl isobutyl ketone (MIBK)	Flam. Liq, 2, Eye Irrit. 2, Acute Tox. 4, STOT SE 3, Carc 2 H225, H319, H332, H335, H351 EUH066	100	inhalation: ATE = 11 mg/L (Vapours)

3.2 Mixtures not applicable

None of the ingredients present are classified as skin sensitisers 1A, respiratory sensitisers 1A, aspiration hazards and endocrine disruptors.

◆ SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General information

After inhalation

Take off all contaminated clothing immediately.

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

After inhalation

Central nervous system depression. Headache. Dizziness. Coordination disorders. Narcosis. Impaired concentration. Respiratory difficulties.

After skin contact

Dermatitis Red skin. Tingling/irritation of the skin.

After eye contact

Irritation of the eye tissue. Inflammation/damage of the eye tissue.

After swallowing

Vomiting. Nausea. Disturbances of consciousness Blood disorders Blurred vision

Chronic symptoms

Skin rash/inflammation

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

Safety data sheet as per Commission Regulation (EU) 2020/878

Product: Methyl isobutyl ketone



PRASOL®

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

6.1 Personal precautions, protective equipment and emergency procedures For non-emergency personnel

Remove persons not involved upwind.

Wear a self-contained breathing apparatus and chemical protective clothing.

Solvent-resistant protective clothing recommended.

Protective equipment: Gloves, Face shield, Protective clothing.

Emergency procedures: Mark the danger area. No naked flames. Wash contaminated clothes.

For emergency responders

Protective equipment: Equip cleanup crew with proper protection.

Emergency procedures: Ventilate area.

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

For containment: Contain released product, collect/pump into suitable containers.

Plug the leak, cut off the supply

For cleaning up: Soak up with inert absorbent material eg. sand, earth, vermiculite or powdered lime stone and keep in suitable, closed containers for disposal. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4 Reference to other sections

Section 8 for information on personal protection equipment.

Section 13 for disposal information

SECTION 7: HANDLING AND STORAGE

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

Advice on protection against fire and explosion

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.

Storage

Keep container dry. Keep container tightly closed at ambient temperature in a well-ventilated place. Protect from direct sunlight.

Packaging material

Packaging material: Recommended: Stainless steel, Iron

Incompatibility

To be avoided: Rubber, Polyethylene, PVC

Advice on common storage

Observe prohibition against storing together!

Storage class

2 Flammable liquids

Storage stability

Stable under recommended storage conditions

7.3 Specific end use(s)

Solvent

◆ SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limit TLV 50 ppm, 75 ppm short-term exposure limit

Safety data sheet as per Commission Regulation (EU) 2020/878

Product: Methyl isobutyl ketone



PRASOL®

DNEL/DNEL (Workers)

Acute - local effects, inhalation	208 mg/m ³
Long-term - systemic effects, dermal	11.8 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	83 mg/m ³
Long-term - local effects, inhalation	83 mg/m ³

DNEL/DNEL (General population)

Acute - local effects, inhalation	155.2 mg/m ³
Long-term - systemic effects, oral	4.2 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	14.7 mg/m ³
Long-term - systemic effects, dermal	4.2 mg/kg bodyweight/day
Long-term - local effects, inhalation	14.7 mg/m ³

PNEC (Water)

PNEC aqua (freshwater)	1.5 mg/l
PNEC aqua (marine water)	0.06 mg/l

PNEC (Sediment)

PNEC sediment (freshwater)	8.27 mg/kg dwt
PNEC sediment (marine water)	0.83 mg/kg dwt

PNEC (Soil)

PNEC soil	1.3 mg/kg dwt
-----------	---------------

PNEC (STP)

PNEC sewage treatment plant	27.5 mg/l
-----------------------------	-----------

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	0.1 ppm
pH	not determined (does not liberate H ions when dissolved)
Melting point	-84°C
Boiling point	117-118°C
Flash point	23°C (Closed cup) (Flammable liquid Category 2; H225)
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	0.545 mPa.s
Particle characteristics	Not applicable (substance is a liquid)

9.2 Other information

Safety data sheet as per Commission Regulation (EU) 2020/878

Product: Methyl isobutyl ketone



PRASOL®

Explosive properties	No explosive properties based on chemical structure
Oxidizing properties	no oxidizing properties based on chemical structure
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 temperatures (-40°C to +40°C depending on the geographical location), 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 4, H332
LD50 Dermal rabbit	2000 mg/kg bw not classified
Skin irritation	not irritating
Serious eye irritation	slightly irritating, (rabbit) Category 2, H319
Respiratory or skin sensitization	Non sensitizing
Germ cell mutagenicity	non mutagenic (Ames test)
Carcinogenicity	NOAEC 1 840 mg/m³ Carcinogen Category 2 H351
Reproductive toxicity	no adverse effect on reproduction (rat)
STOT-single exposure	NOAEC 1 843 mg/m³ Inhalation May cause drowsiness or dizziness. Cat. 3, H336
STOT-repeated exposure	NOAEL 250 mg/kg bw/d, oral
	NOAEC 450pm, inhalation
Aspiration hazard	no data available
11.2 Information on other hazards	
Endocrine disrupting properties	No endocrine disrupting properties
Other information	No further information

◆ 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 <i>Daphnia magna</i> (reproduction)
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 Endocrine disrupting properties	No endocrine disrupting properties
12.7 Other adverse effects	No further information available

Safety data sheet as per Commission Regulation (EU) 2020/878

Product: Methyl isobutyl ketone



PRASOL®

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods	Observe all national, state and local environmental regulations.
Product disposal	Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Packaging disposal	Clean container with water. Recover waste water for processing later. Destroy packaging by incineration at an approved waste disposal site.
Sewage disposal	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,b,c (Flammable Liquids)
International Chemical Inventory Status	
USA (TSCA)	Listed (Tracking No. 24851)
Canada (DSL)	listed
Australia (AICS)	listed
Japan (MITI)	Listed (existing Chemical Substances)
Korea (KECL)	Listed (KE No. 24725)
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 ◆

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

Abbreviations and acronyms:

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

Safety data sheet as per Commission Regulation (EU) 2020/878

Product: Methyl isobutyl ketone



PRASOL®

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

Key literature references and sources for data

Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning 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>

Disclaimer: Information herein is given in good faith. Prasol Chemicals Limited makes no representations or warranties as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving the same will make their own determination as to its suitability for their purpose prior to use. Prasol Chemicals Limited shall not be responsible for damages of any nature whatsoever resulting from the use or reliance upon this information. The data provided are based on samples tested and are not guaranteed for all samples or applications. Such data are intended as guides only. No representations or warranties for a particular purpose or any other nature are made with respect to this information or the product.

End of safety data sheet