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

1.1 Product identifier

Trade name	**3,3,5-trimethylcyclohexanol (TMCNOL)**
Chemical Name	3,3,5-trimethylcyclohexan-1-ol
CAS Number	116-02-9
EC Number	204-122-7
Pre-Registration number (REACH)	17-2119485607-26-000

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

Relevant identified uses	In fragrances; in preparation of derivatives like acetates and salicylate for cosmetic applications; in preparation of pharmaceuticals
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)

Skin Irritation	Category 2	H315	Causes skin irritation
Eye Irritation	Category 2	H319	Causes serious eye irritation
Aquatic Chronic	Category 3	H412	Harmful to aquatic life with long lasting effects

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	H315	Causes skin irritation
	H319	Causes serious eye irritation
	H412	Harmful to aquatic life with long lasting effects

Precautionary statements

General	P103	Read label before use.
Prevention	P264	Wash hands thoroughly after handling.
	P273	Avoid release to the environment.
	P280	Use protective gloves and eye protection.
Response	P302+P352	IF ON SKIN: Wash with plenty of water.
	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
	P321	Specific treatment: wash with plenty of water.
	P332+P313	If skin irritation persists: Get medical attention
	P337+P313	If eye irritation persists: Get medical attention
	P362+P364	Take off contaminated clothing and wash it before reuse.
Storage	P403	Store in a well-ventilated area.
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-trimethylcyclohexanol	116-02-9	204-122-7	98.5 min

Additional information:

Molecular Formula $C_9H_{18}O$
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 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 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 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.

5.3 Advice for firefighters Cool closed containers exposed to fire with water spray.
Wear self-contained breathing apparatus.

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 Follow normal measures for preventive fire protection.

Storage Store in a cool place.
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 Observe prohibition against storing together!

	Storage stability	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

	Type of material	Thickness	Breakthrough time
Hand protection	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 or crystalline solid
Odour	menthol-like
Odour threshold	no data available
pH	no data available
Melting point	26°C
Boiling point	197°C
Flash point	88°C (Closed cup)
Evaporation rate	no data available
Flammability (solid, gas)	not applicable (product is a liquid)
Flammability limits	no data available
Vapour pressure	0.1hPa at 20°C
Vapour density	4.91(air =1)
Relative density	0.878 at 40°C
Solubility in water	1.45g/l at 20°C
Partition coefficient	2.86 log Kow (n-octanol/water) at 23°C
Ignition temperature	no data available
Decomposition temperature	no data available
Viscosity at 20°C	no data available
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

LD50	oral	rat	3250 mg/kg bw	harmful, Category 5
LC50	inhalation	rat	no data available	
LD50	Dermal	rabbit	2.8ml/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	no data available			
Toxicity to aquatic invertebrates	EC50	48h	94.1mg/L	*Daphnia magna*
Toxicity to aquatic algae and cyanobacteria	EC50	72h	32.2mg/L	*Desmodesmus subspicatus*
Toxicity to microorganisms	no data available			
Long term toxicity to aquatic invertebrates	NOEC	21d	25mg/L	*Daphnia magna*

12.2 Persistence and degradability	
Biodegradation	not readily biodegradable (1.45% in 28days)
12.3 Bioaccumulative potential	very low potential for bioaccumulation
12.4 Mobility in soil	log Koc = 2.86; 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 88°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
	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
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/5161/1
Chemid	https://chem.nlm.nih.gov/chemidplus/rn/116-02-9
HSDB	https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+hsdb:@term+@rn+@rel+116-02-9