



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

1.1. Product identifier

Number 422, 422TTB, 422BEV, 422PGF

Manufacturer Apex Flavors, Inc.
1361 Brass Mill Rd.
Suite E
Belcamp, MD 21017
(410) 565-6600

Product name CRANBERRY ORANGE GINGER TYPE, NATURAL FLAVOR BLEND
Pure substance/mixture Mixture

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

Recommended Use No information available

1.3. Details of the supplier of the safety data sheet

For further information, please contact:

E-mail Address cpisano@apexflavors.com

1.4. Emergency telephone number

Emergency telephone Chemtrec: 1-800-424-9300 for US/ Outside US Chemtel 813-248-0585.

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 1A
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 3
Flammable liquids	Category 2

Classification according to EU Directives 67/548/EEC or 1999/45/EC
For the full text of the R-phrases mentioned in this Section, see Section 16

R-code(s)
R52/53

2.2. Label elements



Signal Word

Danger

Hazard Statements

- H319 - Causes serious eye irritation
- H350 - May cause cancer
- H401 - Toxic to aquatic life
- H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements

- P201 - Obtain special instructions before use
- P281 - Use personal protective equipment as required
- P308 + P313 - IF exposed or concerned: Get medical advice/ attention
- P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

2.3. Other information

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	EC-No	CAS-No	Alternate CAS #	Weight %	Classification according to Directive 67/548/EEC or 1999/45/EC	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Registration Number
ETHYL ALCOHOL	200-578-6	64-17-5		90-100%	F; R11	Flam. Liq. 2 (H225) Flam. Liq. 2 (H225)	No data available
LIMONENE	227-813-5	5989-27-5		<1	R10, XI; R38, XI; R43, N; R50/53;	Aquatic Acute 1 (H400) Skin Sens. 1 (H317) Skin Irrit. 2 (H316) Asp. Tox. 1 (H304) Aquatic Chronic 1 (H410) Flam. Liq. 3 (H226)	No data available
ACETIC ACID	200-580-7	64-19-7		<1	R10 C; R35	Skin Corr. 1A (314) Eye Dam. 1 (H318) Flam. Liq. 3 (H226)	No data available
BENZYL ALCOHOL	202-859-9	100-51-6		<1	Xn; R20/22	Acute Tox. 5 (H333) Acute Tox. 4 (H302)	No data available
ISOAMYL ALCOHOL	204-633-5	123-51-3		<1	-	Flam. Liq. 3 (H226)(EFA) Acute Tox. 4 (H332)(EFA)	No data available
BENZALDEHYDE	Present	100-52-7		<1	Xn; R22	Acute Tox. 4 (H302) Aquatic Acute 2 (H401) (EFA) Eye Irrit. 1 (H319) (EFA) Skin Irrit. 3 (316)	No data available

						(EFFA) Acute Tox. 4 (H302) (EFFA) Flam. Liq. 4 (H227)(EFFA) Acute Tox. 4 (H332)(EFFA) Aquatic Acute 2 (H401) Eye Irrit. 1 (H319) Skin Irrit. 3 (H316) Acute Tox. 4 (H302) Acute Tox. 4 (H332)	
PINENES	201-291-9	80-56-8		<1	R10, XI; R43, N; R50/53, XN; R65;	Aquatic Acute 1 (H400) Skin Sens. 1 (H317) Skin Irrit. 3 (H316) Asp. Tox. 1 (H304) Aquatic Chronic 1 (H410) Acute Tox. 5 (H303) Flam. Liq. 3 (H226)	No data available
BENZYL ACETATE	Present	140-11-4		<1	-	Aquatic Acute 2 (H401) (EFFA) Skin Irrit. 3 (316) (EFFA) Acute Tox. 5 (H303)(EFFA) Flam. Liq. 4 (H227)(EFFA) Aquatic Acute 2 (H401) Skin Irrit. 3 (H316) Acute Tox. 5 (H303)	No data available
ACETOPHENONE	202-708-7	98-86-2		<1	Xn; R22 Xi; R36	Acute Tox. 4 (H302) Eye Irrit. 1 (H319) (EFFA) Acute Tox. 4 (H302) (EFFA) Eye Irrit. 2 (H319)	No data available

For the full text of the R-phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

4.1. Description of first aid measures

- Eye contact** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
- Ingestion** Clean mouth with water and drink afterwards plenty of water.
- Inhalation** Move to fresh air.

4.2. Most important symptoms and effects, both acute and delayed

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

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

Extinguishing media which shall not be used for safety reasons

No information available

5.2. Special hazards arising from the substance or mixture

Special Hazard
None

5.3. Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.

See Section 12 for additional Ecological Information

6.2. Environmental precautions

Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust)

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Ensure adequate ventilation.

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)

Exposure scenario N/A

Other Guidelines N/A

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

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

Chemical Name	European Union	The United Kingdom	France	Spain	Germany
ETHYL ALCOHOL 64-17-5		STEL: 3000 ppm STEL: 5760 mg/m ³ TWA: 1000 ppm TWA: 1920 mg/m ³	VME: 1000 ppm VME: 1900 mg/m ³ VLCT: 5000 ppm VLCT: 9500 mg/m ³	VLA-ED: 1000 ppm VLA-ED: 1910 mg/m ³	MAK: 500 ppm MAK: 960 mg/m ³ Ceiling / Peak: 1000 ppm Ceiling / Peak: 1920 mg/m ³ Skin TWA: 500 ppm TWA: 960 mg/m ³
LIMONENE 5989-27-5					MAK: 20 ppm MAK: 110 mg/m ³ Ceiling / Peak: 40 ppm Ceiling / Peak: 220 mg/m ³ TWA: 20 ppm TWA:

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					110 mg/m ³
ACETIC ACID 64-19-7	TWA 10 ppm TWA 25 mg/m ³		VLCT: 10 ppm VLCT: 25 mg/m ³	VLA-EC: 15 ppm VLA-EC: 37 mg/m ³ VLA-ED: 10 ppm VLA-ED: 25 mg/m ³	MAK: 10 ppm MAK: 25 mg/m ³ Ceiling / Peak: 20 ppm Ceiling / Peak: 50 mg/m ³ TWA: 10 ppm TWA: 25 mg/m ³
ISOAMYL ALCOHOL 123-51-3		STEL: 125 ppm STEL: 458 mg/m ³ TWA: 100 ppm TWA: 366 mg/m ³	TWA: 100 ppm TWA: 360 mg/m ³	STEL: 125 ppm STEL: 458 mg/m ³ TWA: 100 ppm TWA: 366 mg/m ³	TWA: 20 ppm TWA: 73 mg/m ³ Ceiling / Peak: 80 ppm Ceiling / Peak: 292 mg/m ³
PINENES 80-56-8				VLA-ED: 20 ppm VLA-ED: 113 mg/m ³	
BENZYL ACETATE 140-11-4				TWA: 10 ppm TWA: 62 mg/m ³	
ACETOPHENONE 98-86-2				TWA: 10 ppm TWA: 50 mg/m ³	

Chemical Name	Italy	Portugal	The Netherlands	Finland	Denmark
ETHYL ALCOHOL 64-17-5		TWA: 1000 ppm	Skin STEL: 1900 mg/m ³ TWA: 260 mg/m ³	TWA: 1000 ppm TWA: 1900 mg/m ³ STEL: 1300 ppm STEL: 2500 mg/m ³	TWA: 1000 ppm TWA: 1900 mg/m ³
LIMONENE 5989-27-5				TWA: 25 ppm TWA: 140 mg/m ³ STEL: 50 ppm STEL: 280 mg/m ³	
ACETIC ACID 64-19-7		STEL: 15 ppm TWA: 10 ppm		TWA: 5 ppm TWA: 13 mg/m ³ STEL: 10 ppm STEL: 25 mg/m ³	TWA: 10 ppm TWA: 25 mg/m ³
BENZYL ALCOHOL 100-51-6				TWA: 10 ppm TWA: 45 mg/m ³	
ISOAMYL ALCOHOL 123-51-3		STEL: 125 ppm TWA: 100 ppm		TWA: 100 ppm TWA: 370 mg/m ³ STEL: 150 ppm STEL: 550 mg/m ³	TWA: 100 ppm TWA: 360 mg/m ³
BENZALDEHYDE 100-52-7				TWA: 1 ppm TWA: 4.4 mg/m ³ STEL: 4 ppm STEL: 17.4 mg/m ³ Ceiling: 4 ppm Ceiling: 17.4 mg/m ³	
PINENES 80-56-8		TWA: 20 ppm			
BENZYL ACETATE 140-11-4		TWA: 10 ppm			TWA: 10 ppm TWA: 61 mg/m ³
ACETOPHENONE 98-86-2		TWA: 10 ppm		TWA: 5 ppm TWA: 25 mg/m ³	TWA: 10 ppm TWA: 49 mg/m ³

Chemical Name	Austria	Sweden - Occupational Exposure Limits - TLVs (LLVs)	Switzerland	Poland	Norway
ETHYL ALCOHOL 64-17-5	STEL 2000 ppm STEL 3800 mg/m ³ MAK: 1000 ppm MAK: 1900 mg/m ³	500 ppm NGV 1000 mg/m ³ NGV	STEL: 1000 ppm STEL: 1920 mg/m ³ MAK: 500 ppm MAK: 960 mg/m ³	NDS: 1900 mg/m ³	TWA: 500 ppm TWA: 950 mg/m ³ STEL: 625 ppm STEL: 1187.5 mg/m ³
LIMONENE 5989-27-5			STEL: 40 ppm STEL: 220 mg/m ³ MAK: 20 ppm MAK: 110 mg/m ³		TWA: 25 ppm TWA: 140 mg/m ³ STEL: 37.5 ppm STEL: 175 mg/m ³
ACETIC ACID 64-19-7	STEL 20 ppm STEL 50 mg/m ³ MAK: 10 ppm MAK: 25	5 ppm NGV 13 mg/m ³ NGV	STEL: 40 ppm STEL: 50 mg/m ³ MAK: 10 ppm MAK: 25	NDSch: 30 mg/m ³ NDS: 15 mg/m ³	TWA: 10 ppm TWA: 25 mg/m ³ STEL: 20 ppm STEL:

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	mg/m ³		mg/m ³		37.5 mg/m ³
BENZYL ALCOHOL 100-51-6				NDS: 240 mg/m ³	
ISOAMYL ALCOHOL 123-51-3	STEL 200 ppm STEL 720 mg/m ³ TWA: 100 ppm TWA: 360 mg/m ³		STEL: 80 ppm STEL: 292 mg/m ³ TWA: 20 ppm TWA: 73 mg/m ³	STEL: 400 mg/m ³ TWA: 200 mg/m ³	TWA: 50 ppm TWA: 180 mg/m ³ STEL: 75 ppm STEL: 225 mg/m ³
BENZALDEHYDE 100-52-7				STEL: 40 mg/m ³ TWA: 10 mg/m ³	
PINENES 80-56-8		25 ppm NGV 150 mg/m ³ NGV			TWA: 25 ppm TWA: 140 mg/m ³ Skin STEL: 37.5 ppm STEL: 175 mg/m ³
ACETOPHENONE 98-86-2				STEL: 100 mg/m ³ TWA: 50 mg/m ³	

Component	Ireland
ETHYL ALCOHOL 64-17-5 (90-100%)	TWA: 1000 ppm TWA: 1900 mg/m ³
ACETIC ACID 64-19-7 (<1)	TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³
ISOAMYL ALCOHOL 123-51-3 (<1)	TWA: 100 ppm TWA: 360 mg/m ³ STEL: 125 ppm STEL: 450 mg/m ³
ACETOPHENONE 98-86-2 (<1)	TWA: 10 ppm TWA: 49 mg/m ³

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available

8.2. Exposure controls

Engineering Controls Ensure adequate ventilation, especially in confined areas

Personal protective equipment

- Eye Protection** Tightly fitting safety goggles
- Hand Protection** Protective gloves
- Skin and body protection** Long sleeved clothing
- Respiratory protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

Environmental Exposure Controls No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	liquid	Appearance	clear
Odor	cranberry with citrus notes	Color	colorless to yellow
Property	Values	Method	
pH		No information available	
Melting/freezing point		No information available	
Boiling point/boiling range		FCC Method	
Flash Point	18 °C / 65 °F	Closed cup	
Evaporation rate		FCC Method	
Flammability (solid, gas)		No information available	
Flammability Limits in Air		No information available	
Upper flammability limit			
lower flammability limit			
Vapor pressure mm Hg 20°C		No information available	
Vapor density		No information available	
Relative density		No information available	
Specific Gravity @ 25C	0.8976 - 0.9276	FCC Method	
Specific Gravity @ 20C	0.9006 - 0.9306	FCC Method	
Refractive Index	1.3722 - 1.3922	FCC Method	
Water solubility		No information available	
Partition coefficient: n-octanol/water		No information available	
Autoignition temperature		No information available	
Decomposition temperature		No information available	
Viscosity, dynamic		No information available	
Explosive properties	No information available		
Oxidizing Properties	No information available		

9.2. Other information

VOC Content(%)	99.56495
Molecular Weight	No information available

10. STABILITY AND REACTIVITY

10.1. Reactivity

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

Heat, flames and sparks

10.5. Incompatible materials

No materials to be especially mentioned

10.6. Hazardous decomposition products

None under normal use conditions

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

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

Acute toxicity 0.198545% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document (Rev. 1, 2005):

Oral 7,226.00 mg/kg

Inhalation
Mist 20.87 mg/l

Skin corrosion/irritation No information available
Eye damage/irritation No information available
Sensitization No information available
Germ Cell Mutagenicity No information available
Carcinogenicity No information available

Specific target organ systemic toxicity (single exposure) No information available

Specific target organ systemic toxicity (repeated exposure) No information available

Target Organ Effects Blood Central nervous system Eyes Liver Reproductive system Respiratory system Skin

Aspiration hazard No information available

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
ETHYL ALCOHOL		12.0 - 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 100: 96 h Pimephales promelas mg/L LC50 static 13400 - 15100: 96 h Pimephales promelas mg/L LC50 flow-through	9268 - 14221: 48 h Daphnia magna mg/L LC50 10800: 24 h Daphnia magna mg/L EC50 2: 48 h Daphnia magna mg/L EC50 Static
LIMONENE		0.619-0.796: 96 h Pimephales promelas mg/L LC50 flow-through 35: 96 h Oncorhynchus mykiss mg/L LC50	

ACETIC ACID		75: 96 h Lepomis macrochirus mg/L LC50 static 79: 96 h Pimephales promelas mg/L LC50 static	47: 24 h Daphnia magna mg/L EC50 65: 48 h Daphnia magna mg/L EC50 Static
BENZYL ALCOHOL	35: 3 h Anabaena variabilis mg/L EC50	10: 96 h Lepomis macrochirus mg/L LC50 static 460: 96 h Pimephales promelas mg/L LC50 static	23: 48 h water flea mg/L EC50
ISOAMYL ALCOHOL	493: 72 h Desmodium subspicatus mg/L EC50 181: 96 h Desmodium subspicatus mg/L EC50	700: 96 h Salmo gairdneri mg/L LC50 static	260: 48 h Daphnia magna mg/L EC50
BENZALDEHYDE		10.6 - 11.8: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 12.69: 96 h Oncorhynchus mykiss mg/L LC50 static 0.8 - 1.44: 96 h Lepomis macrochirus mg/L LC50 flow-through 6.8 - 8.53: 96 h Pimephales promelas mg/L LC50 flow-through 7.5: 96 h Lepomis macrochirus mg/L LC50 static	50: 24 h Daphnia magna mg/L EC50
PINENES		0.28: 96 h Pimephales promelas mg/L LC50 static	41: 48 h Daphnia magna mg/L LC50
ACETOPHENONE		162: 96 h Pimephales promelas mg/L LC50 flow-through 155: 96 h Pimephales promelas mg/L LC50 static	

12.2. Persistence and degradability

No information available

12.3. Bioaccumulative potential

No information available

Chemical Name	log Pow
ETHYL ALCOHOL	-0.32
ACETIC ACID	-0.31
BENZYL ALCOHOL	1.1
ISOAMYL ALCOHOL	1.28
BENZALDEHYDE	1.48
PINENES	4.1
BENZYL ACETATE	1.96
ACETOPHENONE	1.73

12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal

14. TRANSPORT INFORMATION

DOT

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

IMDG / IMO

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

ICAO/IATA

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

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

WGK Classification

Chemical Name	Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes
ETHYL ALCOHOL 64-17-5	Hazard Class 1
ACETIC ACID 64-19-7	Hazard Class 1
BENZYL ALCOHOL 100-51-6	Hazard Class 1
ISOAMYL ALCOHOL 123-51-3	Hazard Class 1
BENZALDEHYDE 100-52-7	Hazard Class 2
ACETOPHENONE 98-86-2	Hazard Class 1

International Inventories

All of the components in the product are on the following Inventory lists: No information available.

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

Legend

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

IECSC - China Inventory of Existing Chemical Substances
AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

15.2. Chemical safety assessment

16. OTHER INFORMATION

Risk Combination Phrases

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R36/38 - Irritating to eyes and skin
R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Full text of H-Statements referred to under sections 2 and 3

H333 - May be harmful if inhaled H302 - Harmful if swallowed H401 - Toxic to aquatic life H319 - Causes serious eye irritation H227 - Combustible liquid H332 - Harmful if inhaled H316 - Causes mild skin irritation H226 - Flammable liquid and vapor H303 - May be harmful if swallowed H400 - Very toxic to aquatic life H317 - May cause an allergic skin reaction H304 - May be fatal if swallowed and enters airways H410 - Very toxic to aquatic life with long lasting effects H225 - Highly flammable liquid and vapor H318 - Causes serious eye damage

Revision Date	12-Aug-2016
Revision Note	Not applicable.
Revision#	1

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

WARNING/DISCLAIMER:

Our ingredients have not been tested, nor have they been determined safe, for inhalation or use in any electronic smoking devices, electronic nicotine delivery systems, electronic cigarettes, or other similar devices (collectively "E-Cigarettes") or in any E-Liquids used with E-Cigarettes. By receiving Apex Flavors, Inc ingredients, the recipient confirms that they will not use these ingredients in connection with the manufacture and distribution of E-Cigarettes, E-Liquids or any component thereof. WE DISCLAIM, TO THE FULLEST EXTENT PERMITTED BY LAW, ALL WARRANTIES, EXPRESS OR IMPLIED, and disclaim all liability in connection with the use of our ingredients in connection with E-Cigarettes and E-Liquids. All such risks are assumed by you and the user.

Disclaimer

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