



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

1.1 Product identifier

Trade name: Di-isobutyl ketone/ 2,6-Dimethyl-4-heptanone

CAS No.: 108-83-8 (refer Section 3 for details)

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

Sector of use: SU 3 industrial uses

Environmental release category: Manufacture (ERC1) and formulations (ERC2)

Uses identified against: Food additive, medicinal products

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. Dhaival 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

Flame



GHS07

Exclamation

Flam. Liquid 3 H226 Flammable liquid and vapor

STOT SE 3H335 May cause respiratory irritation

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



Xi; Irritant

R10 - Flammable

R37 - Irritating to respiratory system

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

Flame



GHS07

Exclamation

Signal word Warning

Hazard-determining components of labeling: Void

Hazard statements

Flam. Liquid 3 H226 Flammable liquid and vapor

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Product: Di-isobutyl ketone



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STOT SE 3H335 May cause respiratory irritation

Precautionary statements

- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P261 Avoid breathing vapours
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.

2.3 Other hazards

Results of PBT and vPvB assessment: Not applicable

SECTION 3: Composition/information on ingredients

Chemical characterization: DIBK is a mixture of isomers in following concentration

CAS No.	Description	Molecular formula	Molecular weight	Concentration (%)
108-83-8	2,6-dimethyl-4-heptanone	C ₉ H ₁₈ O	142.24	60-70
19549-80-5	4,6-dimethyl-2-heptanone	C ₉ H ₁₈ O	142.24	30-35
108-82-7	2,6-dimethyl-4-heptanol	C ₉ H ₂₀ O	144.26	<2

SECTION 4: First aid measures

4.1 General information: If danger of loss of consciousness, place patient in recovery position and transport accordingly. Apply artificial respiration if necessary. Remove contaminated clothing. First aid personnel should pay attention to their own safety..

After inhalation:

If breathed in, 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. Consult a physician.

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

After swallowing: Rinse mouth with water. Consult a physician.

Information for doctor: If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. Maintain adequate ventilation and oxygenation of the patient. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

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

SECTION 5: Firefighting measures

5.1 Suitable extinguishing agents:

Water, water spray, dry extinguishing media, alcohol-resistant foam, carbon dioxide

5.2 Special hazards arising from the substance or mixture May form Carbon oxides

5.3 Protective equipment: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire-fighting clothing (includes fire-fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance..

Additional information: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Do not use direct water stream

SECTION 6: Accidental release measures

6.1 Person-related safety precautions:

Use personal protective equipment. 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

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concentrations. Vapors can accumulate in low areas.

6.2 Measures for environmental protection:

Material may float on water and any runoff may create an explosion or fire hazard if ignited. Prevent further leakage or spillage if safe to do so. Do not allow to enter sewers/ surface or ground water.

6.3 Measures for cleaning/collecting:

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 (see section 13). Keep in suitable, closed containers for disposal.

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 contact with skin and eyes. Avoid inhalation of vapor or mist.

Information about fire - and explosion protection: Keep ignition sources away. No smoking. Take measures to prevent the buildup of electrostatic charge.

7.2 Conditions for safe storage, including any incompatibilities:

Store in cool place. 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:

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:

Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

Protection of hands: Protective gloves

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it

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 fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)

Body protection:

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Complete suit protecting against chemicals. 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

Appearance	: Colorless liquid
Odour	: mild pleasant
Odour threshold	: 0.660 mg/cu m
pH	: no data available
Melting point/Melting range	: -45.98°C (at 1011.7 hPa)
Boiling point/Boiling range	: 168-170°C
Flash point	: 49°C (closed cup)
Evaporation rate	: 0.2 (butyl acetate=1)
Flammability	: flammable
Upper/lower flammability or explosive limits:	
Lower:	0.8vol%
Upper:	6.2 vol%
Vapour pressure at 20°C	: 2.3hPa
Vapour density	: 4.91 (Air = 1)
Density at 25°C	: 0.81g/cm ³
Solubility in / Miscibility with water	: 430mg/L moderately soluble
Surface tension at 22°C	: 22.8 mN/m
Partition coefficient (n-octanol/water) at 23°C:	3.71 log POW
Auto-ignition temperature	: 345°C at 101.3 kPa
Decomposition temperature	: no data available
Viscosity	: 1.05 mPa s (dynamic)at 20°C
Explosive properties	: no data available
Oxidising properties	: no data available
9.2 Other information	
Critical temperature:	549.69 K; critical pressure: 3.37 MPa

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 Exposure to elevated temperatures can cause product to decompose.

10.5 Incompatible materials: Strong acid, strong oxidizing agents

10.6 Hazardous decomposition products: No dangerous decomposition products known

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

LD50	Oral	rat	>2000 mg/Kg
LC50	Inhalation	rat	>14500 mg/L
LD50	Dermal	rat	> 200 mg/kg

Skin corrosion/irritation: mildly irritating (rabbit), (prolonged skin contact can aggravate dermatitis)

Serious eye damage/irritation: mildly irritating (rabbit)

Respiratory or skin sensitization: non-sensitizing (guinea pig)

Germ cell mutagenicity: non genotoxic

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: no data available

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STOT-single exposure: May cause respiratory irritation

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:

LC50	96h	30mg/l (<i>Oncorhynchus mykiss</i>)
EC50	48h	37.2 mg/L (<i>Daphnia magna</i>)
EC50	72h	46.9 mg/L (freshwater algae)
IC50	16h	255 mg/L (aerobic microorganisms)

12.2 Persistence and degradability

Biodegradation

Readily biodegradable

12.3 Bio accumulative potential low potential for bioaccumulation.

12.4 Mobility in soil

Calculated Koc of 2.07

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

Waste treatment methods

This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 91/689/EEC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water

Product: This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging: Dispose of as unused product.

SECTION 14: Transport information

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

14.1 UN/ID Number: 1157

14.2 UN proper shipping name: DIISOBUTYL KETONE

14.3 Transport hazard class: 3

14.4 Packaging group: III

14.5 Environmental hazards: not a marine pollutant

14.6 Special precautions for the user: no data available

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

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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)

EC50: Half Maximal Effective concentration

EINECS: European Inventory of Existing Commercial Chemical Substances

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

IATA: International Air Transport Association

IBC Code: International Bulk Chemical Code

IMDG: International Maritime Code for Dangerous Goods

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Marpol 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978

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

TTC: Toxic 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-9c82f16d-2a92-15e8-e044-00144f67d249/DISS-9c82f16d-2a92-15e8-e044-00144f67d249_DISS-9c82f16d-2a92-15e8-e044-00144f67d249.html

•HSDB: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+hsdb:@term+@rn+@rel+108-83-8>

•chemidpluslite: <http://chem.sis.nlm.nih.gov/chemidplus/rn/108-83-8>

•EPA: <http://actor.epa.gov/actor/GenericChemicalPdfServlet;jsessionid=3262B0EA5D1947396DFD23EC1462559C?casrn=108-83-8>

•Sigma-Aldrich MSDS:

<http://www.sigmaaldrich.com/MSDS/MSDS/DisplayMSDSPage.do?country=IN&language=en&productNumber=W353701&brand=ALDRICH&PageToGoToURL=http%3A%2F%2Fwww.sigmaaldrich.com%2Fcatalog%2Fproduct%2Faldrich%2Fw353701%3Flang%3Den>

Data compared to the previous version altered.

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•Section 3: Composition and Information on Ingredients

•Section 4: First Aid Measures

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