

SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name: OptiClear

Product Number: OE-101

1.2 Relevant Identified Uses of the Substance/Mixture and Uses Advised Against

Investigational research by professional users

1.3 Details of the Supplier of the Safety Data Sheet

Manufacturer

National Diagnostics
305 Patton Drive
Atlanta, GA 30036
(404) 699-2121
(800) 526-3867
info@nationaldiagnostics.com

1.4 Emergency Telephone Number

Chemtrec

1-800 424-9300 (U.S. & Canada)
01-703-527-3887 (outside U.S. & Canada)

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS/CLP]

H226 - Flammable Liquids (Category 3)
H315 - Skin Corrosion/Irritation (Category 2)
H317 - Skin Sensitizer (Category 1)
H410 - Chronic Hazards to the Aquatic Environment (Category 1)

2.2 Label Elements

GHS LABEL ELEMENTS AND CLASSIFICATION

GHS Label Elements



DANGER

H226 - Flammable liquid and vapor.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H410 - Very toxic to aquatic life with long lasting effects.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician .
P331 - Do NOT induce vomiting.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P333+P313 - IF SKIN irritation or rash occurs: Get medical advice/attention.
P501 - Dispose of contents/containers to an approved waste disposal plant.

2.3 Other Hazards

None found.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Chemical Names/Description

Distilled essential oils - food grade

Chemical Formula

C₁₀H₁₆

Component List

Component	% Comp.	CAS #	EC #
d-limonene	100	5989-27-5	227-813-5

SECTION 4 - FIRST AID MEASURES

4.1 Description of First Aid Measures

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion

Do not induce vomiting. If swallowed and the person is conscious, immediately give large amounts of water. Get medical attention.

Skin

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes

Remove contact lenses at once. Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

Inhalation

May include dizziness, headaches, and nasal irritation.

Ingestion

May include nausea, vomiting, and headache.

Skin

May include drying and redness (dermatitis) of the skin.

Eyes

May include redness, itching, and watering of the eyes.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Unknown/not applicable

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry powder, foam, carbon dioxide. (Water may be ineffective.)

5.2 Special Hazards Arising from the Substance/Mixture

Hazardous Combustion Products

Thermal decomposition products may include carbon monoxide, carbon dioxide, and hydrocarbons.

Hazardous Decomposition Products

Carbon monoxide and unidentified organic compounds may be formed during combustion.

Hazardous Polymerization

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

5.3 Advice for Firefighters

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

5.4 Further Information

No data available.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions

Wear appropriate protective equipment as specified in Section 8.

6.2 Environmental Precautions

Prevent discharge into the environment. Dike spills and stop leakage where practical. Do not allow material to enter drains.

6.3 Methods and Materials for Containment and Cleaning Up

Eliminate source of ignition. Ventilate area. Cover with absorbent material (soda ash) to confine spill and sweep or shovel into container. Close container tightly.

6.4 References to Other Sections

For disposal information, see Section 13. For Protective clothing and equipment, see Section 8.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

7.2 Conditions for Safe Storage (including any incompatibles)

Keep in a tightly closed container, stored in a cooled, dry, ventilated area away from sources of heat or ignition. Protect from physical damage. Isolate from incompatible materials.

Incompatibles

Avoid contact with strong acids, alkalis, or oxidizing agents.

7.3 Specific End Uses

Investigational research by professional users

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PRECAUTIONS

8.1 Control Parameters

ACGIH Threshold Limit Value (TLV): None established

OSHA Permissible Exposure Limit (PEL): None established

8.2 Exposure Controls

Engineering Controls

Local exhaust should be adequate.

Respiratory Protection

Not expected to require personal respirator usage, but if vapor concentration becomes high, use NIOSH/MSHA approved self-contained air mask.

Eye Protection

Safety glasses.

Skin Protection

Wear protective gloves and clean body covering clothing.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical & Chemical Properties

a. Appearance	Colorless, mobile liquid	b. Odor	Citrus odor
c. Odor Threshold	N.A.	d. pH	N.A.
e. Melting/Freezing Point (°C)	0	f. Boiling point (°C)	179
g. Flash Point (°C)	49	h. Evaporation Rate	0.2 (BuAc=1)
i. Flammability	Combustible	j. Upper/Lower Flammability or Explosive Limits	L.E.L. 0.7%; U.E.L. 6.1%
k. Vapor Pressure	6.0 mm HG @ 25 C	l. Vapor Density (Air = 1)	4.94 (air = 1)
m. Relative Density	0.85 kg/L @ 25 C	n. Water Solubility	Insoluble
o. Partition Coefficient n-octanol/water	log Kow=4.38	p. Autoignition Temperature (°C)	237
q. Decomposition Temperature (°C)	None under ordinary use and conditions	r. Viscosity	No data available.
s. Explosive Properties	Oxidizeable vapors	t. Oxidizing Properties	Not an oxidizer

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

Oxidizable liquid and vapor- avoid heat, oxidizers and ignition sources

10.2 Chemical Stability

Stable under normal conditions of use. Incompatible with strong oxidizing agents.

10.3 Possibility of Hazardous Reactions

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

10.4 Conditions to Avoid

Heat, sources of ignition.

10.5 Incompatible Materials

Avoid contact with strong acids, alkalis, or oxidizing agents.

10.6 Hazardous Decomposition Products

Carbon monoxide and unidentified organic compounds may be formed during combustion.

SECTION 11 - TOXICOLOGICAL INFORMATION

Product LD50 Values

Oral Rat LD50 (mg/kg)

GRAS (Generally Regarded As Safe)

Dermal Rabbit LD50 (mg/kg)

GRAS (Generally Regarded As Safe)

Component Cancer List Status

	NTP Carcinogen		IARC Category
	Known	Anticipated	
d-limonene	No	No	None

Potential Health Effects

Inhalation

Inhalation can cause nose, throat, and respiratory tract irritation. Prolonged exposure to high vapor or mist concentrations may cause dizziness, headaches, and nasal irritation.

Ingestion

Ingestion may cause vomiting, headache, and other medical problems.

Skin

Repeated or prolonged contact can cause redness, irritation, and scaling of the skin (dermatitis). Normal care and personal hygiene should prevent skin effects.

Eyes

Eye irritation may occur with exposure to concentrated vapors or contact with product.

Carcinogenicity

None of the components of this material are listed by NTP, OSHA, ACGIH, or IARC as a carcinogen or a suspected carcinogen.

Mutagenicity

No information available.

Reproductive Toxicity

No information available.

Teratogenic Effects

No information available.

Routes of Entry

May be absorbed through the skin, by inhalation, or by ingestion.

Target Organ Statement

No information available.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	LC50 (96hr fathead minnod): 720ug/L	EC50 (48hrs, Daphnia) 0.36mg/L	EC50 (72hrs) 8mg/L	EC50 (3hr) 209mg/L
	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No Data	No Data	No Data	No Data

12.2 Persistence and Degradability

Readily biodegradable

12.3 Bioaccumulative Potential

BCF is 1022 L/kg (calculated)

12.4 Mobility in Soil

Koc of d-limonene (predicted): 1984 L/kg.

12.5 Results of PBT and vPvB Assessment

Not a PBT or vPvB

12.6 Other Adverse Effects

No data

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Offer surplus or non-recyclable product to licensed disposal company. Disposal is subject to user compliance with applicable law and product characteristics at time of disposal. Dispose of packaging as product.

SECTION 14 - TRANSPORT INFORMATION

	ADR/RID	IATA	IMO	DOT
14.1 UN Number	2319	2319	2319	N.A.
14.2 Shipping Name	Terpene Hydrocarbons, N.O.S. (d-limonene)	Terpene Hydrocarbons, N.O.S. (d-limonene)	Terpene Hydrocarbons, N.O.S. (d-limonene)	Not regulated
14.3 Hazard Class	3	3	3	N.A.
14.4 Packing Group	III	III	III	N.A.
14.5 Environmental Hazards	N.A.	N.A.	Marine pollutant	N.A.
14.6 Special Precautions	N.A.	N.A.	N.A.	N.A.

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture

United States

TSCA Regulatory Statement

All intentional ingredients are listed on the TSCA Inventory.

SARA 311/312 Hazard Categories

Component	Fire	Pressure	Reactivity	Acute	Chronic
d-limonene	Yes	No	No	Yes	No

Europe

EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

SECTION 16 - OTHER INFORMATION

Revisional Updates

5/29/2015 - Updated Sections 2.1 and 3.1

6/20/2013 - Released Version 1.0

NFPA Codes

Health 1 Flammability 2 Reactivity 0

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