

Revision Date: 07.01.2026 | Version: 1.0

1. Identification of the Substance/Mixture and of the Company

1.1 Product Identifier

Product Name: Black Pepper Supercritical CO₂ Extract (25% Piperine)

Item Code: AF-PRNG1TSF

CAS No.: 8006-82-4 (Pepper, black, ext.)

EC No.: 284-524-7

REACH Registration: Exempt (natural complex substance)

1.2 Relevant Identified Uses and Uses Advised Against

Identified Uses Food ingredient, dietary supplement, flavoring agent, cosmetic ingredient.

Uses Advised Against Not for direct consumption. For use in formulated products only.

1.3 Details of the Supplier of the Safety Data Sheet

AltraFlora Natural Botanicals Inc. (Tax ID: 0650832816)

Zafer Mah., 1033 sokak, No: 16/A, Merkezefendi / Denizli, TURKEY

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1.4 Emergency Telephone Number

Emergency Contact: +90 538 051 7405 (24h)

2. Hazards Identification

2.1 Classification of the Substance or Mixture

Classification according to Regulation (EC) No 1272/2008 (CLP):

Hazard Class	Category	Hazard Statement
Aspiration hazard	1	H304 - May be fatal if swallowed and enters airways
Skin irritation	2	H315 - Causes skin irritation
Skin sensitization	1	H317 - May cause an allergic skin reaction
Hazardous to aquatic environment (acute)	1	H400 - Very toxic to aquatic life
Hazardous to aquatic environment (chronic)	1	H410 - Very toxic to aquatic life with long lasting effects

2.2 Label Elements

Signal Word: Danger

GHS Pictograms: GHS07 (Exclamation mark), GHS08 (Health hazard), GHS09 (Environment)

Hazard Statements:

H304 - May be fatal if swallowed and enters airways.

H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction.

H410 - Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.

P272 - Contaminated work clothing should not be allowed out of the workplace.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.

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

P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.

P362+P364 - Take off contaminated clothing and wash it before reuse.

P391 - Collect spillage.

P501 - Dispose of contents/container in accordance with local regulations.

2.3 Other Hazards

The substance does not contain components considered to have endocrine disrupting properties according to Article 57(f) of REACH or Commission Regulation (EU) 2017/2100 at levels of 0.1% or more.

PBT/vPvB: Not classified as PBT or vPvB substance.

3. Composition/Information on Ingredients

3.1 Substance

Chemical Name: Black Pepper Oleoresin (Supercritical CO₂ Extract)

Botanical Name: Piper nigrum L.

Plant Part: Dried fruits (peppercorns)

Extraction Method: Supercritical fluid extraction (CO₂)

Composition:

Component	CAS No.	EC No.	Content	Classification (CLP)
Piperine	94-62-2	202-348-0	25 ± 0.5%	Eye Irrit. 2 (H319), Skin Irrit. 2 (H315)
β-Caryophyllene	87-44-5	201-746-1	20-50%	Asp. Tox. 1 (H304), Skin Sens. 1B (H317)
Limonene	5989-27-5	205-341-0	10-20%	Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1B (H317), Asp. Tox. 1 (H304), Aquatic Acute 1 (H400)
Sabinene	3387-41-5	222-212-4	10-20%	Asp. Tox. 1 (H304)
δ-3-Carene	13466-78-9	236-719-3	10-20%	Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1A (H317), Asp. Tox. 1 (H304), Acute Tox. 4 (H332)

α -Pinene	80-56-8	201-291-9	5-10%	Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1B (H317), Asp. Tox. 1 (H304), Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410)
β -Pinene	127-91-3	204-872-5	5-10%	Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Skin Sens. 1B (H317), Asp. Tox. 1 (H304), Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410)
Myrcene	123-35-3	204-622-5	1-5%	Flam. Liq. 3 (H226), Skin Irrit. 2 (H315), Eye Irrit. 2 (H319), Asp. Tox. 1 (H304), Aquatic Acute 1 (H400)

4. First Aid Measures

4.1 Description of First Aid Measures

General Advice	Show this safety data sheet to the doctor in attendance. Remove from exposure, lie down. Keep patient warm and quiet.
Inhalation	If inhaled: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If symptoms persist, seek medical attention.
Skin Contact	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs, get medical advice/attention.
Eye Contact	Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If irritation persists, seek medical attention.
Ingestion	IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. Rinse mouth with water. Aspiration hazard - may enter lungs and cause damage.

4.2 Most Important Symptoms and Effects

Skin irritation, redness, allergic skin reaction (rash, itching). Eye irritation. If swallowed and enters airways: coughing, choking, shortness of breath, chemical pneumonitis.

4.3 Indication of Immediate Medical Attention

Treat symptomatically. In case of ingestion, aspiration into the lungs may cause chemical pneumonitis which can be fatal. Seek immediate medical attention if aspiration is suspected.

5. Firefighting Measures

Suitable Extinguishing Media	Water spray, foam, dry chemical powder, carbon dioxide (CO ₂).
Unsuitable Extinguishing Media	Direct water jet (may spread fire).
Special Hazards	Combustion may produce carbon monoxide (CO), carbon dioxide (CO ₂), and other toxic fumes. Flash point: 99°C (closed cup). Boiling point: 106°C.
Advice for Firefighters	Wear self-contained breathing apparatus and full protective clothing. Cool containers exposed to flames with water spray. Collect contaminated fire-fighting water separately.

6. Accidental Release Measures

Personal Precautions	Evacuate area. Ensure adequate ventilation. Avoid contact with skin and eyes. Wear appropriate personal protective equipment (see Section 8). Avoid breathing vapors.
Environmental Precautions	Prevent entry into drains, sewers, surface and ground water. Very toxic to aquatic organisms. Inform authorities if product enters water systems.
Containment Methods	Contain spillage with sand, earth, or inert absorbent material. Place in suitable containers for disposal.
Cleaning Methods	Absorb with inert material. Transfer to waste containers. Clean area with detergent and water. Dispose of in accordance with local regulations.

7. Handling and Storage

7.1 Precautions for Safe Handling

Avoid contact with skin, eyes, and clothing. Avoid breathing vapors/mist. Use only with adequate ventilation. Wash hands thoroughly after handling. Do not eat, drink, or smoke when handling. Keep away from heat, sparks, open flames, and hot surfaces. No smoking.

7.2 Conditions for Safe Storage

Storage Temperature	Store between 5-21°C. Store under nitrogen for extended shelf life.
Storage Conditions	Keep container tightly closed. Store in a cool, dry, well-ventilated place. Protect from direct sunlight and heat sources. Store away from oxidizing agents, strong acids, and bases.
Packaging Materials	Store in original container only. Use containers made of compatible materials (stainless steel, glass, aluminum).
Shelf Life	24 months from date of manufacture when stored properly.

8. Exposure Controls/Personal Protection

8.1 Control Parameters

No occupational exposure limits established for this substance.

8.2 Exposure Controls

Engineering Controls	Use with adequate ventilation. Local exhaust ventilation recommended for bulk handling. Eye wash stations and safety showers should be available.
Respiratory Protection	In case of insufficient ventilation, use suitable respiratory equipment. Filter type A (brown) for organic vapors with boiling point >65°C.
Hand Protection	Wear chemical resistant gloves (nitrile, neoprene). Breakthrough time >8 hours recommended.
Eye Protection	Safety glasses with side shields. Face shield for splash risk.
Skin/Body Protection	Lab coat or protective clothing. Impervious apron for large quantities.
Hygiene Measures	Wash hands before breaks and at end of workday. Do not eat, drink, or smoke during work. Remove contaminated clothing immediately.

9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Appearance	Dark yellow to greenish-brown viscous liquid/semi-solid oleoresin
Odor	Warm, spicy, pungent (characteristic of black pepper)
Odor Threshold	Not determined
pH	Not applicable (oily substance)
Melting Point	Not applicable
Boiling Point	106°C
Flash Point	99°C (closed cup)
Evaporation Rate	Not determined
Flammability	Combustible liquid
Explosive Limits	Not determined
Vapor Pressure	Not determined
Vapor Density	Not determined
Relative Density (25°C)	0.864 - 0.920 g/cm ³
Solubility (Water)	Immiscible with water, soluble in ethanol
Solubility (Ethanol)	Soluble
Partition Coefficient (log K _{ow})	Not determined
Auto-ignition Temperature	Not determined
Decomposition Temperature	Not determined
Viscosity	Semi-solid to viscous liquid at room temperature
Refractive Index (20°C)	1.479 - 1.510
Piperine Content	25 ± 0.5%

10. Stability and Reactivity

Reactivity	Avoid contact with oxidizing agents.
Chemical Stability	Stable under normal conditions. Shelf life: 24 months under recommended storage conditions.
Hazardous Reactions	No hazardous reactions when stored and handled according to instructions.
Conditions to Avoid	Heat, open flames, sparks, direct sunlight, oxidizing conditions. Avoid temperatures above 30°C for extended periods.
Incompatible Materials	Strong oxidizing agents, strong acids, strong bases.
Hazardous Decomposition Products	Carbon monoxide (CO), carbon dioxide (CO ₂) upon thermal decomposition.

11. Toxicological Information

11.1 Information on Toxicological Effects

Acute Toxicity (Oral)	LD50 (rat): >5000 mg/kg (Black pepper oil)
Acute Toxicity (Dermal)	LD50 (rabbit): >5000 mg/kg
Acute Toxicity (Inhalation)	Not classified
Skin Corrosion/Irritation	Causes skin irritation (Category 2)
Serious Eye Damage/Irritation	May cause eye irritation
Respiratory/Skin Sensitization	May cause allergic skin reaction (Category 1)
Germ Cell Mutagenicity	Not classified
Carcinogenicity	Not classified. Piperine shows anticarcinogenic properties in studies.
Reproductive Toxicity	Not classified
STOT - Single Exposure	Not classified
STOT - Repeated Exposure	Not classified
Aspiration Hazard	May be fatal if swallowed and enters airways (Category 1)

12. Ecological Information

Toxicity	Very toxic to aquatic life with long lasting effects. LC50/EC50 data not available for the mixture.
Persistence/Degradability	Expected to be readily biodegradable (natural plant extract).
Bioaccumulative Potential	No significant bioaccumulation expected.
Mobility in Soil	Low water solubility limits mobility in aqueous environments.
PBT/vPvB Assessment	Not classified as PBT or vPvB.
Other Adverse Effects	Avoid release to the environment.

13. Disposal Considerations

13.1 Waste Treatment Methods

Product Disposal	Dispose of in accordance with local, regional, and national regulations. Do not dispose into drains or water systems. Incineration at licensed facility recommended.
Contaminated Packaging	Empty containers should be disposed of at an appropriate waste facility. Do not reuse containers.
Waste Code (EU)	EWC: 02 03 99 (Wastes not otherwise specified - food preparation)

14. Transport Information

This product is classified as dangerous goods for transport due to environmental hazard.

UN Number	UN 3082
UN Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Black pepper oil)
Transport Hazard Class	9 (Miscellaneous dangerous substances)
Packing Group	III
Environmental Hazards	Marine pollutant: Yes
Special Precautions	Avoid direct sunlight and heat during transport. Keep containers upright and secured.
ADR/RID	Class 9, UN 3082, PG III, Tunnel Code (E)
IMDG	Class 9, UN 3082, PG III, Marine Pollutant
IATA	Class 9, UN 3082, PG III

15. Regulatory Information

15.1 Safety, Health, and Environmental Regulations

EU Regulations:

- Regulation (EC) No. 1907/2006 (REACH) - Exempt as natural complex substance
- Regulation (EC) No. 1272/2008 (CLP) - Classified as hazardous
- Regulation (EC) No. 1334/2008 - Approved flavoring substance
- Regulation (EC) No. 1223/2009 - Permitted cosmetic ingredient

US Regulations:

- FDA GRAS Status: Generally Recognized as Safe (21 CFR 182.20)
- FEMA GRAS Number: 2845

International:

- JECFA: Approved food flavoring (ADI not specified)
- Codex Alimentarius: Listed as food additive
- IFRA: Restricted use levels apply for some components in fragrances

15.2 Chemical Safety Assessment

A chemical safety assessment has not been carried out for this substance.

16. Other Information

Product Specifications

Botanical Source	Piper nigrum L. (Black Pepper)
Plant Part Used	Dried fruits (peppercorns)
Extraction Method	Supercritical CO ₂ extraction
Piperine Content	25 ± 0.5% (HPLC)
Country of Origin	India / Vietnam / Indonesia
Shelf Life	24 months from date of manufacture
Storage	Store at 5-21°C, under nitrogen, protected from light

Revision Information

Revision Date: 07.01.2026

Revision: Initial release

Full Text of H-Statements:

H226 - Flammable liquid and vapour

H304 - May be fatal if swallowed and enters airways

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H332 - Harmful if inhaled

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with other materials or in any process.

This product is intended for use as a food ingredient/dietary supplement component and should be used only by qualified personnel in accordance with applicable regulations.

End of Safety Data Sheet