SAFETY DATA SHEET

FOGG TERPENES THE MISSION

1. IDENTIFICATION

Product Description: FOGG TERPENES THE MISSION

Recommended use

Concentrated aromatic and flavor ingredient which may be used in flavor and fragrance compounds according to legal and IFRA or FEMA GRAS/FDA guidelines.

Recommended restrictions For Manufacturing Use Only

24 Hour Emergency Response Information

INFOTRAC (ACCT# 78928);
1-800-535-5053 WITHIN THE U.S.A.
1-352-323-3500 OUTSIDE THE U.S.A.

Web Site:
www.foggflavors.com
Company:
Fogg Flavor Labs, LLC
319 Newburyport Turnpike
Rowley, MA 01969
1-888-822-7364

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Fogg Flavor Labs, LLC
319 Newburyport Turnpike
Rowley, MA 01969
United States

1-888-822-7364

Emergency phone number INFOTRAC (ACCT# 78928);
1-800-535-5053 WITHIN THE U.S.A.
1-352-323-3500 OUTSIDE THE U.S.A.

E-mail support@foggflavors.com

Website www.foggflavors.com

2. HAZARD(S) IDENTIFICATION

Physical hazards	Flammable liquids Category 3
Health hazards	Acute toxicity, oral Category 5
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Sensitization, skin	Category 1
Aspiration hazard	Category 1
Hazardous to the aquatic environment, acute hazard	Category 1
Environmental hazards	
Hazardous to the aquatic environment, long-term hazard	Category 1

Label elements

Signal word	Danger
Hazard statement	Flammable liquid and vapor. May be fatal if swallowed and enters airways. Causes skin irritation. Causes skin and eye irritation. Causes serious eye irritation
Precautionary statement	
Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly

closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response

IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.

Storage

Store in a well-ventilated place. Keep cool. Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information

100% of the mixture consists of component(s) of unknown acute inhalation toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Chemical name	Common name and synonyms	CAS number	%
1,6- octadiene, 7-methyl-3-methylene3-methylene-7-methyl-1, 6-octadiene beta-geraniolene 7-methyl-3-methylideneocta-1,6-diene 2-methyl-6-methylene-2,7-octadiene	MYRCENE	80-56-8	50.44
dextro,laevo-pin-2(3)-ene 2,6,6 - trimethyl bicyclo-3,1,1-2-heptene 4,7,7- trimethylbicyclo[3.1.1]hept-3-ene	ALPHA PINENE	80-56-8	27.433
Pseudopinene Nopinene 6,6-Dimethyl-2-methylenebicyclo[3.1.1]heptane	BETA PINENE	127-91-3	9.73
(1R,4E,9S)-4,11,11-trimethyl8-methylidenebicyclo[7.2.0]undec-4-ene	CARYOPHYLLENE BETA	87-44-5	3.24
alpha- caryophyllene 3, 7, 10-humulatriene a- humulene	HUMULENE	6753-98-6	1.47

DIPENTENE (+) - P- MENTHA- 1, 8- DIENE (R) - (+) - Limonene (R) - 4- Isopropenyl- 1- methyl- 1-cyclohexene 1- methyl- 4- prop- 1- en- 2-ylcyclohexene	CARVENE	5989-27-5	6.19
1,3,6-Octatriene, 3,7-dimethyl3,7-Dimethylocta-1,3,6-triene	OCIMENE	13877-91-3	.29
dextro,laevo-camphene 6,6-dimethyl-5-methylidenebicyclo [2.2.1]heptane 2,2-DIMETHYL-3-METHYLENE NORBORNANE 3,3-DIMETHYL-2-METHYLENE NORCAMPHANE	CAMPHENE	79-92-5	.59
2,6-DIMETHYL-2,7-OCTADIENE-6-OL 1,6-Octadien-3-ol, 3,7-dimethyl3,7-Dimethylocta-1,6-dien-3-ol LINALYL ALCOHOL	LINALOOL	78-70-6	.59

4. FIRST-AID MEASURES

Inhalation

If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. For breathing difficulties, oxygen may be necessary. Call a physician if symptoms develop or persist.

Skin contact

Take off immediately all contaminated clothing. Get medical attention if irritation develops and

persists. Wash skin thoroughly with soap and water for several minutes.

Eye contact

Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists. Promptly wash eyes with plenty of water while lifting the eye lids.

Ingestion

Call a physician or poison control center immediately. If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

Most important symptoms/effects, acute and delayed

Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed

Not available.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Water spray, fog, CO2, dry chemical, or alcohol resistant foam.

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for firefighters

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.

Fire fighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage. Ventilate closed spaces before entering them. Keep run-off water out of sewers and water sources. Dike for water control.

Specific methods

Use water spray to cool unopened containers.

General fire hazards

Static charges generated by emptying package in or near flammable vapor may cause flash fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Avoid contact with skin or inhalation of spillage, dust or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps.

The product is immiscible with water and will spread on the water surface.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Prevent product from entering drains. Absorb in vermiculite, dry sand or earth and place into containers.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. This material and its container must be disposed of as hazardous waste. Collect and dispose of spillage as indicated in section 13 of the SDS.

Environmental precautions

Retain and dispose of contaminated wash water. Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. HANDLING AND STORAGE

Precautions for safe handling

Do not handle or store near an open flame, heat or other sources of ignition. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits
US. ACGIH Threshold Limit Values

Material	Type	Value
PINENE ALPHA (CAS 80-56-8)	TWA	20 ppm

Material	Type	Value
CARVENE (CAS TWA 165.5 mg/m3 5989-27-5)	TWA	165.5 mg/m3
		30 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Use explosion-proof ventilation equipment to stay below exposure limits. Adequate ventilation should be provided so that exposure limits are not exceeded.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Chemical resistant gloves.
Other Not available.

Respiratory protection

Respiratory protection not required. If ventilation is insufficient, suitable respiratory protection must be provided.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless liquid
Physical state	Liquid.
Form	Liquid.
Color	Colorless
Odor	Characteristic.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available
Initial boiling point and boiling range	Not available
Flash point	Not available
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available
Relative density	Not available.

Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	0.81 g/cm3 estimated at 20 °C
Explosive properties	Not explosive.
Refractive Index (@20c)	1.48
Molecular weight	Not available.
Oxidizing properties	Not oxidizing.
Specific gravity	0.81 at 25 °C

10. STABILITY AND REACTIVITY

Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability

Material is stable under normal conditions.

Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.

Incompatible materials

Strong oxidizing agents.

Hazardous decomposition products

No hazardous decomposition products if stored and handled as indicated.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Prolonged inhalation may be harmful.

Skin contact Causes skin irritation. May cause an allergic skin reaction.

Eye contact Causes serious eye irritation. Causes mild eye irritation.

Ingestion

Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics

Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways.

Product	Species	Test Results
PINENE ALPHA (CAS 80-56-8)		
Dermal LD50	Rabbit	> 5000 mg/kg
Oral LD50	Rat	> 5000 mg/kg

CARVENE (CAS 5989-27-5)		
Dermal	Rabbit	5 g/kg

LD50		
Oral LD50	Rat	4400 mg/kg

CARVENE (CAS 5989-27-5)			
		Species	**Test Results**
Aquatic			
Crustacea	EC50	Water flea (Daphnia pulex)	69.6 mg/l, 48 hours
Fish	EC50	Fathead minnow (Pimephales promelas)	> 0.619 - < 0.796 mg/l, 96 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	> 22 - < 46 mg/l, 96 hours DIN 38412 Part 15 static. The details of the toxic effect related to the nominal concentration.
	LC50-R	Fish	35 mg/l, 4 days
Other	EC50	Activated Sludge	3.94 mg/l

Product	**Species**	**Test Results**
NEROLIDOL NATURAL (CAS 7212-44-4)		
Dermal LD50	Rabbit	> 5000 mg/kg
Oral LD50	Rat	> 2610 mg/kg

Product	Species	Test Results
OCIMENE NATURAL (CAS 13877-91-3)		
Acute		
Oral LD50	Rat	> 5000 mg/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization. Autoxidation products of the substance may be sensitizing.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not available.

Reproductive toxicity

This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Product

PINENE ALPHA (CAS 80-56-8)			
Aquatic		**Species**	**Test Results**
Crustacea	LC50	Daphnia magna	41 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.28 mg/l, 96 hours

CAMPHENE (CAS 79-92-5)			
Aquatic		**Species**	**Test Results**
Algae	EC50	Green algae (Desmodesmussubspicatus)	> 1000 mg/l, 72 hours Method: OECD Test Guideline 201
Crustacea	EC50	Daphnia magna	0.72 mg/l, 48 hours Method: OECD Test Guideline 202
Fish	LC50	Danio rerio	0.72 mg/l, 96 hours Method: OECD Test Guideline 203

Persistence and degradability

No data is available on the degradability of this substance.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)
4.17

Mobility in soil

No data available.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. DISPOSAL CONSIDERATIONS

Disposal instructions

Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. Do

not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code Not established.

Waste from residues / unused products

Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

ADN

UN number	2319
UN proper shipping name	TERPENE HYDROCARBONS, N.O.S. (MYRCENE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	Yes
Labels required	3

ADR

UN number	2319
UN proper shipping name	TERPENE HYDROCARBONS, N.O.S.

Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	Yes
Labels required	3

RID

UN number	2319
UN proper shipping name	TERPENE HYDROCARBONS, N.O.S.
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing Group	III
Environmental Hazards	Yes
Labels required	3
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT

BULK

UN number	2319
Proper shipping name	TERPENE HYDROCARBONS, N.O.S.
Hazard class	3
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Packaging exceptions	150
Packaging bulk	242
Labels required	3

DOT

NON-BULK

Not regulated as dangerous goods

IATA

UN number	2319
UN proper shipping name	TERPENE HYDROCARBONS, N.O.S.
Transport hazard class(es)	3

Subsidiary class(es)	-
Packing group	III
Environmental hazards	No
Labels required	3

IMDG

UN number	2319
UN proper shipping name	TERPENE HYDROCARBONS, N.O.S.
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group III	
Marine pollutant	Yes
Environmental hazards	
Labels required	3
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

ADN; ADR; DOT BULK; IATA; IMDG; RID
Flammable Liquid

Marine pollutant

15. REGULATORY INFORMATION

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.
SARA 304 Emergency release notification
Not regulated.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not available.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)
Not regulated.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
SARA 302 Extremely hazardous substance
Not listed.
SARA 311/312 Hazardous chemical
Yes

Classified hazard categories
Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitization
Aspiration hazard
Hazard not otherwise classified (HNOC)

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.
Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations

California Proposition 65

California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Issue date	07-13-2019
Revision date	07-13-2019
Version	# 01
HMIS® ratings	
Health:	2*
Flammability:	3
Physical hazard:	0

DISCLAIMER

Fogg Flavor Labs, LLC. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available. The above information relates only to this product and not to its use in combination with any other material or any particular process and is designed only as guidance for the safe handling, use, processing, storage, transportation, and disposal and should not be considered as a guarantee or quality specification. This product has not been evaluated for safe use in e-cigarettes or any vaping application where the product(s) is/are intentionally vaporized and inhaled. Fogg Flavor Labs, LLC
International, Inc. has performed no testing on these products in e-cig/vaping applications. It is the sole responsibility of the individual(s) purchasing this product to assess its' safety in the final application. The above information relates only to this product and not to its use in combination

with any other material or any particular process and is designed only as guidance for the safe handling, use, processing, storage, transportation, disposal, and should not be considered as a guarantee or quality specification. The above information is based on data provided by and collected from recognized sources such as distributors, manufacturers, and technical groups and is considered to be accurate to the best of Fogg Flavor Labs, LLC's knowledge as of the date of this document. It is
the responsibility of the user to review all safety information about this product and determine its safety and suitability in their own processes and operations. Appropriate warnings and safe handling procedures should be provided to all handlers and users, taking into account the intended use and the specific conditions and factors relating to such use in accordance with all applicable laws and regulations.
Disclaimer
Revision information This document has undergone significant changes and should be reviewed in its entirety.