



SAFETY DATA SHEET.

This safety data sheet complies with the requirements of:
OSHA CFR Title 29 CFR 1910.1200

Version 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Code(s) 792
Product name SOUR APPLE, NATURAL FLAVOR BLEND

UN/ID No 1197

Recommended use of the chemical and restrictions on use
Recommended Use No information available.
Uses advised against No information available

Manufacturer Apex Flavors, Inc.
 1371 Brass Mill Rd Suite A
 Belcamp, MD 21017
 410-565-6600

Emergency telephone
 Chemtrec: 1-800-424-9300 for US/ 703-527-3887 outside US

2. HAZARDS IDENTIFICATION

Classification


| | |
|-----------------------------------|-------------|
| Serious eye damage/eye irritation | Category 2 |
| Skin Sensitization | Category 1 |
| Carcinogenicity | Category 1A |
| Flammable liquids | Category 3 |

GHS Label elements, including precautionary statements

Emergency Overview

Danger

Hazard Statements
 Causes serious eye irritation
 May cause an allergic skin reaction
 May cause cancer
 Flammable liquid and vapor



Appearance clear **Physical state** liquid **Aroma** Typical of apple.

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

Specific treatment (see .? on this label)

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 advice/attention

If skin irritation or rash occurs: Get medical advice/attention

Wash contaminated clothing before reuse

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary Statements - Storage

Store locked up

Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other information**

- Toxic to aquatic life with long lasting effects
- Toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS-No | Weight % | Trade Secret |
|-----------------|-----------|----------|--------------|
| GLYCERINE | 56-81-5 | 50-90% | * |
| ETHYL ALCOHOL | 64-17-5 | 30-50% | * |
| CITRIC ACID | 77-92-9 | 1-5% | * |
| ACETIC ACID | 64-19-7 | 1-5% | * |
| PROPIONIC ACID | 79-09-4 | <1 | * |
| ACETALDEHYDE | 75-07-0 | <1 | * |
| TRANS-2-HEXENAL | 6728-26-3 | <1 | * |

4. FIRST AID MEASURES

First aid measures for different exposure routes

| | |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| General advice | Immediate medical attention is required. Show this material safety data sheet to the doctor in attendance. |
| Eye contact | Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. |
| Skin contact | Wash off immediately with plenty of water. |
| Inhalation | Move to fresh air. |
| Ingestion | Clean mouth with water and drink afterwards plenty of water. |
| Self-protection of the first aider | Remove all sources of ignition. |

Most important symptoms/effects, acute and delayed

Main Symptoms Hives.

Indication of immediate medical attention and special treatment needed, if necessary

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

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

Specific hazards arising from the chemical

No information available.

Explosion data

Sensitivity to Mechanical Impact none.

Sensitivity to Static Discharge Yes.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Methods and materials for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use only in an area containing flame proof equipment. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep tightly closed in a dry and cool place. Keep in properly labeled containers.

Incompatible products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|-----------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| ETHYL ALCOHOL 64-17-5 | STEL: 1000 ppm | TWA: 1000 ppm TWA: 1900 mg/m ³ (vacated) TWA: 1000 ppm (vacated) TWA: 1900 mg/m ³ | IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m ³ |
| GLYCERINE 56-81-5 | - | TWA: 15 mg/m ³ mist, total particulate TWA: 5 mg/m ³ mist, respirable fraction (vacated) TWA: 10 mg/m ³ mist, total particulate (vacated) TWA: 5 mg/m ³ mist, respirable fraction | |
| ACETIC ACID 64-19-7 | STEL: 15 ppm TWA: 10 ppm | TWA: 10 ppm TWA: 25 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m ³ | IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³ |
| ACETALDEHYDE 75-07-0 | Ceiling: 25 ppm | TWA: 200 ppm TWA: 360 mg/m ³ (vacated) TWA: 100 ppm (vacated) TWA: 180 mg/m ³ (vacated) STEL: 150 ppm (vacated) STEL: 270 mg/m ³ | IDLH: 2000 ppm |
| PROPIONIC ACID 79-09-4 | TWA: 10 ppm | (vacated) TWA: 10 ppm (vacated) TWA: 30 mg/m ³ | TWA: 10 ppm TWA: 30 mg/m ³ STEL: 15 ppm STEL: 45 mg/m ³ |
| ETHYL ACETATE 141-78-6 | TWA: 400 ppm | TWA: 400 ppm TWA: 1400 mg/m ³ (vacated) TWA: 400 ppm (vacated) TWA: 1400 mg/m ³ | IDLH: 2000 ppm TWA: 400 ppm TWA: 1400 mg/m ³ |
| ISOAMYL ACETATE 123-92-2 | STEL: 100 ppm TWA: 50 ppm | TWA: 100 ppm TWA: 525 mg/m ³ (vacated) TWA: 100 ppm (vacated) TWA: 525 mg/m ³ | IDLH: 1000 ppm TWA: 100 ppm TWA: 525 mg/m ³ |
| ISOAMYL ALCOHOL 123-51-3 | STEL: 125 ppm TWA: 100 ppm | TWA: 100 ppm TWA: 360 mg/m ³ (vacated) TWA: 100 ppm (vacated) TWA: 360 mg/m ³ (vacated) STEL: 125 ppm (vacated) STEL: 450 mg/m ³ | IDLH: 500 ppm TWA: 100 ppm TWA: 360 mg/m ³ STEL: 125 ppm STEL: 450 mg/m ³ |
| FURFURAL 98-01-1 | TWA: 2 ppm S* | TWA: 5 ppm TWA: 20 mg/m ³ (vacated) TWA: 2 ppm (vacated) TWA: 8 mg/m ³ (vacated) S* S* | IDLH: 100 ppm |

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Exposure controls**Engineering Controls**

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment**Eye/face protection**

If splashes are likely to occur, wear:.

Skin and body protection

Chemical resistant apron.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection must be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and chemical properties

Physical state liquid
Appearance clear
Aroma Typical of apple.
Color light yellow

| <u>Property</u> | <u>Values</u> | <u>Method</u> |
|----------------------------------------|--------------------------|--------------------------|
| pH | | No information available |
| Melting/freezing point | | FCC Method |
| Boiling point/boiling range | | FCC Method |
| Flash Point | 36 °C / 96 °F | Closed cup |
| Evaporation rate | No information available | No information available |
| Flammability (solid, gas) | No information available | No information available |
| Flammability Limits in Air | | No information available |
| Upper flammability limit | No information available | |
| lower flammability limit | No information available | |
| Vapor pressure mm Hg 20°C | | No information available |
| Vapor density | | No information available |
| Specific Gravity @ 25C | 1.0350 - 1.0550 | FCC Method |
| Specific Gravity @ 20C | 1.038 - 1.058 | FCC Method |
| Refractive Index | | FCC Method |
| Water solubility | Soluble in water | |
| Solubility in other solvents | | No information available |
| Partition coefficient: n-octanol/water | | No information available |
| Autoignition temperature | No information available | No information available |
| Decomposition temperature | | No information available |
| Viscosity, kinematic | No information available | No information available |
| Viscosity, dynamic | No information available | |
| Explosive properties | No information available | |
| Oxidizing Properties | No information available | |

Other information

Softening point No information available
Molecular Weight No information available
VOC Content(%) No information available
Density VALUE No information available
Bulk Density VALUE No information available

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Conditions to Avoid

Heat, flames and sparks.

Incompatible Materials

None known based on information supplied.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Product Information** Product does not present an acute toxicity hazard based on known information**Inhalation** There is no data available for this product.**Eye contact** There is no data available for this product.**Skin contact** There is no data available for this product.**Ingestion** There is no data available for this product.

| Chemical Name | Oral LD50 | Dermal LD50 | LC50 Inhalation |
|--------------------------|--------------------|-----------------------|-----------------------------------|
| GLYCERINE 56-81-5 | - | 10 g/kg (Rabbit) | 570 mg/m ³ (Rat) 1 h |
| ETHYL ALCOHOL 64-17-5 | 7060 mg/kg (Rat) | - | 124.7 mg/L (Rat) 4 h |
| CITRIC ACID 77-92-9 | 3000 mg/kg (Rat) | - | - |
| ACETIC ACID 64-19-7 | 3310 mg/kg (Rat) | 1060 mg/kg (Rabbit) | 11.4 mg/L (Rat) 4 h |
| ACETALDEHYDE 75-07-0 | 1930 mg/kg (Rat) | - | - |

Information on toxicological effects**Symptoms** No information available.**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Sensitization** No information available.**Germ Cell Mutagenicity** No information available.**Carcinogenicity** This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

| Chemical Name | ACGIH | IARC | NTP | OSHA |
|--------------------------|-------|---------------------|------------------------|------|
| ETHYL ALCOHOL 64-17-5 | A3 | Group 1 | Known | X |
| ACETALDEHYDE 75-07-0 | A3 | Group 1 Group 2B | Reasonably Anticipated | X |

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - *Animal Carcinogen*

IARC (International Agency for Research on Cancer)

Group 1 - *Carcinogenic to Humans*Group 2B - *Possibly Carcinogenic to Humans*

NTP (National Toxicology Program)

Known - *Known Carcinogen*Reasonably Anticipated - *Reasonably Anticipated to be a Human Carcinogen*

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - *Present***Reproductive toxicity** No information available.**Specific target organ systemic toxicity (single exposure)** No information available.**Specific target organ systemic** No information available.

toxicity (repeated exposure)**Chronic toxicity
Target Organ Effects**

May cause adverse liver effects. Contains a known or suspected reproductive toxin.
Blood, Central nervous system, Eyes, Kidney, Liver, Reproductive system, Respiratory system, Skin, Teeth.

Aspiration hazard

No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

. mg/kg mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects

0.0015% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Persistence and degradability

No information available.

Bioaccumulation

No information available.

| Chemical Name | log Pow |
|---------------------------|---------|
| GLYCERINE 56-81-5 | -1.76 |
| ETHYL ALCOHOL 64-17-5 | -0.32 |
| CITRIC ACID 77-92-9 | -1.72 |
| ACETIC ACID 64-19-7 | -0.31 |
| PROPIONIC ACID 79-09-4 | 0.33 |
| ACETALDEHYDE 75-07-0 | 0.5 |

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment**Waste Disposal Methods**

It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations.

Contaminated packaging

Do not reuse container.

US EPA Waste Number

D001 U001 U112 U125

This product contains one or more substances that are listed with the State of California as a hazardous waste.

| Chemical Name | California Hazardous Waste Status |
|--------------------------|-----------------------------------|
| ETHYL ALCOHOL 64-17-5 | Toxic Ignitable |
| ACETIC ACID 64-19-7 | Toxic Corrosive Ignitable |

| | |
|---------------------------|---------------------------------|
| PROPIONIC ACID 79-09-4 | Toxic Corrosive Ignitable |
| ACETALDEHYDE 75-07-0 | Toxic Ignitable |

14. TRANSPORT INFORMATION

DOT/ADR

UN/ID No 1197
Proper shipping name EXTRACTS, FLAVOURING, LIQUID
Hazard class 3
Packing Group III
ERG Code 127

ICAO/IATA

UN/ID No 1197
Proper shipping name EXTRACTS, FLAVOURING, LIQUID
Hazard class 3
Packing Group III

IMDG / IMO

UN/ID No 1197
Proper shipping name EXTRACTS, FLAVOURING, LIQUID
Hazard class 3
Packing Group III

15. REGULATORY INFORMATION

International Inventories

TSCA -
DSL/NDSL -
EINECS/ELINCS -
ENCS -
IECSC -
KECL -
PICCS -
AICS -

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

SARA 311/312 Hazard Categories

| | |
|------------------------------------------|-----|
| Acute Health Hazard | no |
| Chronic Health Hazard | no |
| Fire Hazard | Yes |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| ACETIC ACID 64-19-7 | 5000 lb | | | X |
| PROPIONIC ACID 79-09-4 | 5000 lb | | | X |
| ACETALDEHYDE 75-07-0 | 1000 lb | | | X |

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

| Chemical Name | Hazardous Substances RQs | Extremely Hazardous Substances RQs | RQ |
|---------------------------|--------------------------|------------------------------------|--------------------------------------------|
| ACETIC ACID 64-19-7 | 5000 lb | | RQ 5000 lb final RQ RQ 2270 kg final RQ |
| PROPIONIC ACID 79-09-4 | 5000 lb | | RQ 5000 lb final RQ RQ 2270 kg final RQ |
| ACETALDEHYDE 75-07-0 | 1000 lb | | RQ 1000 lb final RQ RQ 454 kg final RQ |

U.S. State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals:

| Chemical Name | California Prop. 65 |
|-------------------------|---------------------|
| ETHYL ALCOHOL - 64-17-5 | Carcinogen |
| ACETALDEHYDE - 75-07-0 | Carcinogen |

U.S. State Right-to-Know Regulations

| Chemical Name | New Jersey | Massachusetts | Pennsylvania |
|-----------------------------|------------|---------------|--------------|
| GLYCERINE 56-81-5 | X | X | X |
| ETHYL ALCOHOL 64-17-5 | X | X | X |
| ACETALDEHYDE 75-07-0 | X | X | X |
| PROPIONIC ACID 79-09-4 | X | X | X |
| ETHYL BUTYRATE 105-54-4 | X | X | X |
| ETHYL ACETATE 141-78-6 | X | X | X |
| ISOAMYL ACETATE 123-92-2 | X | X | X |
| ETHYL CAPROATE 123-66-0 | X | X | X |

U.S. EPA Label information**16. OTHER INFORMATION**

| | | | | |
|-------------|-----------------|----------------|-------------------|---------------------------------|
| <u>NFPA</u> | Health Hazard 2 | Flammability 3 | Instability 0 | Physical and chemical hazards * |
| <u>HMIS</u> | Health Hazard 2 | Flammability 3 | Physical Hazard 0 | Personal protection B |

Revision Date 02-Jul-2020
Revision Note No information available

Revision# 1

WARNING/DISCLAIMER:

The ingredients/flavors provided by Trilogy have not been tested, nor have they been deemed safe, for inhalation or use in electronic smoking devices, electronic nicotine delivery systems, electronic cigarettes or other similar devices (collectively "E-Cigarettes"). In supplying ingredients/flavors, Trilogy instructs, and by receiving such ingredients/flavors recipient confirms, that the ingredients/flavors will not be used in connection with the manufacture and distribution of E-Cigarettes or any component thereof.

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 a 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 any other materials or in any process, unless specified in the text.

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