

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : STRAWBERRY POP SOLVENT FREE TERPENE FLAVOR
Product code : TPBL326

1.2. Recommended use and restrictions on use

1.3. Supplier

EXTRACT CONSULTANTS, LLC.
TERPENES - FLAVORS - BASES
2150 INDUSTRIAL DR, NILES MI 49120
www.extractconsultants.com
INFORMATION: 1-888-541-9089

1.4. Emergency telephone number

Emergency number CHEMTREC - USA: 800-424-9300 International: +1 703-527-3887 / 1-800-424-9300
CCN: 1025270

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

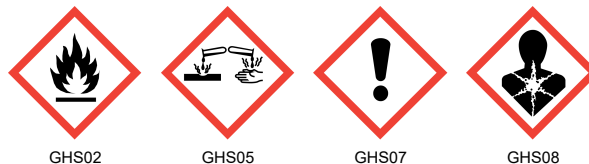
GHS US classification

| | |
|--|--|
| Flammable liquids Category 3 | Flammable liquid and vapor |
| Skin corrosion/irritation Category 2 | Causes skin irritation |
| Serious eye damage/eye irritation Category 1 | Causes serious eye damage |
| Skin sensitization, Category 1 | May cause an allergic skin reaction |
| Aspiration hazard Category 1 | May be fatal if swallowed and enters airways |

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

Flammable liquid and vapor
May be fatal if swallowed and enters airways
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye damage

Precautionary statements (GHS US) :

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash hands, forearms and face thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Immediately call a poison center or doctor.
If on skin: Wash with plenty of water.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center or doctor.

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Specific treatment (see supplemental first aid instruction on this label).
Do NOT induce vomiting.
If skin irritation occurs: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Wash contaminated clothing before reuse.
In case of fire: Use media other than water to extinguish.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | GHS US classification |
|---------------------------------------|---------------------|---------|---|
| ETHYL BUTYRATE | (CAS-No.) 105-54-4 | 10 – 25 | Flam. Liq. 3, H226 Eye Irrit. 2A, H319 |
| 3-HEXENOL | (CAS-No.) 928-96-1 | 10 – 25 | Flam. Liq. 3, H226 Eye Irrit. 2A, H319 |
| D-LIMONENE | (CAS-No.) 5989-27-5 | 5 – 10 | Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304 |
| BETA-CARYOPHYLLENE | (CAS-No.) 87-44-5 | 1 – 5 | Skin Sens. 1B, H317 Asp. Tox. 1, H304 |
| ALLYL HEXANOATE | (CAS-No.) 123-68-2 | 1 – 5 | Flam. Liq. 4, H227 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Acute Tox. 3 (Inhalation:vapour), H331 |
| GERANYL ACETATE | (CAS-No.) 105-87-3 | 1 – 5 | Skin Irrit. 2, H315 Skin Sens. 1B, H317 |
| ETHYL LACTATE | (CAS-No.) 97-64-3 | 1 – 5 | Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 |
| LINALOOL | (CAS-No.) 78-70-6 | 1 – 5 | Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1B, H317 |
| ETHYL PROPIONATE | (CAS-No.) 105-37-3 | 1 – 5 | Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2B, H320 STOT SE 3, H335 |
| VANILLIN | (CAS-No.) 121-33-5 | 1 – 5 | Eye Irrit. 2A, H319 |
| GERANIOL | (CAS-No.) 106-24-1 | 0.1 – 1 | Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 |
| CITRAL | (CAS-No.) 5392-40-5 | 0.1 – 1 | Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1, H317 STOT RE 2, H373 |
| 4-Hydroxy-2,5-dimethyl-3(2H)-furanone | (CAS-No.) 3658-77-3 | 0.1 – 1 | Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 |

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Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|---|
| First-aid measures general | : Call a physician immediately. |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. |
| First-aid measures after skin contact | : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention. |
| First-aid measures after eye contact | : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately. |
| First-aid measures after ingestion | : Do not induce vomiting. Call a physician immediately. |

4.2. Most important symptoms and effects (acute and delayed)

| | |
|-------------------------------------|---|
| Symptoms/effects after inhalation | : Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard. |
| Symptoms/effects after skin contact | : Irritation. May cause an allergic skin reaction. |
| Symptoms/effects after eye contact | : Serious damage to eyes. |
| Symptoms/effects after ingestion | : Risk of lung edema. |

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

| | |
|--------------------------------|--|
| Suitable extinguishing media | : Water spray. Dry powder. Foam. Carbon dioxide. |
| Unsuitable extinguishing media | : Do not use a heavy water stream. |

5.2. Specific hazards arising from the chemical

| | |
|------------------|-------------------------------|
| Fire hazard | : Flammable liquid and vapor. |
| Explosion hazard | : No direct explosion hazard. |
| Reactivity | : Flammable liquid and vapor. |

5.3. Special protective equipment and precautions for fire-fighters

| | |
|--------------------------------|---|
| Firefighting instructions | : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection. |
| Protection during firefighting | : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

| | |
|------------------|---|
| General measures | : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage. |
|------------------|---|

6.1.1. For non-emergency personnel

| | |
|----------------------|--|
| Protective equipment | : Wear recommended personal protective equipment. |
| Emergency procedures | : Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray. |

6.1.2. For emergency responders

| | |
|----------------------|---|
| Protective equipment | : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". |
| Emergency procedures | : Evacuate unnecessary personnel. Stop leak if safe to do so. |

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

| | |
|-------------------------|---|
| For containment | : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk. |
| Methods for cleaning up | : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters. |
| Other information | : Dispose of materials or solid residues at an authorized site. |

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6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

| | |
|-----------------------------------|---|
| Additional hazards when processed | : Not expected to present a significant hazard under anticipated conditions of normal use. |
| Precautions for safe handling | : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray. |
| Hygiene measures | : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product. |

7.2. Conditions for safe storage, including any incompatibilities

| | |
|---------------------|--|
| Technical measures | : Ground/bond container and receiving equipment. |
| Storage conditions | : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up. |
| Packaging materials | : Store always product in container of same material as original container. |

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| | |
|--|---|
| STRAWBERRY POP SOLVENT FREE TERPENE FLAVOR | |
| No additional information available | |
| 4-Hydroxy-2,5-dimethyl-3(2H)-furanone (3658-77-3) | |
| No additional information available | |
| VANILLIN (121-33-5) | |
| No additional information available | |
| GERANYL ACETATE (105-87-3) | |
| No additional information available | |
| ETHYL LACTATE (97-64-3) | |
| No additional information available | |
| ALLYL HEXANOATE (123-68-2) | |
| No additional information available | |
| ETHYL BUTYRATE (105-54-4) | |
| No additional information available | |
| ETHYL PROPIONATE (105-37-3) | |
| No additional information available | |
| BETA-CARYOPHYLLENE (87-44-5) | |
| No additional information available | |
| D-LIMONENE (5989-27-5) | |
| No additional information available | |
| GERANIOL (106-24-1) | |
| No additional information available | |
| LINALOOL (78-70-6) | |
| No additional information available | |
| CITRAL (5392-40-5) | |
| USA - ACGIH - Occupational Exposure Limits | |
| Local name | Citral |
| ACGIH OEL TWA | 5 ppm (IFV - Inhalable fraction and vapor) |
| Remark (ACGIH) | TLV® Basis: Body weight eff; URT irr; eye dam. Notations: Skin; DSEN; A4 (Not classifiable as a Human Carcinogen) |
| Regulatory reference | ACGIH 2024 |

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3-HEXENOL (928-96-1)

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Wear recommended personal protective equipment.

Hand protection:

Protective gloves

Eye protection:

Chemical goggles or safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|--|
| Physical state | : Liquid |
| Color | : COLORLESS TO YELLOW |
| Odor | : CHARACTERISTIC, MATCHING RETAINER SAMPLE |
| Odor threshold | : No data available |
| pH | : No data available |
| Melting point | : Not applicable |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : 38 °C |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Flammability | : Not applicable. |
| Vapor pressure | : No data available |
| Relative vapor density at 20°C | : No data available |
| Relative density | : 0.899 (0.889 – 0.909) |
| Solubility | : Insoluble. |
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosion limits | : No data available |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |

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9.2. Other information

Refractive index : 1.4324 (1.4224 – 1.4424)

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapor.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

4-Hydroxy-2,5-dimethyl-3(2H)-furanone (3658-77-3)

| | |
|---------------|---|
| LD50 oral rat | 2320 mg/kg body weight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Remarks on results: other: |
| ATE US (oral) | 1608 mg/kg body weight |

VANILLIN (121-33-5)

| | |
|-----------------|---|
| LD50 oral rat | 3300 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s)) |
| LD50 dermal rat | > 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s)) |
| ATE US (oral) | 3300 mg/kg body weight |
| ATE US (dermal) | 2600 mg/kg body weight |

GERANYL ACETATE (105-87-3)

| | |
|---------------|------------------------|
| LD50 oral rat | 6300 mg/kg (Rat, Oral) |
| ATE US (oral) | 6300 mg/kg body weight |

ETHYL LACTATE (97-64-3)

| | |
|---------------|------------------------|
| ATE US (oral) | 2500 mg/kg body weight |
|---------------|------------------------|

ALLYL HEXANOATE (123-68-2)

| | |
|---------------------|--|
| LD50 dermal rabbit | 820 mg/kg body weight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), 95% CL: 700 - 940 |
| ATE US (oral) | 300 mg/kg body weight |
| ATE US (dermal) | 300 mg/kg body weight |
| ATE US (gases) | 700 ppmV/4h |
| ATE US (vapors) | 3 mg/l/4h |
| ATE US (dust, mist) | 0.5 mg/l/4h |

ETHYL BUTYRATE (105-54-4)

| | |
|-----------------------------|--|
| LD50 oral rat | > 2000 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method), Remarks on results: other: |
| LD50 dermal rat | > 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Remarks on results: other: |
| LC50 Inhalation - Rat [ppm] | > 4000 ppm Animal: rat, Guideline: other:, Remarks on results: other: |

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| D-LIMONENE (5989-27-5) | |
|-------------------------------|---|
| LD50 oral rat | > 2000 mg/kg body weight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s)) |
| LD50 dermal rabbit | > 5000 mg/kg body weight (Equivalent or similar to OECD 402, 24 h, Rabbit, Read-across, Dermal, 7 day(s)) |

| GERANIOL (106-24-1) | |
|----------------------------|------------------------|
| ATE US (oral) | 3600 mg/kg body weight |

| LINALOOL (78-70-6) | |
|---------------------------|------------------------|
| ATE US (oral) | 2790 mg/kg body weight |

| CITRAL (5392-40-5) | |
|---------------------------|--|
| LD50 oral rat | ≈ 6800 mg/kg body weight Animal: rat |
| LD50 dermal rat | > 2000 mg/kg body weight Animal: rat, Remarks on results: other: |

| | |
|-----------------------------------|--|
| Skin corrosion/irritation | : Causes skin irritation. |
| Serious eye damage/irritation | : Causes serious eye damage. |
| Respiratory or skin sensitization | : May cause an allergic skin reaction. |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |

| CITRAL (5392-40-5) | |
|--|---|
| NOAEL (chronic,oral,animal/male,2 years) | 60 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Remarks on results: other: |

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

| ETHYL LACTATE (97-64-3) | |
|--------------------------------|-----------------------------------|
| STOT-single exposure | May cause respiratory irritation. |

| ETHYL PROPIONATE (105-37-3) | |
|------------------------------------|-----------------------------------|
| STOT-single exposure | May cause respiratory irritation. |

STOT-repeated exposure : Not classified

| CITRAL (5392-40-5) | |
|---|---|
| LOAEC (inhalation,rat,gas,90 days) | 68 ppm Animal: rat, Animal sex: female |
| NOAEL (oral,rat,90 days) | 100 mg/kg body weight Animal: rat, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| NOAEC (inhalation,rat,gas,90 days) | 34 ppm Animal: rat, Animal sex: female |
| NOAEL (subchronic,oral,animal/male,90 days) | 60 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| STOT-repeated exposure | May cause damage to organs through prolonged or repeated exposure. |

| | |
|-------------------------------------|---|
| Aspiration hazard | : May be fatal if swallowed and enters airways. |
| Viscosity, kinematic | : No data available |
| Symptoms/effects after inhalation | : Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard. |
| Symptoms/effects after skin contact | : Irritation. May cause an allergic skin reaction. |
| Symptoms/effects after eye contact | : Serious damage to eyes. |
| Symptoms/effects after ingestion | : Risk of lung edema. |

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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

| 4-Hydroxy-2,5-dimethyl-3(2H)-furanone (3658-77-3) | |
|--|---|
| EC50 - Crustacea [1] | 6.8 mg/l Test organisms (species): Daphnia magna |
| VANILLIN (121-33-5) | |
| LC50 - Fish [1] | 57 mg/l (Equivalent or similar to OECD 203, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value) |
| EC50 - Crustacea [1] | 36.79 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP) |
| LC50 - Fish [2] | 123 mg/l Test organisms (species): Pimephales promelas |
| ErC50 algae | 120 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP) |
| LOEC (chronic) | 10 mg/l Test organisms (species): Daphnia magna Duration: '21 d' |
| NOEC (chronic) | 5.9 mg/l Test organisms (species): Daphnia magna Duration: '21 d' |
| GERANYL ACETATE (105-87-3) | |
| LC50 - Fish [1] | 68.12 mg/l (DIN 38412: German standard methods for the examination of water, waste water and sludge, 96 h, Leuciscus idus, Static system, Fresh water, Read-across) |
| EC50 - Crustacea [1] | 14.1 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP) |
| ALLYL HEXANOATE (123-68-2) | |
| LC50 - Fish [1] | 0.117 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio) |
| EC50 - Crustacea [1] | 2 mg/l Test organisms (species): Daphnia magna |
| ETHYL BUTYRATE (105-54-4) | |
| LC50 - Fish [1] | ≥ 100 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio) |
| EC50 - Crustacea [1] | 116.6 mg/l Test organisms (species): Daphnia magna |
| NOEC (chronic) | 28833 mg/l Test organisms (species): Daphnia magna Duration: '21 d' |
| NOEC chronic fish | 1483 mg/l Test organisms (species): other: Duration: '28 d' |
| D-LIMONENE (5989-27-5) | |
| LC50 - Fish [1] | 720 µg/l (Equivalent or similar to OECD 203, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value) |
| EC50 - Crustacea [1] | 0.307 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, GLP) |
| LC50 - Fish [2] | 702 µg/l Test organisms (species): Pimephales promelas |
| EC50 - Crustacea [2] | 0.51 mg/l Test organisms (species): Daphnia magna |
| CITRAL (5392-40-5) | |
| LC50 - Fish [1] | 6.78 mg/l Test organisms (species): Leuciscus idus |
| EC50 - Crustacea [1] | 6.8 mg/l Test organisms (species): Daphnia magna |

12.2. Persistence and degradability

| VANILLIN (121-33-5) | |
|-----------------------------------|------------------------------------|
| Persistence and degradability | Readily biodegradable in water. |
| GERANYL ACETATE (105-87-3) | |
| Persistence and degradability | Readily biodegradable in water. |
| ThOD | 2.6 g O ₂ /g substance |
| D-LIMONENE (5989-27-5) | |
| Persistence and degradability | Readily biodegradable in water. |
| ThOD | 3.29 g O ₂ /g substance |

12.3. Bioaccumulative potential

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| VANILLIN (121-33-5) | |
|---|---|
| Partition coefficient n-octanol/water (Log Pow) | 1.17 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C) |
| Bioaccumulative potential | Low potential for bioaccumulation (Log Kow < 4). |

| GERANYL ACETATE (105-87-3) | |
|---|---|
| BCF - Other aquatic organisms [1] | 1500 (Estimated value) |
| Partition coefficient n-octanol/water (Log Pow) | 4.04 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method) |
| Bioaccumulative potential | Potential for bioaccumulation ($4 \leq \text{Log Kow} \leq 5$). |

| D-LIMONENE (5989-27-5) | |
|---|---|
| BCF - Fish [1] | 864.8 l/kg (BCFBAF v3.01, Pisces, QSAR, Fresh weight) |
| Partition coefficient n-octanol/water (Log Pow) | 4.38 (Experimental value, Equivalent or similar to OECD 117, 37 °C) |
| Bioaccumulative potential | Potential for bioaccumulation ($4 \leq \text{Log Kow} \leq 5$). |

12.4. Mobility in soil

| VANILLIN (121-33-5) | |
|--|-------------------------------------|
| Organic Carbon Normalized Adsorption Coefficient (Log Koc) | 3.438 (log Koc, Experimental value) |
| Ecology - soil | Low potential for mobility in soil. |

| GERANYL ACETATE (105-87-3) | |
|--|---|
| Organic Carbon Normalized Adsorption Coefficient (Log Koc) | 3.06 (log Koc, SRC PCKOCWIN v2.0, Calculated value) |
| Ecology - soil | Low potential for mobility in soil. |

| D-LIMONENE (5989-27-5) | |
|--|--|
| Surface tension | No data available in the literature |
| Organic Carbon Normalized Adsorption Coefficient (Log Koc) | 3.049 – 3.801 (log Koc, SRC PCKOCWIN v2.0, Calculated value) |
| Ecology - soil | Low potential for mobility in soil. |

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

| | |
|--|---|
| Regional waste regulation | : Disposal must be done according to official regulations. |
| Waste treatment methods | : Dispose of contents/container in accordance with licensed collector's sorting instructions. |
| Sewage disposal recommendations | : Disposal must be done according to official regulations. |
| Product/Packaging disposal recommendations | : Disposal must be done according to official regulations. |
| Additional information | : Flammable vapors may accumulate in the container. Do not re-use empty containers. |

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

| | |
|--------------------------------------|---|
| Transport document description (DOT) | : UN1197 Extracts, flavoring, liquid, 3, III |
| UN-No.(DOT) | : UN1197 |
| Proper Shipping Name (DOT) | : Extracts, flavoring, liquid |
| Class (DOT) | : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120 |
| Packing group (DOT) | : III - Minor Danger |

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Hazard labels (DOT) : 3 - Flammable liquid



DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Special Provisions (49 CFR 172.102) : B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable.

IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).

T2 - 1.5 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Emergency Response Guide (ERG) Number : 127

Other information : No supplementary information available.

Transportation of Dangerous Goods

Transport document description (TDG) : UN1197 EXTRACTS, FLAVOURING, LIQUID, 3, III

UN-No. (TDG) : UN1197

Proper Shipping Name (TDG) : EXTRACTS, FLAVOURING, LIQUID

TDG Primary Hazard Classes : 3 - Class 3 - Flammable Liquids

Packing group (TDG) : III - Minor Danger

Explosive Limit and Limited Quantity Index : 5 L

Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : 60 L

Transport by sea

Transport document description (IMDG) : UN 1197 EXTRACTS, LIQUID, 3, III

UN-No. (IMDG) : 1197

Proper Shipping Name (IMDG) : EXTRACTS, LIQUID

Class (IMDG) : 3 - Flammable liquids

Packing group (IMDG) : III - substances presenting low danger

Limited quantities (IMDG) : 5 L

Air transport

Transport document description (IATA) : UN 1197 Extracts, liquid, 3, III

UN-No. (IATA) : 1197

Proper Shipping Name (IATA) : Extracts, liquid

Class (IATA) : 3 - Flammable Liquids

Packing group (IATA) : III - Low danger

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SECTION 15: Regulatory information

15.1. US Federal regulations

GERANYL ACETATE (105-87-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

ETHYL LACTATE (97-64-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

ALLYL HEXANOATE (123-68-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

4-Hydroxy-2,5-dimethyl-3(2H)-furanone (3658-77-3)

Listed on the Canadian DSL (Domestic Substances List)

VANILLIN (121-33-5)

Listed on the Canadian DSL (Domestic Substances List)

GERANYL ACETATE (105-87-3)

Listed on the Canadian DSL (Domestic Substances List)

ETHYL LACTATE (97-64-3)

Listed on the Canadian DSL (Domestic Substances List)

ALLYL HEXANOATE (123-68-2)

Listed on the Canadian DSL (Domestic Substances List)

ETHYL BUTYRATE (105-54-4)

Listed on the Canadian DSL (Domestic Substances List)

ETHYL PROPIONATE (105-37-3)

Listed on the Canadian DSL (Domestic Substances List)

BETA-CARYOPHYLLENE (87-44-5)

Listed on the Canadian DSL (Domestic Substances List)

LINALOOL (78-70-6)

Listed on the Canadian DSL (Domestic Substances List)

CITRAL (5392-40-5)

Listed on the Canadian DSL (Domestic Substances List)

3-HEXENOL (928-96-1)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

4-Hydroxy-2,5-dimethyl-3(2H)-furanone (3658-77-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Listed on INSQ (Mexican National Inventory of Chemical Substances)

VANILLIN (121-33-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Listed on INSQ (Mexican National Inventory of Chemical Substances)

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ETHYL BUTYRATE (105-54-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

ETHYL PROPIONATE (105-37-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

BETA-CARYOPHYLLENE (87-44-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

LINALOOL (78-70-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

CITRAL (5392-40-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

3-HEXENOL (928-96-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

This product can expose you to toluene - impurity, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

 **WARNING:**

This product can expose you to benzene - impurity, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

This product can expose you to methyl eugenol, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

This product can expose you to beta-myrcene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

| Component | State or local regulations |
|-----------------------------|---|
| ETHYL LACTATE(97-64-3) | U.S. - New Jersey - Right to Know Hazardous Substance List |
| ETHYL BUTYRATE(105-54-4) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List |
| ETHYL PROPIONATE (105-37-3) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List |
| 3-HEXENOL(928-96-1) | U.S. - Pennsylvania - RTK (Right to Know) List |

SECTION 16: Other information

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Full text of H-phrases:

| | |
|------|---|
| H225 | Highly flammable liquid and vapor |
| H226 | Flammable liquid and vapor |
| H227 | Combustible liquid |
| H301 | Toxic if swallowed |
| H302 | Harmful if swallowed |
| H304 | May be fatal if swallowed and enters airways |
| H311 | Toxic in contact with skin |
| H314 | Causes severe skin burns and eye damage |
| H315 | Causes skin irritation |
| H317 | May cause an allergic skin reaction |
| H318 | Causes serious eye damage |
| H319 | Causes serious eye irritation |
| H320 | Causes eye irritation |
| H331 | Toxic if inhaled |
| H335 | May cause respiratory irritation |
| H373 | May cause damage to organs through prolonged or repeated exposure |

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.