

SAFETY DATA SHEET

Classified According to OSHA Hazard Communication Standard (HCS)



SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation: Fresh Lemon
Terpene Flavor Profile

Product Number: TTF-FRLM-R2

Other Identifying Product Numbers: TTF-FRLM-R2-02, TTF-FRLM-R2-05, TTF-FRLM-R2-30, TTF-FRLM-R2-120, TTF-FRLM-R2-480

1.2. Recommended Use and Restrictions on Use

This product is intended for use only by adults 21 or older. For lawful use only. This product is concentrated and should not be used undiluted. Not for use with tobacco or nicotine. Avoid contact with the skin, eyes, wood surfaces, and fabrics. Keep out of reach of children and pets. Consumers should determine and conduct their own safety standards and testing. The United States Food and Drug Administration, Center for Disease Control and Prevention, and multiple state governments are investigating numerous instances of severe respiratory illnesses and deaths associated with the use of vaping products. Symptoms include breathing difficulty, shortness of breath, chest pain, mild to moderate gastrointestinal illness, fever, or fatigue. To date, True Terpenes has not received any evidence confirming that this product has caused any adverse health consequences. The State of Oregon has enacted regulations which would prohibit the use of certain substances in vape applications. None of True Terpenes' products currently contain any such substances. Multiple state governments have enacted laws banning the sale of flavors, including terpenes, in vaping applications; however, these laws are in flux. Do not use this product if you are pregnant, nursing or a person with or at risk of serious health conditions including but not limited to: heart disease, high blood pressure, diabetes, respiratory illness, or a person taking medicine for depression or asthma. Discontinue use and consult your doctor if any adverse reaction occurs. This product is not intended to diagnose, treat, cure or prevent any disease. True Terpenes has not evaluated this product for safe use in e-cigarettes or any vaping application where the product(s) is/are intentionally vaporized and inhaled. Discontinue use of this product upon the earlier of expiration or one year from the date of purchase.

1.3. Details of the Supplier of the Safety Data Sheet

Company: True Terpenes
Address: 8210 NE Mauzey Ct
Hillsboro, OR 97124 USA
Telephone: 888-954-8550

1.4. Emergency Telephone Number (24 hours)

CHEMTREC (USA) 800-424-9300
CHEMTREC (INTERNATIONAL) 1+ 703-527-3887

SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture

Flavor is Our Passion. Quality is Our Promise

Product Number: TTF-FRLM-R2

Third-Party Audited and Certified ISO 9001:2015 & FSSC 22000

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For the full text of the Hazard and Precautionary Statements listed below, see Section 16.

Hazard Class	Category	Hazard Statements	Precautionary Statements:
Skin Corrosion / Irritation	Category 2	H315	P264, P280, P302+P352, P321, P332+P313, P362
Respiratory Sensitizer	Category 1	H334	P261, P285, P304+P341, P342+P311, P501
Skin Sensitizer	Category 1	H317	P261, P272, P280, P302+P352, P332+P313, P321, P363, P501
Aspiration Hazard	Category 1	H304	P301+P310, P331, P405, P501
Flammable Liquids	Category 3	H226	P210, P233, P240, P241, P242, P243, P280, P303+P361+P353, P370+P378, P403+P235, P501
Hazardous to the Aquatic Environment (Acute)	Category 1	H400	P273, P391, P501
Hazardous to the Aquatic Environment (Chronic)	Category 1	H410	P273, P391, P501
Eye Damage / Irritation	Category 2A	H319	P264, P280, P305+P351+P338, P337+P313
Reproductive Toxicity	Category 2	H361	P201, P202, P280, P308+P313, P405, P501
Specific Target Organs/Systemic Toxicity Following Repeated Exposure	Category 2	H373	P260, P314, P501

2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

Hazard Statements:

Hazard Number	Hazard Statement
H226	Flammable Liquid and Vapor.
H304	May be fatal if swallowed and enters airway.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

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Precautionary Number	Precautionary Statement
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, sparks and open flame. No smoking.
P233	Keep container tightly closed.
P240	Ground container and receiving equipment.
P241	Use explosion-proof equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe fumes, mist, vapors, or spray.
P261	Avoid breathing fumes, mist, vapors, or spray.
P264	Wash arms, hands and face thoroughly after handling.
P272	Contaminated work clothing must not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.
P285	In case of inadequate ventilation wear respiratory protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or physician.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P341	IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
P308+P313	IF exposed or concerned: Get medical attention.
P314	Get medical attention if you feel unwell.
P321	Specific treatment (Wash areas of contact with water.).
P331	Do NOT induce vomiting.
P332+P313	If skin irritation occurs: Get medical attention.
P337+P313	If eye irritation persists: Get medical attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or physician.
P362	Take off contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use dry chemical, foam or carbon dioxide to extinguish.
P391	Collect spillage.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents in accordance with local, state, federal and international regulations.

2.4. Hazards not Otherwise Classified or Covered by GHS

Data not available.

SECTION 3: Composition / Information on Ingredients

3.1. Components of Substance or Mixture

Flavor is Our Passion. Quality is Our Promise

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Chemical Name	Formula	Molecular Weight	CAS Number
Limonene	C ₁₀ H ₁₆	136.23 g/mol	5989-27-5
Citral	C ₁₀ H ₁₆ O	152.23 g/mol	5392-40-5
Citronellal	C ₁₀ H ₁₈ O	154.25 g/mol	106-23-0
Alpha Terpineol	C ₁₀ H ₁₈ O	154.25 g/mol	98-55-5
Ethyl Butyrate	C ₆ H ₁₂ O ₂	116.15 g/mol	105-54-4

Exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: First-Aid Measures

4.1. General First Aid Information

- Eye Contact:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops.
- Inhalation:** IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
- Skin Contact:** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. May cause skin irritation.
- Ingestion:** IF SWALLOWED: Immediately call a POISON CENTER or a Physician. Dilute immediately with water or milk. Do not induce vomiting. Call a physician if necessary.

4.2. Most important Symptoms and Effects, Acute and Delayed

Causes skin irritation. Causes serious eye irritation. Cause damage to organs. EYE CONTACT: May cause irritation with burning and stinging with possible damage to the cornea and conjunctiva. SKIN CONTACT: May cause skin irritation. INHALATION: May cause irritation. INGESTION: May cause nausea, diarrhea.

4.3. Medical Attention or Special Treatment Needed

Specific treatment (Wash areas of contact with water).

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

In case of fire: Use dry chemical, foam or carbon dioxide to extinguish. Carbon dioxide, dry chemical, alcohol foam, water spray.

5.2. Specific Hazards Arising from the Substance or Mixture

Flammable liquid and vapor. Vapors can flow along surfaces to distant ignition source and flashback. Use water spray to blanket fire, cool fire exposed container, and to flush non-ignited spills or vapors away from fire.

5.3. Special Protective Equipment for Firefighters

Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

SECTION 6: Accidental Release Measures

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6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Ground container and receiving equipment. Use explosion-proof equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory protection.

6.2. Cleanup and Containment Methods and Materials

Remove all sources of ignition. Contain spill. Absorb with suitable inert material (vermiculite, dry sand, etc.) and place in a chemical waste container for proper disposal in an approved waste disposal facility. Ventilate area of spill. Have extinguishing agent available in case of fire. Use non-sparking tools and equipment. Dispose of in accordance with local regulations.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling and Storage Conditions

Store locked up in original container with lid securely tightened. Store in a cool dry place away from heat, open flame, sunlight, combustible materials, hot surfaces, and other sources of ignition in a secure, preferably flammable, storage area. As with all chemicals, use PPE and wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Empty containers may be hazardous since they retain product residues

SECTION 8: Exposure Controls / Personal Protection

8.1. Control Parameters

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Citral	TLV-TWA	USA	5 ppm TWA (inhalable fraction and vapor)	ACGIH – Threshold Limit Values – Time Weighted Averages

8.2. Exposure Controls

Engineering Controls: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limit.

Respiratory Protection: Normal room ventilation is adequate. If the exposure limit is exceeded, a full facepiece respirator with organic vapor cartridge may be worn.

Skin Protection: Wear protective gloves and eye protection. Chemical resistant gloves, PVA or Nitrile rubber.

Eye Protection: Wear protective gloves and eye protection. Safety glasses or goggles.

8.3. Personal Protective Equipment

Wear protective gloves and eye protection. In case of inadequate ventilation wear respiratory. Normal room ventilation is adequate. If the exposure limit is exceeded, a full facepiece respirator with organic vapor cartridge may be worn. Chemical resistant gloves, PVA, or Nitrile rubber. Safety glasses or goggles.

SECTION 9: Physical and Chemical Properties

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9.1. Basic Physical and Chemical Properties

Appearance:	Clear, colorless to pale yellow liquid
Physical State:	Liquid
Odor:	Sweet, juicy, citrus, ripe lemon
Odor Threshold:	Data not available
pH:	Data not available
Melting/Freezing Point:	Data not available
Initial Boiling Point/Range:	Data not available
Flash Point:	Data not available
Evaporation Rate:	Data not available
Flammability/Explosive Limits:	Data not available
Vapor Pressure:	Data not available
Vapor Density:	Data not available
Relative Density:	Data not available
Solubility:	Insoluble in water
Partition Coefficient:	Data not available
Auto-Ignition Temperature:	Data not available
Decomposition Temperature:	Data not available
Viscosity:	Data not available
Explosive Properties:	Data not available
Oxidizing Properties:	Data not available

SECTION 10: Stability and Reactivity

10.1. Reactivity and Chemical Stability

May form flammable/explosive vapour-air mixture.

10.2. Possibility of Hazardous Reactions

Data not available.

10.3. Conditions to Avoid and Incompatible Materials

Keep away from heat, sparks and open flame. No smoking. Keep container tightly closed. Direct sunlight, extremely high or low temperatures, heat, sparks, open flame, strong acids and strong bases.

10.4. Hazardous Decomposition Products

Carbon oxides may form upon decomposition.

SECTION 11: Toxicological Information

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11.1. Information on Toxicological Effects

Acute Toxicity – Oral Exposure:

Not applicable.

Acute Toxicity – Dermal Exposure:

Not applicable.

Acute Toxicity – Inhalation Exposure:

Not applicable.

Acute Toxicity – Other Information:

LD50, Oral (calculated): 3665 mg/kg

Contains ingredients with unknown oral toxicity.

Skin Corrosion and Irritation:

Causes skin irritation. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF ON SKIN: Wash with plenty of soap and water. Specific treatment (Wash areas of contact with water). If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.

Serious Eye Damage and Irritation:

Causes serious eye irritation. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. 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.

Respiratory Sensitization:

May cause allergy or asthma symptoms or breathing difficulties if inhaled. Avoid breathing fumes, mist, vapors, or spray. In case of inadequate ventilation wear respiratory protection. IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or physician. Dispose of contents in accordance with local, state, federal and international regulations.

Skin Sensitization:

May cause an allergic skin reaction. Avoid breathing fumes, mist, vapors, or spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves and eye protection. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical attention. Specific treatment (Wash areas of contact with water.). Wash contaminated clothing before reuse. Dispose of contents in accordance with local, state, federal and international regulations.

Germ Cell Mutagenicity:

Not applicable.

Carcinogenicity:

Not applicable.

Reproductive Toxicity:

Suspected of damaging fertility or the unborn child. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get

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medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

Specific Target Organ Toxicity from Single Exposure:

Not applicable.

Specific Target Organ Toxicity for Repeated Exposure:

May cause damage to organs through prolonged or repeated exposure. Do not breathe fumes, mist, vapors, or spray. Get medical attention if you feel unwell. Dispose of contents in accordance with local, state, federal and international regulations.

Aspiration Hazard:

May be fatal if swallowed and enters airways. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

Additional Toxicology Information:

Data not available.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Very toxic to aquatic life. Avoid release to the environment. Collect spillage. Dispose of contents in accordance with local, state, federal and international regulations. Very toxic to aquatic life with long lasting effects. Avoid release to the environment. Collect spillage. Dispose of contents in accordance with local, state, federal and international regulations.

12.2. Persistence and Degradability

Data not available.

12.3. Bioaccumulative Potential

Data not available.

12.4. Mobility in Soil

Data not available.

12.5. Other Adverse Ecological Effects

Data not available.

SECTION 13: Disposal Considerations

13.1. Waste Treatment Methods

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dispose of contaminated packaging as unused product.

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SECTION 14: Transportation Information

14.1. Transportation by Land - Department of Transportation (DOT, United States of America)

Sizes: 2 mL, 5 mL, 30 mL, 120 mL, 480 mL
UN Number: UN2319
Proper Shipping Name: Terpene hydrocarbons, n.o.s.
Hazard Class: 3
Packing Group: III
Hazard Label(s):



14.2. Transportation by Air - International Air Transport Association (IATA)

Sizes: 2 mL, 5 mL, 30 mL, 120 mL, 480 mL
UN Number: UN2319
Proper Shipping Name: Terpene hydrocarbons, n.o.s.
Hazard Class: 3
Packing Group: III
Hazard Label(s):



14.3.2 Transportation of Dangerous Goods (TDG, Canada)

Sizes: 2 mL, 5 mL, 30 mL, 120 mL, 480 mL
UN Number: UN2319
Proper Shipping Name: Terpene hydrocarbons, n.o.s.
Hazard Class: 3
Packing Group: III
Hazard Label(s):



SECTION 15: Regulatory Information

15.1. Occupational Safety and Health Administration (OSHA) Hazards

Not listed.

15.2. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

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Not listed.

15.3. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Not listed.

15.4. Superfund Amendments and Reauthorization Act (SARA) 313 Toxic Release Inventory (TRI)

Not listed.

15.5. Massachusetts Right-to-Know Substance List

Ethyl butyrate (CAS # 105-54-4): Present

15.6. Pennsylvania Right-to-Know Hazardous Substances

Citronellal (CAS # 106-23-0): Present

Ethyl butyrate (CAS # 105-54-4): Present

15.7. New Jersey Worker and Community Right-to-Know Components

Limonene (CAS # 5989-27-5): sn 0792

Citronellal (CAS # 106-23-0): Present

Ethyl butyrate (CAS # 105-54-4): corrosive; flammable - third degree

Ethyl butyrate (CAS # 105-54-4): sn 0862

15.8. California Proposition 65

Not Listed.

15.9. Canada Domestic Substances List / Non-Domestic Substances Lists (DSL/NDSL)

Limonene (CAS # 5989-27-5): Present (DSL)

Citral (CAS # 5392-40-5): Present (DSL)

Citronellal (CAS # 106-23-0): Present (DSL)

Alpha Terpineol (CAS # 98-55-5): Present (DSL)

Ethyl butyrate (CAS # 105-54-4): Present (DSL)

15.10. United States of America Toxic Substances Control Act (TSCA) List

Limonene (CAS # 5989-27-5): Present

Citral (CAS # 5392-40-5): Present

Citronellal (CAS # 106-23-0): Present

Alpha Terpineol (CAS # 98-55-5): Present

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Ethyl butyrate (CAS # 105-54-4): Present

15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Limonene (CAS # 5989-27-5): 205-341-0

Limonene (CAS # 5989-27-5): 227-813-5

Citral (CAS # 5392-40-5): 226-394-6

Citronellal (CAS # 106-23-0): 203-376-6

Alpha Terpineol (CAS # 98-55-5): 202-680-6

Alpha Terpineol (CAS # 98-55-5): 219-448-5

Ethyl butyrate (CAS # 105-54-4): 203-306-4

SECTION 16: Other Information

16.1. Previous Revisions

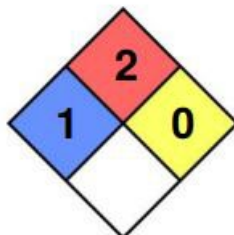
Previous revisions of this document are no longer valid.

16.2. Miscellaneous Hazard Classes

Canadian Carcinogenicity Hazard Class: Not Applicable.
Physical Hazards Not Otherwise Classified (PHNOC): Not Applicable.
Health Hazards Not Otherwise Classified (HHNOC): Not Applicable.
Biohazardous Infectious Materials Hazard Class: Not Applicable.

16.3. National Fire Protection Association (NFPA) Rating

Health: 1
Flammability: 2
Reactivity: 0
Special Hazard:



16.4. Document Revision

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Third-Party Audited and Certified ISO 9001:2015 & FSSC 22000

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Last Revision Date: 2023-01-04

DISCLAIMER

WARNING

True Terpenes 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 stay current with respect to applicable laws and regulatory investigations and findings, and to ensure safe conditions for use, 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 knowledge and experience currently available. To date, True Terpenes has not received any evidence confirming that this product has caused any adverse health consequences. 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 handling, use, processing, storage, transportation, and disposal. It should not be considered as a guarantee or quality specification. True Terpenes has not evaluated this product for safe use in e-cigarettes or any vaping application where the product(s) is/are intentionally vaporized and inhaled. True Terpenes has performed no testing on these products in e-cig/vaping applications. Applying heat to a compound or mixture of compounds may promote New Product formation by thermal degradation. New Products could include harmful or potentially harmful compounds such as aldehydes, ketones, quinones, organic acids, and aromatic hydrocarbons (including benzene). 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 handling, use, processing, storage, transportation, and 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 True Terpenes' knowledge-based upon current information as of the publish 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 uses, 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.