

TERPINEOL (MIXED ISOMERS)

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

TERPINEOL (MIXED ISOMERS)
Synonyms: p-Menth-1-en-8-ol; Terpinol; Pine Oil (component)
CAS: 8000-41-7

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Fragrance and flavour raw material, solvent, froth-flotation/mineral-processing agent, disinfectant/cleaning formulation component, soap perfumery. For industrial user only.
Uses advised against: All uses not specified in this section or in section 7.3.

1.3 Supplier's details:

SURAJ CHEMICALS
No 92, Govindappa Naicken Street, Shiva Complex, Chennai – 600001, Tamil Nadu, India
Tel: +91 - 7092722822, +91 - 9840284032 / +91 - 44 - 25393652, 42130281
Email: sales@surajchemicals.com | Website: www.surajchemicals.com
GST No: 33ACEPV8190L1ZZ

1.4 Emergency phone number:

Emergency Contact No: +91 - 7092722822, +91 - 9840284032

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Skin Irrit. 2	Skin irritation, Category 2, H315
Eye Irrit. 2	Eye irritation, Category 2, H319
Skin Sens. 1	Skin sensitisation, Category 1, H317
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic hazard, Category 3, H412

Flash point (closed cup, typical ≥90°C) is above the GHS Category 3 flammable-liquid threshold of 60°C; the product is therefore not assigned to a flammable-liquid category under GHS, though it should be regarded as combustible.

2.2 GHS label elements, including precautionary statements:

GHS: Warning

Hazard statements:

Skin Irrit. 2: H315 – Causes skin irritation.
Eye Irrit. 2: H319 – Causes serious eye irritation.
Skin Sens. 1: H317 – May cause an allergic skin reaction.
Aquatic Chronic 3: H412 – Harmful to aquatic life with long lasting effects.

Precautionary statements:

P264: Wash contaminated skin thoroughly after handling.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves/eye protection.
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.
P333+P313: If skin irritation or rash occurs, get medical advice/attention.
P337+P313: If eye irritation persists, get medical advice/attention.
P501: Dispose of contents/container in accordance with local regulations.

2.3 Other hazards which do not result in classification:

May be combustible at elevated temperature. Does not meet the criteria for PBT or vPvB.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: Monocyclic terpene alcohol – mixture of alpha-, beta- and gamma-terpineol isomers (C10H18O)
In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 8000-41-7	Terpineol (mixed isomers) — Skin Irrit. 2: H315; Eye Irrit. 2: H319; Skin Sens. 1: H317; Aquatic Chronic 3: H412 – Warning	≥95%

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

3.2 Mixtures:

Non-applicable – single substance product (mixed isomers of one chemical entity).

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:

Request medical assistance if symptoms occur, showing the SDS of this product.

By inhalation:

Remove the person affected from the area of exposure to fresh air and keep at rest.

By skin contact:

Remove contaminated clothing. Wash skin thoroughly with soap and water. If an allergic skin reaction develops, seek medical attention.

By eye contact:
Rinse immediately with plenty of water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek medical advice.

By ingestion/aspiration:
Do not induce vomiting. Rinse mouth with water. Seek medical advice.

4.2 Most important symptoms/effects, acute and delayed:
May cause skin and eye irritation; may cause allergic skin reaction on repeated exposure. See sections 2 and 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:
Not relevant

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:
Suitable: Dry chemical powder (ABC), carbon dioxide, foam, water spray.
Unsuitable: High-pressure water jet (may spread the liquid).

5.2 Specific hazards arising from the chemical:
Combustible liquid at elevated temperature. Combustion produces oxides of carbon.

5.3 Special protective actions for fire-fighters:
Evacuate non-essential personnel. Wear self-contained breathing apparatus and full protective clothing in enclosed spaces. Cool exposed containers with water spray.

Additional provisions:
Contain fire-fighting water run-off; avoid discharge to drains/watercourses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:
For non-emergency personnel:
Avoid skin/eye contact. Ensure adequate ventilation. Use PPE as per section 8.

For emergency responders:
Wear protective equipment as per section 8. Keep unprotected persons away.

6.2 Environmental precautions:
Prevent spillage from entering drains, watercourses or soil.

6.3 Methods and materials for containment and cleaning up:
Contain spillage with inert absorbent material (sand, earth, vermiculite). Collect in suitable labelled containers for disposal.

6.4 Reference to other sections:
See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:
A. General precautions for safe use:
Avoid skin and eye contact. Avoid inhalation of vapour/mist.

B. Technical recommendations for the prevention of fires and explosions:
Keep away from direct heat and open flame during heated processing.

C. Technical recommendations on general occupational hygiene:
Do not eat, drink or smoke during handling. Wash hands thoroughly after handling.

D. Technical recommendations to prevent environmental risks:
Avoid release to drains and watercourses.

7.2 Conditions for safe storage, including any incompatibilities:
A. Specific storage requirements:

Storage Temp.	Below 30°C, away from direct sunlight
Maximum time	12 Months in original closed container

B. General conditions for storage:
Store in a cool, dry, well-ventilated place away from strong oxidising agents. Keep container tightly closed.

7.3 Specific end use(s):
Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:
No specific statutory occupational exposure limit has been established for terpineol under the Factories Act, 1948, as amended.

Identification	Occupational Exposure Limit Type	Value
Terpineol CAS: 8000-41-7	Time Weighted average concentration (8 hrs)	Typical value — refer to current specification sheet

8.2 Appropriate engineering controls:
General ventilation is normally adequate; use local exhaust ventilation where mist/vapour is generated.

B. Respiratory protection:
Not normally required with adequate ventilation. Use organic vapour mask if ventilation is insufficient.

C. Specific protection for the hands:
Chemical-resistant gloves (nitrile). Replace at any sign of damage.

D. Eye and face protection:
Safety glasses with side shields or chemical goggles.

E. Bodily protection:
Standard industrial workwear; apron for bulk handling.

F. Additional emergency measures:
Emergency shower and eyewash stations should be available.

Environmental exposure controls:
Avoid environmental spillage of both the product and its container.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	
Physical state at 20°C	Liquid (may be viscous/semi-solid in cold conditions)
Appearance	Clear, viscous liquid
Color	Colourless to pale yellow
Odor	Lilac / floral, pine-like
Odour threshold	Not established
Volatility	
Boiling point at atmospheric pressure	217 – 224°C
Vapour pressure at 20°C	<0.1 mmHg
Evaporation rate at 20°C	Low
Product Description	
Density / Relative density at 20°C	0.93 – 0.94 g/cm³
Solubility in water at 20°C	Slightly soluble (~1 g/L); miscible with alcohols, ethers
Partition coefficient n-octanol/water	~2.9 (log Pow, typical)
Melting point/freezing point	–10 to 35°C depending on isomer ratio
Flammability	
Flash Point	90 – 100°C (closed cup, typical)
Flammability (solid, gas)	Not applicable (liquid); not classified as flammable liquid
Autoignition temperature	Typical value — refer to current specification sheet
Lower / Upper flammability limit	Not established
Particle Characteristics	
Median equivalent diameter	Non-applicable (liquid)

9.2 Other information:

Explosive properties	Not relevant
Oxidising properties	Not relevant
Corrosive to metals	Non-corrosive
Heat of combustion	Typical value — refer to current specification sheet

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

May react with strong oxidising agents. May slowly oxidise/dehydrate on prolonged exposure to air and light.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions are not expected.

10.4 Conditions to avoid:

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Avoid prolonged exposure	Avoid temperatures near flash point	Avoid prolonged direct exposure	No special measures

10.5 Incompatible materials:

Strong Oxidisers	Strong Acids
Avoid contact	Avoid contact

10.6 Hazardous decomposition products:

Oxides of carbon on combustion.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

In case of exposure that is repetitive, prolonged, or at concentrations higher than recommended, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect):

Low acute oral toxicity; may cause gastrointestinal discomfort if swallowed in quantity.

B. Inhalation (acute effect):

Vapour/mist may cause mild irritation of the respiratory tract.

C. Contact with skin and eyes (acute effect):

Causes skin irritation (H315) and serious eye irritation (H319); repeated contact may cause allergic skin sensitisation (H317).

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):

Classification criteria are not met based on available data. IARC: Not classified.

E. Sensitizing effects:

Classified as Skin Sens. 1 (H317) based on established data for this substance.

F/G. Specific target organ toxicity (STOT):

Classification criteria are not met based on available data.

H. Aspiration hazard:

Classification criteria are not met based on available data.

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
Terpineol CAS: 8000-41-7	LD50 oral: ~2900 mg/kg	Rat
	LD50 dermal: >5000 mg/kg	Rabbit

SECTION 12: ECOLOGICAL INFORMATION

Harmful to aquatic life with long lasting effects.

12.1 Toxicity:

Acute Toxicity	Species	Genus
LC50: 10 – 50 mg/L (96h), typical value	Typical value — refer to current specification sheet	Fish
EC50: 10 – 50 mg/L (48h), typical value	Typical value — refer to current specification sheet	Crustacean

12.2 Persistence and degradability:

Expected to be readily biodegradable under aerobic conditions.

12.3 Bioaccumulative potential:

Moderate log Pow; not established as bioaccumulative per regulatory criteria.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Moderate	Low to moderate	Low mobility	Low mobility

12.5 Results of PBT and vPvB assessment:

Does not meet PBT/vPvB criteria based on available data.

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Dispose of via an authorised industrial waste contractor in accordance with local regulations. Do not discharge to drains or watercourses.

Refer to national and local regulations on waste management.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023):

14.1 UN number	Not assigned – non-hazardous for transport
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	Non-applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22):

14.1 UN number	Not assigned – non-hazardous for transport
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	Non-applicable
14.5 Marine pollutant	No
14.6 Special precautions for user	Non-applicable
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024):

14.1 UN number	Not assigned – non-hazardous for transport
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	Non-applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	Non-applicable
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3:

H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H412: Harmful to aquatic life with long lasting effects.

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

The United Nations Economic Commission for Europe (UNECE); publicly available GHS classification and physical-constant references for CAS 8000-41-7.

Abbreviations and acronyms:

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-POW: Octanol-water partition coefficient | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET