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SAFETY DATA SHEET

In accordance with UN GHS latest edition

Product: Cranberry Sauce Flavor F00000

Version: 2

Section 1. Identification of the substance or the mixture and of the supplier

1.1 Product Identifier

Product identifier: Cranberry Sauce Flavor F00000(Contains:dl-Limonene (racemic))

Other identifiers: None

1.2 Relevant identified uses of the substance of mixture and uses advised against

Product uses: Flavours, Fragrances

1.3 Details of the supplier of the safety data sheet

| Company name: | Perfumer's Apprentice |
|-----------------------|---|
| Company address: | 170 Technology Circle Scotts Valley CA 95066 USA |
| Contact: | Elisabeth Hanson |
| E-Mail address: | regulatory@perfumersapprentice.com |
| Company phone: | (831)316-7137 |
| 1.4 Emergency telepho | one number |
| Emergency phone: | ChemTel:1(800)255-3924, 01(813)248-0585 MIS6760377 |

Section 2. Hazards identification

2.1 Classification of the substance or mixture

| Class and category of danger: | Flammable Liquid, Hazard Category 4 Skin Corrosion / Irritation Category 2 Eye Damage / Irritation Category 2A H227, Combustible liquid. H315, Causes skin irritation. H319, Causes serious eye irritation. |
|----------------------------------|--|
| 2.2 Label elements | |
| Signal word: | Warning |
| Hazard statements: | H227, Combustible liquid. H315, Causes skin irritation. H319, Causes serious eye irritation. |
| Precautionary statements: | P210, Keep away from heat, sparks, open flames and hot surfaces No smoking. P264, Wash hands and other contacted skin thoroughly after handling. P280, Wear protective gloves/eye protection/face protection. P302/352, IF ON SKIN: Wash with plenty of soap and water. P305/351/338, IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |



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| | P337/313, If eye irritation persists: Get medical advice/attention. P362, Take off contaminated clothing and wash before reuse. P332/313, If skin irritation occurs: Get medical advice/attention. P370/378, In case of fire: Use carbon dioxide, dry chemical, foam for extinction. P403/235, Store in a well-ventilated place. Keep cool. P501, Dispose of contents/container to approved disposal site, in accordance with local regulations. |
| Pictograms: | |
| 2.3 Other haza Other hazards | |
| | |

Section 3. Composition / information on ingredients

3.2 Mixtures

Contains:

| Name | CAS | % | GHS Classification |
|-----------------------|----------|------|--|
| dl-Limonene (racemic) | 138-86-3 | 1-5% | Flam. Liq. 3-Skin Irrit. 2-Skin Sens. 1B-Asp. Tox 1- Aquatic Acute 1-Aquatic Chronic 1;H226-H304-H315- H317-H410 |
| Benzyl butyrate | 103-37-7 | 1-5% | Acute Tox. 5-Skin Irrit. 3;H303-H316 |
| Isopropyl acetate | 108-21-4 | 1-5% | Flam. Liq. 2-Eye Irrit. 2A-STOT SE 3;H225-H319-H336 |
| Linalool | 78-70-6 | <1% | Flam. Liq. 4-Acute Tox. 5-Skin Irrit. 2-Eye Irrit. 2A- Aquatic Acute 3;H227-H303-H315-H319-H402 |
| Isovaleric acid | 503-74-2 | <1% | Flam. Liq. 4-Acute Tox. 5-Acute Tox. 5-Skin Corr. 1B- Eye Dam. 1;H227-H303-H313-H314 |

Substances with workplace exposure limits, not listed above:

Not Applicable

Section 4. First-aid measures

4.1 Description of first aid measures

| Inhalation: | Remove from exposure site to fresh air, keep at rest, and obtain medical attention. |
|----------------|--|
| Eye exposure: | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| Skin exposure: | IF ON SKIN: Wash with plenty of soap and water. |
| Ingestion: | Rinse mouth with water and obtain medical attention. |



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4.2 Most important symptoms and effects, both acute and delayed

Causes skin irritation.

Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed None expected, see Section 4.1 for further information.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable media: Carbon dioxide, Dry chemical, Foam.

5.2 Special hazards arising from the substance or mixture

In case of fire, may be liberated: Carbon monoxide, Unidentified organic compounds.

5.3 Advice for fire fighters:

In case of insufficient ventilation, wear suitable respiratory equipment.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Avoid inhalation. Avoid contact with skin and eyes. See protective measures under Section 7 and 8.

6.2 Environmental precautions:

Keep away from drains, surface and ground water, and soil.

6.3 Methods and material for containment and cleaning up:

Remove ignition sources. Provide adequate ventilation. Avoid excessive inhalation of vapours. Contain spillage immediately by use of sand or inert powder. Dispose of according to local regulations.

6.4 Reference to other sections:

Also refer to sections 8 and 13.

Section 7. Handling and storage

7.1 Precautions for safe handling:

Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use personal protective equipment as required. Use in accordance with good manufacturing and industrial hygiene practices. Use in areas with adequate ventilation Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities:

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Ground/bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

7.3 Specific end use(s):

Flavours, Fragrances: Use in accordance with good manufacturing and industrial hygiene practices.



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Section 8. Exposure controls/personal protection

8.1 Control parameters

Workplace exposure limits: Not Applicable

8.2 Exposure Controls

Eye / Skin Protection

Wear protective gloves/eye protection/face protection

Respiratory Protection

Under normal conditions of use and where adequate ventilation is available to prevent build up of excessive vapour, this material should not require special engineering controls. However, in conditions of high or prolonged use, or high temperature or other conditions which increase exposure, the following engineering controls can be used to minimise exposure to personnel: a) Increase ventilation of the area with local exhaust ventilation. b) Personnel can use an approved, appropriately fitted respirator with organic vapour cartridge or canisters and particulate filters. c) Use closed systems for transferring and processing this material.

Also refer to Sections 2 and 7.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

| Appearance: | Not determined |
|---|--|
| Odour: | Not determined |
| Odour threshold: | Not determined |
| pH: | Not determined |
| Melting point / freezing point: | Not determined |
| Initial boiling point / range: | Not determined |
| Flash point: | 160 °C |
| Evaporation rate: | Not determined |
| Flammability (solid, gas): | Not determined |
| Upper/lower flammability or explosive limits: | Product does not present an explosion hazard |
| Vapour pressure: | Not determined |
| Vapour density: | Not determined |
| Relative density: | Not determined |
| Solubility(ies): | Not determined |
| Partition coefficient: n-octanol/water: | Not determined |
| Auto-ignition temperature: | Not determined |
| Decomposition temperature: | Not determined |
| Viscosity: | Not determined |
| Explosive properties: | Not expected |
| Oxidising properties: | Not expected |



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9.2 Other information:

None available

Section 10. Stability and reactivity

10.1 Reactivity:

Presents no significant reactivity hazard, by itself or in contact with water.

10.2 Chemical stability:

Good stability under normal storage conditions.

10.3 Possibility of hazardous reactions:

Not expected under normal conditions of use.

10.4 Conditions to avoid:

Avoid extreme heat.

10.5 Incompatible materials:

Avoid contact with strong acids, alkalis or oxidising agents.

10.6 Hazardous decomposition products:

Not expected.

Section 11. Toxicological information

11.1 Information on toxicological effects

This mixture has not been tested as a whole for health effects. The health effects have been calculated using the methods outlined in UN GHS.

| Acute Toxicity: | Based on available data the classification criteria are not met. |
|------------------------------------|--|
| Acute Toxicity Oral | >5000 |
| Acute Toxicity Dermal | Not Applicable |
| Acute Toxicity Inhalation | Not Available |
| Skin corrosion/irritation: | Skin Corrosion / Irritation Category 2 |
| Serious eye damage/irritation: | Eye Damage / Irritation Category 2A |
| Respiratory or skin sensitisation: | Based on available data the classification criteria are not met. |
| Germ cell mutagenicity: | Based on available data the classification criteria are not met. |
| Carcinogenicity: | Based on available data the classification criteria are not met. |
| Reproductive toxicity: | Based on available data the classification criteria are not met. |
| STOT-single exposure: | Based on available data the classification criteria are not met. |
| STOT-repeated exposure: | Based on available data the classification criteria are not met. |
| Aspiration hazard: | Based on available data the classification criteria are not met. |
| | |

Information about hazardous ingredients in the mixture

| Ingredient | CAS | LD50/ATE Oral | LD50/ATE Dermal | LC50/ATE Inhalation | LC50 Route |
|-----------------|----------|---------------|--------------------|------------------------|---------------|
| Benzyl butyrate | 103-37-7 | 2500 | Not available | Not available | Not available |



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Refer to Sections 2 and 3 for additional information.

Section 12. Ecological information

| 12.1 Toxicity: | Not available |
|-------------------------------------|---------------|
| 12.2 Persistence and degradability: | Not available |
| 12.3 Bioaccumulative potential: | Not available |
| 12.4 Mobility in soil: | Not available |
| 12.5 Other adverse effects: | Not available |

Section 13. Disposal considerations

13.1 Waste treatment methods:

Dispose of in accordance with local regulations. Avoid disposing into drainage systems and into the environment. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14. Transport information

| | 14.1 UN number: | 14.2 UN Proper Shipping Name: | 14.3 Transport hazard class (es): | Sub Risk: | 14.4 Packing Group: |
|-------------------------|--------------------|-------------------------------|--|-----------|------------------------|
| UN Model Regulations | Not classified | - | - | - | - |
| IMDG | Not classified | - | - | - | - |
| ADR,RID,ADN | Not classified | - | - | - | - |
| ΙCAO ΤΙ | Not classified | - | - | - | - |

14.5 Environmental hazards:

Not environmentally hazardous for transport

14.6 Special precautions for user: None additional

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not classified

Section 15. Regulatory information

None additional

Section 16. Other information



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Concentration % Limits:

SCI 3=18.11% SS 1=44.33% EH A3=11.08% EH C3=11.08%

SCI 3=5.52 SS 1=2.26 EH A3=9.02 EH C3=9.02

Total Fractional Values:

Key to revisions:

2.1 Classification of the substance or mixture
Concentration % Limits
GHS Workplace Exposure Limits
Hazardous Ingredients declard in a GHS Product Identifier
Information about hazardous ingredients in the mixture
SECTION 3: Composition/information on ingredients
Total Fractional Values

Key to abbreviations:

| Abbreviation | Meaning |
|-------------------|---|
| Acute Tox. 5 | Acute Toxicity - Oral Category 5 |
| Acute Tox. 5 | Acute Toxicity - Dermal Category 5 |
| Aquatic Acute 1 | Hazardous to the Aquatic Environment - Acute Hazard Category 1 |
| Aquatic Acute 3 | Hazardous to the Aquatic Environment - Acute Hazard Category 3 |
| Aquatic Chronic 1 | Hazardous to the Aquatic Environment - Long-term Hazard Category 1 |
| Asp. Tox 1 | Aspiration Hazard Category 1 |
| Eye Dam. 1 | Eye Damage / Irritation Category 1 |
| Eye Irrit. 2A | Eye Damage / Irritation Category 2A |
| Flam. Liq. 2 | Flammable Liquid, Hazard Category 2 |
| Flam. Liq. 3 | Flammable Liquid, Hazard Category 3 |
| Flam. Liq. 4 | Flammable Liquid, Hazard Category 4 |
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H227 | Combustible liquid. |
| H303 | May be harmful if swallowed. |
| H304 | May be fatal if swallowed and enters airways. |
| H313 | May be harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H316 | Causes mild skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H336 | May cause drowsiness or dizziness. |
| H402 | Harmful to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| P210 | Keep away from heat, sparks, open flames and hot surfaces No smoking. |
| P233 | Keep container tightly closed. |
| P240 | Ground/bond container and receiving equipment. |



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| P241 | Use explosion-proof electrical, ventilating and lighting equipment. |
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| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P260 | Do not breathe vapour or dust. |
| P261 | Avoid breathing vapour or dust. |
| P264 | Wash hands and other contacted skin thoroughly after handling. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/eye protection/face protection. |
| P301/310 | IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. |
| P301/330/331 | If swallowed: Rinse mouth. Do not induce vomiting. |
| P302/352 | IF ON SKIN: Wash with plenty of soap and water. |
| P303/361/353 | IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P304/340 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| P305/351/338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310 | Immediately call a POISON CENTER or doctor/physician. |
| P312 | Call a POISON CENTRE or doctor/physician if you feel unwell. |
| P331 | Do not induce vomiting. |
| P332/313 | If skin irritation occurs: Get medical advice/attention. |
| P333/313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P337/313 | If eye irritation persists: Get medical advice/attention. |
| P362 | Take off contaminated clothing and wash before reuse. |
| P363 | Wash contaminated clothing before reuse. |
| P370/378 | In case of fire: Use carbon dioxide, dry chemical, foam for extinction. |
| P391 | Collect spillage. |
| P403/233/235 | Store in a well-ventilated place. Keep container tightly closed. Keep cool. |
| P403/235 | Store in a well-ventilated place. Keep cool. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container to approved disposal site, in accordance with local regulations. |
| STOT SE 3 | Specific Target Organ Toxicity (Single Exposure) Category 3 |
| Skin Corr. 1B | Skin Corrosion / Irritation Category 1B |
| Skin Irrit. 2 | Skin Corrosion / Irritation Category 2 |
| Skin Irrit. 3 | Skin Corrosion / Irritation Category 3 |
| Skin Sens. 1B | Sensitization - Skin Category 1B |

The information in this safety data sheet is to the best of our knowledge true and accurate but all data, instructions, recommendations and/or suggestions are made without guarantee.