

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 02/25/2019

Version 1.4

SECTION 1. Identification**Product identifier**

Product number	814759
Product name	Terpineol (mixture of isomers) for synthesis
CAS-No.	8000-41-7

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

Identified uses	Chemical for synthesis
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 400 Summit Drive Burlington Massachusetts 01803 United States of America General Inquiries: +1 800-645-5476 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification**GHS Classification**

Flammable liquid, Category 4, H227
Skin irritation, Category 2, H315
Eye irritation, Category 2A, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



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Signal Word

Warning

Hazard Statements

H227 Combustible liquid.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and 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 (see supplemental first aid instructions on this label).
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235 Store in a well-ventilated place. Keep cool.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature	Mixture of isomers.
Formula	C ₁₀ H ₁₈ O (Hill)
Molar mass	154.25 g/mol

Hazardous ingredients

Chemical name (Concentration)

CAS-No.

Terpineol (>= 90 % - <= 100 %)

8000-41-7

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

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Inhalation

After inhalation: fresh air.

Skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

Eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Foam, Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Combustible.

Forms explosive mixtures with air on intense heating.

Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapors possible in the event of fire.

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Avoid inhalation of vapors/aerosols or dusts.

Advice for emergency responders:

Protective equipment see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Depending on the state of matter, take up with suitable equipment or with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities

Tightly closed. Dry.

Store below +30°C (+86°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Contains no substances with occupational exposure limit values.

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

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Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream.
Wash hands and face after working with substance.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material: Nitrile rubber
Glove thickness: 0.40 mm
Break through time: 480 min

splash contact:

Glove material: Nitrile rubber
Glove thickness: 0.11 mm
Break through time: 30 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 730 Camatril® -Velours (full contact), KCL 741 Dermatril® L (splash contact).

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:

Flame retardant antistatic protective clothing.

Respiratory protection

required when dusts/vapors/aerosols are generated.

Recommended Filter type: filter ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer.

These measures have to be properly documented.

SECTION 9. Physical and chemical properties

Physical state	solid liquid
Color	colorless
Odor	pleasant
Odor Threshold	No information available.

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pH	No information available.
Melting point	59 - 95 °F (15 - 35 °C)
Boiling point/boiling range	425.8 - 426.9 °F (218.8 - 219.4 °C) at 1,003 hPa
Flash point	ca. 190 °F (88 °C) at ca.1,023 hPa Method: Tested according to Annex V of Directive 67/548/EEC.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	3 hPa at 68 °F (20 °C) Method: OECD Test Guideline 104
Relative vapor density	No information available.
Density	0.930 - 0.935 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	2.54 g/l at 68 °F (20 °C) Method: OECD Test Guideline 105
Partition coefficient: n-octanol/water	log Pow: 2.6 (30 °C) OECD Test Guideline 117 Bioaccumulation is not expected.

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Autoignition temperature	ca. 507 °F(264 °C) at 980 - 981 hPa Method: Tested according to Annex V of Directive 67/548/EEC.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none

SECTION 10. Stability and reactivity

Reactivity

Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Violent reactions possible with:
Bases, acids, Strong oxidizing agents

Conditions to avoid

Strong heating.

Incompatible materials

no information available

Hazardous decomposition products

no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact

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Acute oral toxicity

LD50 Rat: > 2,000 mg/kg
OECD Test Guideline 401

Acute inhalation toxicity

Symptoms: Possible damages: , mucosal irritations

LC50 Rat: > 4.76 mg/l; 4 h ; aerosol
OECD Test Guideline 403

Acute dermal toxicity

LD50 Rat: > 2,000 mg/kg
OECD Test Guideline 402

Skin irritation

Causes skin irritation.

Rabbit

Result: irritating

OECD Test Guideline 404

Eye irritation

Causes serious eye irritation.

Rabbit

Result: Eye irritation

OECD Test Guideline 405

Sensitization

Guinea pig

Result: negative

Method: OECD Test Guideline 406

Genotoxicity in vitro

Mutagenicity (mammal cell test): chromosome aberration.

Human lymphocytes

Result: negative

Method: OECD Test Guideline 473

In vitro mammalian cell gene mutation test

MOUSE LYMPHOMA TEST

Result: negative

Method: OECD Test Guideline 476

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Ames test
Salmonella typhimurium
Result: negative
Method: OECD Test Guideline 471

Reproductive toxicity
Application Route: Oral
Rat
Number of exposures: daily
Method: OECD Test Guideline 422

Teratogenicity
Application Route: Oral
Rat
Number of exposures: daily
Method: OECD Test Guideline 414

Specific target organ systemic toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.

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SECTION 12. Ecological information

Ecotoxicity

No information available.

Persistence and degradability

No information available.

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 2.6 (30 °C)

OECD Test Guideline 117

Bioaccumulation is not expected.

Mobility in soil

No information available.

Additional ecological information

When discharged properly, no impairments in the function of adapted biological wastewater treatment plants are to be expected.

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. Regulatory information

United States of America

SARA 313

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This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Remarks

No components are subject to the Massachusetts Right to Know Act.

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Labeling

Hazard pictograms



Signal Word

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Warning

Hazard Statements

H227 Combustible liquid.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Precautionary Statements

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and 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.

P313 Get medical advice/ attention.

Full text of H-Statements referred to under sections 2 and 3.

H227 Combustible liquid.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 02/25/2019

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.

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