

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

Product: 3,3,5-trimethylcyclohexanone



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

1.1 Product identifier

Trade name	3,3,5-trimethylcyclohexanone (TMCNONE)
Chemical Name	3,3,5-trimethylcyclohexan-1-one
CAS Number	873-94-9
EC Number	212-855-9
Registration number (REACH)	01-2120058794-45-0000

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

Relevant identified uses Use as monomer for the manufacture of polymers. Use in manufacture of bulk, large scale chemicals (including petroleum products)

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)

Eye Irritation	Category 2	H319	Causes serious eye irritation
STOT SE	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



GHS07

Signal word Warning

Hazard statements H319 Causes serious eye irritation
H335 May cause respiratory irritation

Precautionary statements

General	P103	Read label before use.
Prevention	P261	Avoid breathing gas, mist or vapours.
	P264	Wash hands thoroughly after handling.
	P271	Use only outdoors or in a well-ventilated area.
	P280	Use protective gloves and eye protection.
Response	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.
	P337+P313	If eye irritation persists: Get medical attention
Storage	P403+P233	Store in a well-ventilated area. Keep container tightly closed.
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 (%)
3,3,5-trimethylcyclohexanone	873-94-9	212-855-9	99 min

Additional information:

Molecular Formula C₉H₁₆O
Molecular Weight 140.24

◆ **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 mild soap and 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

Headache, dizziness, nausea, eye 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

CO₂, 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 burning.
Closed container may rupture if strongly heated.
Vapours can travel to a source of ignition and flash back.
Explosive mixtures may occur at temperatures at or above the flashpoint.
Cool closed containers exposed to fire with water spray.
Wear self-contained breathing apparatus.

5.3 Advice for firefighters

◆ **SECTION 6: Accidental release measures**

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.
Avoid breathing vapours, mist or gas.
Ensure adequate ventilation

6.2 Environmental precautions

Do not allow to enter sewers, surface or ground water.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste.
Keep in suitable, closed containers for disposal.
Suitable binder: sand

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

If possible, use material transfer, metering and blending plants that are closed.
Avoid contact with skin and eyes.
Avoid inhalation of vapour or mist.

7.2 Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion
Storage

Follow normal measures for preventive fire protection.
Combustible liquid
Store in a cool place.
Recommended storage temperature: -40 to +40°C.
Keep container tightly closed in a dry and well-ventilated place.
Residual vapours might explode on ignition; do not apply heat, cut, drill and grind or weld on or near the container.
Mechanical exhaust required.

Advice on common storage
Storage stability

Observe prohibition against storing together!
Stable under recommended storage conditions

7.3 Specific end use(s)

No further relevant information available



SECTION 8: Exposure controls/personal protection

- ◆ **8.1 Control parameters**
Occupational Exposure Limit no limits have been determined
- ◆ **8.2 Exposure controls**
Appropriate engineering controls If possible, use material transfer, metering and blending plants that are closed.
- Personal protective equipment**
 - Eye/ face protection** closed goggles, face shield
 - Skin protection**
 - Hand protection**

Type of material	Thickness	Breakthrough time
Butyl-rubber	0.5 mm	> 480 min
Polychloroprene (PCP)	0.5 mm	110 min
 - Body protection** Boots, body suit
 - Respiratory protection** Respiratory equipment with suitable filter or a self-contained respiratory apparatus.
 - Thermal hazards** Combustible liquid; possibility of decomposition on excess heating
 - 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	menthol-like
Odour threshold	no data available
pH	no data available
Melting point	-11.7°C
Boiling point	188-191°C
Flash point	66°C (Closed cup)
Evaporation rate	no data available
Flammability (solid, gas)	not applicable (product is a liquid)
Flammability limits	no data available
Vapour pressure	0.6hPa at 20°C
Vapour density	no data available
Relative density	0.8888 at 40°C
Solubility in water	3.16g/l at 20°C
Partition coefficient	2.6 log Kow (n-octanol/water) at 25°C
Ignition temperature	425°C
Decomposition temperature	no data available
Viscosity at 20°C	2.54mPa.s
Explosive properties	no explosive properties however containers may explode in fire
Oxidizing properties	no oxidizing properties
- ◆ **9.2 Other information** no further data

SECTION 10: Stability and reactivity

- ◆ **10.1 Reactivity** No hazardous reaction when handled and stored according to provisions.
- ◆ **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** Avoid excessive heat and sources of ignition
- 10.5 Incompatible materials** None known
- 10.6 Hazardous decomposition products** Thermal decomposition products- carbon oxides

SECTION 11: Toxicological information

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

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LD50	oral	rat	>2000 mg/kg bw	harmful, Category 5
LC50	inhalation	rat	14.2mg/l	harmful, Category 3
LC50	Dermal	rabbit	>2000ml/kg bw	harmful, Category 5
Skin irritation		irritating		
Serious eye irritation		irritating		
Respiratory or skin sensitization		No sensitizing effects known		
Germ cell mutagenicity		non mutagenic (Ames test)		
Carcinogenicity		non-carcinogenic		
Reproductive toxicity		no adverse effect on reproduction (rat)		
STOT-single exposure		irritating to eye and skin		
STOT-repeated exposure				

◆ **SECTION 12: Ecological information**

12.1 Toxicity

Aquatic toxicity

Toxicity to fish	LC50	96h	>100mg/L	<i>Danio rerio</i>
Toxicity to aquatic invertebrates	EC50	48h	180mg/L	<i>Daphnia magna</i>
Toxicity to aquatic algae and cyanobacteria	ErC50	72h	100mg/L	<i>Desmodesmus subspicatus</i>
Toxicity to microorganisms	EC50	3h	755mg/L	activated sludge

12.2 Persistence and degradability

Biodegradation

not readily biodegradable (59% in 28days)

12.3 Bioaccumulative potential

very low potential for bioaccumulation

12.4 Mobility in soil

log Koc = 2.6; low possibility for sorption in soil

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	-	-	-
14.2 UN proper shipping name	not hazardous for transport		
14.3 Transport hazard class	-	-	-
14.4 Packaging group	-	-	-
14.5 Environmental hazards	not environmentally hazardous, not a marine pollutant		
14.6 Special precautions for the user	Combustible liquid; Flash point 66°C (closed cup)		
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 no

International Chemical Inventory Status

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

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New Zealand	listed
Taiwan	listed
15.2 Chemical safety assessment	Chemical Safety Assessment has been carried out.

◆ 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
ErC50	EC50 in terms of reduction of growth rate
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
NOEC	No Observed 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
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/5246/1>

Chemid <https://chem.nlm.nih.gov/chemidplus/rn/873-94-9>