

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

Product: Di-isobutyl ketone



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

1.1 Product identifier

Trade name	Di-isobutyl ketone (DIBK)
Chemical Name	2,6-Dimethyl-4-heptanone
CAS Number	108-83-8
EC Number	203-620-1

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

Relevant identified uses	Solvent for nitrocellulose, crepe rubber, and vinylite; intermediate in the synthesis of inhibitors, pharmaceuticals, dyes, and insecticides
Uses identified against	Not for use other than those specified

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 3	H226	Flammable liquid and vapour
Specific Target Organ Toxicity	Category 3	H335	May cause respiratory irritation

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

H226

Flammable liquid and vapour

H335

May cause respiratory irritation

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

P280

Use protective gloves and eye protection.

Response

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

P312

Call a doctor if you feel unwell.

P337+P331

If eye irritation persists: Get medical advice.

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Storage	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 REACH regulation

SECTION 3: Composition/information on ingredients

3.1 Substances

Ingredient	CAS No.	EC No.	Concentration (%)
2,6-dimethyl-4-heptanone	108-83-8	203-620-1	70 min
4,6-dimethyl-2-heptanone	19549-80-5	243-148-3	30 max

Additional information:

Molecular Formula	C ₉ H ₁₈ O
Molecular Weight	142.24

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	General: Burning eyes and skin. Fatigue, nausea, unconsciousness. May cause respiratory irritation
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	CO ₂ , dry powder, foam or water spray
Unsuitable extinguishing media	water jet
5.2 Special hazards arising from the substance or mixture	May form toxic carbon oxides if case of fire. Class 3 Flammable liquid Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur.
5.3 Advice for firefighters	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	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)



6.4 Reference to other sections and place in closed containers for disposal.
 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 in a cool, well-ventilated place. Protect from direct sunlight.

Advice on common storage Steel, stainless steel are stable container materials.
 Observe prohibition against storing together!

Storage class 3 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 Limits TWA 25 ppm (150 mg/m³)

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 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 Peppermint-like
 Odour threshold 0.1 ppm
 pH no data available
 Melting point -46°C
 Boiling point 168°C
 Flash point 49°C (Closed cup)
 Evaporation rate 0.2 (nBuAc=1)
 Flammability (solid, gas) flammable
 Flammability limits **Lower** 0.8 Vol %
 Upper 6.2 Vol %
 Vapour pressure 0.23 kPa at 20°C
 Vapour density 4.9 (air =1)
 Relative density 0.81 at 20°C
 Solubility in water 430mg/L at 20°C (moderately soluble)
 Partition coefficient 3.71 at 20°C
 Ignition temperature 345°C
 Decomposition temperature no data available

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Viscosity	1.05 mPa s (dynamic) at 20°C
Explosive properties	No explosive properties.
Oxidizing properties	No oxidizing properties
9.2 Other information	
Heat of Combustion	37500kJ/kg
Heat of Vaporization	277kJ/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
- 10.4 Conditions to avoid** Flammable. Concentrated vapours are heavier than air. Forms explosive mixtures with air, also in empty, un-cleaned containers.
- 10.5 Incompatible materials** Strong acid, strong oxidizing agents
- 10.6 Hazardous decomposition products** Thermal decomposition products- carbon oxides

SECTION 11: Toxicological information

- ◆ **11.1 Information on toxicological effects**
 - Acute toxicity**

LD50	oral	rat	>2000mg/kg bw	not classified
LC50	Dermal	rabbit	>2000mg/kg bw	not classified
LD50	inhalation	rat	14500mg/m ³	not classified
 - Skin irritation** not irritating
 - Serious eye irritation** not irritating
 - Respiratory or skin sensitization** not 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** causes respiratory irritation
 - STOT-repeated exposure** NOAEL 2000 mg/kg bw, rat
 - Aspiration hazard** may be harmful if swallowed and enters airways

SECTION 12: Ecological information

- ◆ **12.1 Toxicity**
 - Aquatic toxicity**

Toxicity to fish	LC50	96h	30mg/L	<i>Oncorhynchus mykiss</i>
Toxicity to aquatic invertebrates	EC50	48h	37.2mg/L	<i>Daphnia magna</i>
Toxicity to aquatic algae and cyanobacteria	EC50	72h	45.9mg/L	<i>Pseudokirchneriella subcapitata</i>
Toxicity to microorganisms	LC50	16h	255mg/L	freshwater microorganisms
 - 12.2 Persistence and degradability**
 - Biodegradation** readily biodegradable (88% in 20days)
 - 12.3 Bioaccumulative potential** Bioconcentration factor between 130L/Kg
very low potential for bioaccumulation
 - 12.4 Mobility in soil** log Pow = 3.71; 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.

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SECTION 14: Transport information

	ADR/RID	IMDG	ICAO/IATA
14.1 UN Number	1157	1157	1157
14.2 UN proper shipping name	DIISOBUTYL KETONE		
14.3 Transport hazard class	3	3	3
14.4 Packaging group	III	III	III
14.5 Environmental hazards	not environmentally hazardous not a marine pollutant based on available data		
14.6 Special precautions for the user	Flammable liquid; Flash point 49°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:

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
ErC50	EC50 in terms of reduction of growth rate
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
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

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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/2026>

CDC <https://www.cdc.gov/niosh/npg/npgd0216.html>

HSDB <https://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+527>

Chemidplus <https://chem.nlm.nih.gov/chemidplus/rn/108-83-8>
