

SAFETY DATA SHEET

•SECTION 1 - MANUFACTURER AND PRODUCT IDENTIFICATION•

Murphy's Naturals, Inc
1053 E. Whitaker Mill Road

EMERGENCY NUMBER: 800-424-9300
(24 HOURS) Chemtrec

Raleigh, NC 27604

INFORMATION NUMBER: 888-314-5109
(BUSINESS HOURS)

PRODUCT NAME: Murphy's Naturals Lemon Eucalyptus Oil Mosquito and Tick Repellent

EPA REG. NO.: 84878-2-92107

PRODUCT CODE: 6991, MD005

HMIS: Health Hazard: 2

DATE UPDATED: 11-04-2025

Fire Hazard: 3

Reactivity: 0

Personal Protective Equipment: A

•SECTION 2 - HAZARDS IDENTIFICATION•

GHS Hazard Classification and Category :	Eye Irritant - Category 2
Flammable Liquid - Category 3	

GHS Pictogram		
Signal Word		Warning
Hazard Statement	H319 H226	Causes serious eye irritation Flammable liquid and vapor
Precautionary Statement Prevention	P210 P233 P240 P241 P242 P243 P264 P280	Keep away from open flames. – No smoking. Keep container tightly closed. Ground or bond container and receiving equipment. Use explosion-proof equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash hands thoroughly after handling. Wear protective gloves and eye/face protection.
Precautionary Statement Response	P305+P351+ P338 P337+P313 P303+P361 +P353 P370+P378	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. In case of fire: Use dry powder, alcohol resistant foam, or carbon dioxide to extinguish.
Precautionary Statement Storage	P403+P235	Store in a well-ventilated place. Keep cool.
Precautionary Statement Disposal	P501	Dispose of contents and container in accordance with local, regional, national, and international regulations.

•SECTION 3 – COMPOSITION INFORMATION ON INGREDIENTS•

NOTE: Hazardous ingredients as defined by OSHA, 29CFR 1910.1200, and/or WHMIS under the HPA. These substances are listed because in their pure bulk form, they meet the OSHA definition of hazardous. Any hazards associated with this finished product are listed in Section 2 of this MSDS. Unidentified ingredients are proprietary or non-hazardous. This data represents typical values, not product specifications. No guarantee of accuracy or completeness is made. No responsibility is assumed for any kind of loss or damages arising from use of this data.

<u>Chemical name</u>	<u>CAS Number</u>	<u>Content (w/w)</u>
Citriodiol	1245629-80-4,	30%
Ethanol	64-17-5	40 - 50%

•SECTION 4 - FIRST AID PROCEDURES•

General advice:	In case of accident or if you feel unwell, seek medical advice and show the label if possible.
If inhaled:	May cause nausea, headache, dizziness and intoxication. Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.
If on skin:	Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.
If in eyes:	May irritate eyes. Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water or eye wash solution while lifting the eye lids. Continue to rinse for at least 15 minutes. Contact physician if irritation persists.
If swallowed:	May cause discomfort if swallowed. May cause nausea, headache, dizziness and intoxication. Rinse mouth thoroughly. Do not induce vomiting. Seek medical attention if symptoms persist.
Acute or delayed symptoms:	In cases of ingestion, central nervous system depression is possible.
Indication of any immediate medical attention or special treatment needed:	No specific symptoms associated with exposure to this substance

•SECTION 5 – FIRE-FIGHTING MEASURES•

Suitable extinguishing media:	Dry powder, alcohol resistant foam, carbon dioxide
Unsuitable extinguishing media for safety reasons:	Water jet (Citriodiol® is insoluble in water)
Additional information:	If large amounts of the product are involved in a fire, it is possible that the application of water mist or fog could release enough chlorine dioxide gas in a confined space to present an explosion hazard.
Hazards during fire-fighting:	Product is a mixture of organic compounds. Combustion of repellent can produce oxides of carbon.
Protective equipment for fire-fighting:	Wear self-contained breathing apparatus and a chemical protective suit. Fight fire from a safe distance and stay upwind. Do not allow extinguishing water to reach ground water or sewage system.

•SECTION 6 - ACCIDENTAL RELEASE MEASURES•

Personal precautions:	Use personal protective equipment if required.
Environmental precautions:	Do not allow product to enter drains or ground water.
Cleanup:	For small amounts: Contain with dust binding material and dispose of. For large amounts: Pick up with suitable appliance and dispose of.
Methods and material for containment and cleaning up	Extinguish all ignition sources. Avoid sparks, flames, heat & smoking. Ventilate. Stop leak if possible without risk. Absorb with sand or other inert absorbent. Collect in containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.

•SECTION 7 - HANDLING AND STORAGE•

General handling advice:	Avoid contact with eyes. Handle in accordance with good industrial hygiene and safety practices. Wash hands after use.
General storage advice:	Store in tightly closed original container in a dry, cool and well ventilated place. Keep away from heat, sparks and open flames.
End use :	Botanical repellent is a ready to use insect repellent.

•SECTION 8 – EXPOSURE CONTROL AND PERSONAL PROTECTION•

The following applies to Industrial Settings only:

Name	Std	LT – ppm	LT – mg/m ³	ST – ppm	ST – mg/m ³
ETHANOL	WEL	1000 ppm	1920 mg/m ³	N/A	N/A

WEL = Workplace Exposure Limits

Engineering controls:	Provide adequate ventilation to minimise the risk of inhalation of vapours.
Personal protective equipment	
Respiratory protection:	Under normal usage conditions respiratory protection will not be necessary. Protection may be required under exceptional circumstances, for example when excessive air contamination exists.
Hand protection:	Wear suitable protective gloves. The preferred material would be nitrile rubber.
Eye protection:	Use safety glasses or eye protection tested and approved under appropriate government standards. If handling large amounts a face shield may be more suitable.
General safety and hygiene measures:	Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Immediately remove all contaminated clothing. Wash contaminated clothing before reuse. Hands and/or face should be washed before breaks and at the end of the shift.

•SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES•

Appearance	Form: Clear liquid Color: Pale yellow
Odor	Characteristic, citrus
Odor Threshold	No data available
pH	6.0-9.0
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	26°C / 78.8°F
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Specific gravity	0.9018
Solubilities	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition temperature	No data available
Decomposition Temperature	No data available

Viscosity	No data available
Explosive properties	None of the components contain functional groups that confer explosive properties.
Oxidizing properties	None of the components have the ability to act as an oxidant or reductant.

•SECTION 10 – STABILITY AND REACTIVITY•

Conditions to avoid:	Avoid all sources of ignition: heat, sparks, and open flame.
Substances to avoid:	Strong oxidizing agents
Hazardous reactions:	No data available. Product is not expected to react under normal storage conditions.
Decomposition products:	No available data.
Thermal decomposition:	Stable under ambient conditions

•SECTION 11 – TOXICOLOGICAL INFORMATION•

Endpoint	Value	Test method
Acute Toxicity	Citriodiol® Rat LD ₅₀ oral: 2408 mg/kg	OECD 401
	Rat LD ₅₀ dermal: >2000 mg/kg	OECD 402
	Rat LC ₅₀ inhalation determined on 40% aerosol spray > 2.06 mg/L: equivalent to >0.83mg/ L Ethanol Rat LD ₅₀ oral: >2000 mg/kg (literature) Mouse LC ₅₀ inhalation: >20 mg/kg 4h (literature) Rabbit LD ₅₀ dermal: >2000 mg/kg (literature)	EPA/FIFRA Guideline 81-3 OECD 401 OECD 402
	Citriodiol® Skin – Mild irritant (not sufficient for classification) Eyes – Moderate irritant Ethanol Rabbit: Skin – not irritating (literature) Rabbit: Eye – slightly irritating (literature)	OECD 404 OECD 405 OECD 404 OECD 405
Corrosivity	No study conducted but no components are corrosive and material has a pH between 6-9	
Sensitisation	Citriodiol® Non sensitizer Ethanol Guinea pig: not sensitizing (literature)	OECD 406 OECD 406
Repeated dose toxicity	Citriodiol® Rat (dermal): NOAEL at 1000 mg/kg day in 28-day study.	OPPTS 870.3200 OECD 410
Carcinogenicity	No study conducted. No carcinogenic potential identified in components for which data are available.	
Mutagenicity	Citriodiol® Not genotoxic Ethanol Ames Test: not mutagenic (literature)	OECD 471, OECD 473, OECD 474 OECD 471
Toxicity for reproduction	No reproductive toxicity and no adverse systemic effects	OPPTS 870.3800

•SECTION 12 – ECOLOGICAL INFORMATION•

Endpoint	Value	Test method
Toxicity to fish	Citriodiol® <i>Danio rerio</i> EC ₅₀ : >35mg/L – 96 hours	OECD 203
	Ethanol <i>Leuciscus idus</i> LC ₅₀ : >100mg/L – 48hr (literature)	OECD 203
Toxicity to invertebrates	Citriodiol® <i>Daphnia Magna</i> EC ₅₀ : >26mg/L – 48 hours	OECD 202
	Ethanol <i>Daphnia Magna</i> EC ₅₀ : >100mg/L – 24hr (literature)	OECD 202
Toxicity to algae	Citriodiol® <i>Pseudokirchneriella</i> EC ₅₀ : >37mg/L – 72 hours	OECD 201
	Ethanol <i>Chlorella pyrenoidosa</i> EC ₅₀ : >100mg/L (literature)	OECD 201

Persistence and degradability	Citriodiol® is readily biodegradable	OECD 301F
	Ethanol is readily biodegradable (literature)	OECD 301D

Bioaccumulative potential	Bioaccumulation is unlikely as Citriodiol® is readily metabolized in the human body, by microorganisms and in the soil. High BCF values for some components are offset by either the small amounts present or low water solubility.
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Component	Bioconcentration factor (BCFWIN)
p-Menthane-3,8-diol	11.47
Isopulegol	79.13
Citronellal	177.5
Citronellol	204.5

Mobility in soil	No data available
Results of PBT and vPvB assessment	Citriodiol® does not meet the criteria for classification as PBT or vPvB. Propan-2-ol is not considered to be PBT or vPvB.
Other adverse effects	No data available

•SECTION 13 – DISPOSAL CONSIDERATIONS•

Waste disposal of substance:	Dispose of in accordance with local authority regulations
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•SECTION 14 - TRANSPORT INFORMATION•

 Hazard class	Packing group	ID number	Hazard label	Proper shipping name
Land transport USDOT: 3 Limited Quantity Exception (<5L)	III	1987	N/A	Alcohols, N.O.S. (ETHANOL)
Sea transport IMDG: 3 Limited Quantity Exception (<5L)	III	1987	N/A	Alcohols, N.O.S. (ETHANOL)
Air transport IATA/ICAO: 3 Limited Quantity Exception (<5L)	III	1987	N/A	Alcohols, N.O.S. (ETHANOL)

Environmental hazards	Not classified as environmentally hazardous
Special precautions for user	No data available
Transport in bulk – annex II of MARPOL 73/78 and IBC code	Not classified as a marine pollutant, and not intended to be shipped in bulk

•SECTION 15 - REGULATORY INFORMATION•

Safety, health and environmental regulations/legislation specific for the substance or mixture	Citriodiol® is an active substance for insect repellent products (PT19) currently under review according to the criteria of the Biocidal Products Regulation (EU) 528/2012.
Chemical safety assessment	No chemical safety assessment has been carried out for this substance by the supplier.

•SECTION 16 - OTHER INFORMATION•

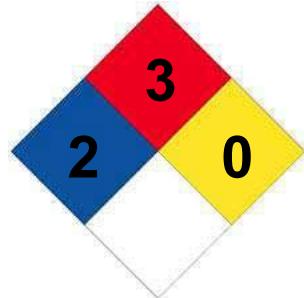
NFPA and HMIS use a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates extreme danger. Although similar, the two rating systems are intended for different purposes, and use different criteria. The NFPA system was developed to provide emergency responders an on-the-spot alert to the hazards of a material and their severity. The HMIS system was designed to communicate workplace hazard information to employees who handle hazardous chemicals.

KEY/LEGEND: EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration.

LITERATURE REFERENCES: None

DISCLAIMER: This (M)SDS provides a brief summary of the physical and chemical characteristics of this product to guide usage and handling of the material. It is not a comprehensive document on worldwide hazard communication regulations. It is compiled from sources considered valid and accurate. Wisconsin Pharmacal assumes no responsibility for injury or damage resulting from misuse of the product.

2	HEALTH HAZARD
3	FIRE HAZARD
0	REACTIVITY
A	PPE

**CAS Number (from Section 3)**

42822-86-6 is the CAS No. for the main component in Citriodiol®, p-menthane-3,8-diol (PMD). CAS No. 1245629-80-4 was recently assigned by the ACS for Citriodiol® in its entirety, but has not yet been fully adopted due to the identification and notification of Citriodiol® under 42822-86-6 for purposes of Directive 98/8/EC of the European Parliament. The PMRA in Canada recognize 1245629-80-4 as the CAS No. for Citriodiol®.