



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

1.1. Product identifier

Number 526PGF(T)

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

Product name RASPBERRY TYPE, NATURAL FLAVOR BLEND (Propylene Glycol Free)
Pure substance/mixture Mixture

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

Recommended Use Not for direct consumption

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

Flammable liquids	Category 2
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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

Symbol(s)
Not dangerous

2.2. Label elements



Precautionary Statements

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		50-90%	F; R11	Flam. Liq. 2 (H225) Eye Irrit. 1 (H319)	No data available
triethyl citrate	201-070-7	77-93-0		1-5%	-	No data available	No data available
2-Butanone, 4-(4-hydroxyphenyl)-	Present	5471-51-2		<1	-	Acute Tox. 4 (H302) (EFFA)	No data available
VANILLIN	Present	121-33-5		<1	-	Eye Irrit. 1 (H319) (EFFA) Acute Tox. 5 (H303)(EFFA) Eye Irrit. 1 (H319) Acute Tox. 5 (H303)	No data available
ETHYL ACETATE	Present	141-78-6		<1	F; R11 Xi; R36 R66 R67	Eye Irrit. 1 (H319) (EFFA) Flam. Liq. 2 (H225) (EFFA) Eye Irrit. 1 (H319) (EUH066) Flam. Liq. 2 (H225) STOT SE 3 (H336) Eye Irrit. 2 (H319)	No data available
PROPYLENE GLYCOL	200-338-0	57-55-6		<1	-	No data available	No data available
ETHYL BUTYRATE	203-306-4	105-54-4		<1	-	Aquatic Acute 2 (H401) (EFFA) Skin Irrit. 3 (316) (EFFA) Flam. Liq. 3 (H226)(EFFA)	No data available
MALTOL	204-271-8	118-71-8		<1	-	Skin Irrit. 3 (316) (EFFA) Acute Tox. 5 (H303)(EFFA)	No data available
CIS-3-HEXENOL	213-192-8	928-96-1		<1	-	Flam. Liq. 3 (H226)(EFFA)	No data available
Ethyl 2-methylbutyrate	231-225-4	7452-79-1		<1	-	Flam. Liq. 3 (H226)(EFFA)	No data available
2-METHYLBUTYRIC ACID	204-145-2	116-53-0		<1	-	Skin Corr. 1C (314) (EFFA) Eye Dam. 1 (H318) (EFFA) Acute Tox. 4 (H302) (EFFA) Acute Tox. 4 (H312)(EFFA) Flam. Liq. 4 (H227)(EFFA)	No data available
TRANS-2-HEXENAL	229-778-1	6728-26-3		<1	-	Aquatic Acute 2 (H401) (EFFA) Skin Sens. 1 (H317) (EFFA) Skin Irrit. 3 (316) (EFFA) Aquatic Chronic 2 (H411) (EFFA) Acute Tox. 4 (H302) (EFFA) Acute Tox. 3 (H311)(EFFA) Flam. Liq. 3 (H226)(EFFA)	No data available
STRAWBERRY FURANONE	222-908-8	3658-77-3		<1	-	Acute Tox. 4 (H302) (EFFA)	No data available
ISOBUTYL ACETATE	Present	110-19-0		<1	F; R11 R66	Aquatic Acute 3 (H402) (EFFA) Flam. Liq. 2 (H225) (EFFA) (EUH066) Flam. Liq. 2 (H225)	No data available
DIMETHYL SULFIDE	200-846-2	75-18-3		<1	-	Skin Irrit. 3 (316) (EFFA) Acute Tox. 3 (H301) (EFFA) Flam. Liq. 2 (H225) (EFFA)	No data available
2-Methylheptenone	Present	110-93-0		<1	-	Aquatic Acute 3 (H402) (EFFA) Skin Irrit. 3 (316)	No data available

						(EFA) Acute Tox. 5 (H303)(EFA) Flam. Liq. 3 (H226)(EFA)	
CIS-3-HEXENYL ACETATE	222-960-1	3681-71-8		<1	-	Skin Irrit. 3 (316) (EFA) Flam. Liq. 3 (H226)(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) (EFA) Acute Tox. 4 (H302) (EFA) Flam. Liq. 4 (H227)(EFA) Acute Tox. 4 (H332)(EFA) Aquatic Acute 2 (H401) Eye Irrit. 1 (H319) Skin Irrit. 3 (H316) Acute Tox. 4 (H302) Acute Tox. 4 (H332)	No data available
ANISYL ACETONE	Present	104-20-1		<1	-	No data available	No data available
ETHYL ISOVALERATE	Present	108-64-5		<1	-	Skin Irrit. 2 (315) (EFA) Flam. Liq. 3 (H226)(EFA)	No data available
Hexenal (Aldehyde C-6)	200-624-5	66-25-1		<1	-	Eye Irrit. 1 (H319) (EFA) Skin Irrit. 3 (316) (EFA) Flam. Liq. 3 (H226)(EFA)	No data available
LINALOOL	201-134-4	78-70-6		<1	XI; R38	Aquatic Acute 3 (H402) Skin Irrit. 2 (H315) Acute Tox. 5 (H303) Flam. Liq. 4 (H227)	No data available
EUGENOL	202-589-1	97-53-0		<1	XI; R36, XI; R43;	Aquatic Acute 2 (H401) Skin Sens. 1 (H317) Eye Irrit. 1 (H319) Skin Irrit. 3 (H316) Acute Tox. 5 (H303)	No data available
CITRONELLOL	203-375-0	106-22-9		<1	XI; R38, XI; R43, N; R51/53;	Aquatic Acute 3 (H402) Skin Sens. 1 (H317) Skin Irrit. 2 (H315) Acute Tox. 5 (H303) Acute Tox. 5 (H313) Eye Irrit. 1 (H319)	No data available
GERANIOL	203-377-1	106-24-1		<1	XI; R38, XI; R41, XI; R43;	Aquatic Acute 3 (H402) Skin Sens. 1 (H317) Eye Dam. 1 (H318) Skin Irrit. 2 (H315) Acute Tox. 5 (H303)	No data available
B-IONONE	201-224-3	79-77-6		<1	N; R51/53;	Aquatic Acute 2 (H401) Skin Irrit. 3 (H316) Aquatic Chronic 2 (H411)	No data available
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. 1 (H315) Asp. Tox. 1 (H304) Aquatic Chronic 1 (H410) Acute Tox. 5 (H303) Flam. Liq. 3 (H226)	No data available
1-OCTEN-3-OL	222-226-0	3391-86-4		<1	XN; R20/22, XI; R36/38, N; R50; XN; R20/22, XI; R36/38, N; R50;	Aquatic Acute 1 (H400) Eye Irrit. 1 (H319) Skin Irrit. 2 (H315) Acute Tox. 4 (H302) Acute Tox. 5 (H313) Flam. Liq. 4 (H227) Acute Tox. 4 (H332)	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. 1 (H315) Asp. Tox. 1 (H304) Aquatic Chronic 1 (H410) Flam. Liq. 3 (H226)	No data available
PHENYL ETHYL ALC	200-456-2	60-12-8		<1	XI; R36;	Eye Irrit. 1 (H319)	No data available

CITRAL	226-394-6	5392-40-5		<1	XI; R38, XI; R43;	Acute Tox. 5 (H303) Aquatic Acute 2 (H401) Sens. 1 (H317) Skin Irrit. 2 (H315) Acute Tox. 5 (H313) Flam. Liq. 4 (H227)	No data available
METHYL EUGENOL	202-223-0	93-15-2		<1	XN; R22, CARC.CAT.3; R40, N; R51/53, MUTA.CAT.3; R68;	Aquatic Acute 2 (H401) Carc. 2 (H351) Muta. 2 (H341) Acute Tox. 4 (H302)	No data available
BENZONITRILE	202-855-7	100-47-0		NF	XN; R21/22;	Acute Tox. 4 (H302) Acute Tox. 4 (H312)	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
ETHYL ACETATE 141-78-6		STEL: 400 ppm TWA: 200 ppm	TWA: 400 ppm TWA: 1400 mg/m ³	TWA: 400 ppm TWA: 1460 mg/m ³	TWA: 400 ppm TWA: 1500 mg/m ³ Ceiling / Peak: 800 ppm Ceiling / Peak: 3000 mg/m ³
PROPYLENE GLYCOL 57-55-6		STEL: 450 ppm STEL: 1422 mg/m ³ STEL: 30 mg/m ³ TWA: 150 ppm TWA: 474 mg/m ³ TWA: 10 mg/m ³			
ISOBUTYL ACETATE 110-19-0		STEL: 187 ppm STEL: 903 mg/m ³ TWA: 150 ppm TWA: 724 mg/m ³	TWA: 150 ppm TWA: 710 mg/m ³ STEL: 200 ppm STEL: 940 mg/m ³	TWA: 150 ppm TWA: 724 mg/m ³	TWA: 100 ppm TWA: 480 mg/m ³ Ceiling / Peak: 200 ppm Ceiling / Peak: 960 mg/m ³ TWA: 62 ppm TWA: 300 mg/m ³
DIMETHYL SULFIDE 75-18-3				VLA-ED: 10 ppm	

PINENES 80-56-8				VLA-ED: 20 ppm VLA-ED: 113 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: 110 mg/m ³
PHENYL ETHYL ALC 60-12-8					Skin
BENZONITRILE 100-47-0		TWA: 5 mg/m ³ Skin	VME: 5 mg/m ³		MAK: 2 mg/m ³ Ceiling / Peak: 2 mg/m ³ Skin

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
ETHYL ACETATE 141-78-6		TWA: 400 ppm		TWA: 300 ppm TWA: 1100 mg/m ³ STEL: 500 ppm STEL: 1800 mg/m ³	TWA: 150 ppm TWA: 540 mg/m ³
ISOBUTYL ACETATE 110-19-0		TWA: 150 ppm		TWA: 150 ppm TWA: 720 mg/m ³ STEL: 200 ppm STEL: 960 mg/m ³	TWA: 150 ppm TWA: 710 mg/m ³
DIMETHYL SULFIDE 75-18-3		TWA: 10 ppm			
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	
Hexenal (Aldehyde C-6) 66-25-1				STEL: 10 ppm STEL: 42 mg/m ³	
PINENES 80-56-8		TWA: 20 ppm			
LIMONENE 5989-27-5				TWA: 25 ppm TWA: 140 mg/m ³ STEL: 50 ppm STEL: 280 mg/m ³	
BENZONITRILE 100-47-0			Skin STEL: 10 mg/m ³ TWA: 1 mg/m ³	TWA: 5 mg/m ³ STEL: 10 mg/m ³ Skin	

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
ETHYL ACETATE 141-78-6	STEL 600 ppm STEL 2100 mg/m ³ TWA: 300 ppm TWA: 1050 mg/m ³	150 ppm NGV 500 mg/m ³ NGV	STEL: 800 ppm STEL: 2800 mg/m ³ TWA: 400 ppm TWA: 1400 mg/m ³	STEL: 600 mg/m ³ TWA: 200 mg/m ³	TWA: 150 ppm TWA: 550 mg/m ³ STEL: 187.5 ppm STEL: 687.5 mg/m ³
PROPYLENE GLYCOL 57-55-6					TWA: 25 ppm TWA: 79 mg/m ³ STEL: 37.5 ppm STEL: 118.5 mg/m ³
ISOBUTYL ACETATE 110-19-0	STEL 100 ppm STEL 480 mg/m ³	100 ppm NGV 500 mg/m ³ NGV	STEL: 200 ppm STEL: 960 mg/m ³	STEL: 400 mg/m ³ TWA: 200 mg/m ³	

	TWA: 100 ppm TWA: 480 mg/m ³ Ceiling 100 ppm Ceiling 480 mg/m ³		TWA: 100 ppm TWA: 480 mg/m ³		
DIMETHYL SULFIDE 75-18-3		1 ppm NGV			
BENZALDEHYDE 100-52-7				STEL: 40 mg/m ³ TWA: 10 mg/m ³	
Hexenal (Aldehyde C-6) 66-25-1				NDSch: 80 mg/m ³ NDS: 40 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
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
BENZONITRILE 100-47-0					TWA: 5 mg/m ³ Skin STEL: 10 mg/m ³

Component	Ireland
ETHYL ALCOHOL 64-17-5 (50-90%)	TWA: 1000 ppm TWA: 1900 mg/m ³
ETHYL ACETATE 141-78-6 (<1)	TWA: 200 ppm STEL: 400 ppm
PROPYLENE GLYCOL 57-55-6 (<1)	TWA: 150 ppm TWA: 470 mg/m ³ TWA: 10 mg/m ³
ISOBUTYL ACETATE 110-19-0 (<1)	TWA: 150 ppm TWA: 700 mg/m ³ STEL: 187 ppm STEL: 875 mg/m ³
DIMETHYL SULFIDE 75-18-3 (<1)	TWA: 20 ppm
BENZONITRILE 100-47-0 (NF)	TWA: 5 mg/m ³ Skin

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	raspberry	Color	colorless
Property	Values	Method	
pH		No information available	
Melting/freezing point		No information available	
Boiling point/boiling range		FCC Method	
Flash Point	17 °C / 62 °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	0.8041 - 0.8341	FCC Method	
Specific Gravity @ 20C	0.8071 - 0.8371	FCC Method	
Refractive Index	1.3534 - 1.3834	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(%)	66.32653
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

mg/kg

Inhalation

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 Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants

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
VANILLIN		53 - 61.3: 96 h Pimephales promelas mg/L LC50 flow-through 88: 96 h Pimephales promelas mg/L LC50 static 57: 96 h Pimephales promelas mg/L LC50 semi-static	180: 24 h Daphnia magna mg/L EC50
ETHYL ACETATE	3300: 48 h Desmodesmus subspicatus mg/L EC50	220 - 250: 96 h Pimephales promelas mg/L LC50 flow-through 484: 96 h Oncorhynchus mykiss	560: 48 h Daphnia magna mg/L EC50 Static

		mg/L LC50 flow-through 352 - 500: 96 h Oncorhynchus mykiss mg/L LC50 semi-static	
PROPYLENE GLYCOL	19000: 96 h Pseudokirchneriella subcapitata mg/L EC50	51600: 96 h Oncorhynchus mykiss mg/L LC50 static 41 - 47: 96 h Oncorhynchus mykiss mL/L LC50 static 51400: 96 h Pimephales promelas mg/L LC50 static 710: 96 h Pimephales promelas mg/L LC50	10000: 24 h Daphnia magna mg/L EC50 1000: 48 h Daphnia magna mg/L EC50 Static
CIS-3-HEXENOL		352-412: 96 h Pimephales promelas mg/L LC50 flow-through	
ISOBUTYL ACETATE		101: 48 h Leuciscus idus melanotus mg/L LC50 static 101 - 123: 48 h Leuciscus idus melanotus mg/L LC50 flow-through	168: 24 h Daphnia magna mg/L EC50
DIMETHYL SULFIDE			23: 48 h Daphnia pulex mg/L EC50
2-Methylheptenone	191: 72 h Desmodesmus subspicatus mg/L EC50 101: 96 h Desmodesmus subspicatus mg/L EC50	83.3 - 88.2: 96 h Pimephales promelas mg/L LC50 flow-through	129: 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
Hexenal (Aldehyde C-6)		12-16.5: 96 h Pimephales promelas mg/L LC50 flow-through	
LINALOOL	88.3: 96 h Desmodesmus subspicatus mg/L EC50	22-46: 96 h Leuciscus idus mg/L LC50 static	20: 48 h Daphnia magna mg/L EC50
B-IONONE	12.2: 96 h Desmodesmus subspicatus mg/L EC50 20.9: 72 h Desmodesmus subspicatus mg/L EC50	4.6: 96 h Leuciscus idus mg/L LC50 4.75-5.44: 96 h Pimephales promelas mg/L LC50 flow-through	1: 48 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
LIMONENE		0.619-0.796: 96 h Pimephales promelas mg/L LC50 flow-through 35: 96 h Oncorhynchus mykiss mg/L LC50	
PHENYL ETHYL ALC	490: 72 h Desmodesmus subspicatus mg/L EC50	220-460: 96 h Leuciscus idus mg/L LC50 static	287.17: 48 h Daphnia magna mg/L EC50
CITRAL	16: 72 h Desmodesmus subspicatus mg/L EC50 19: 96 h Desmodesmus subspicatus mg/L EC50	4.6-10: 96 h Leuciscus idus mg/L LC50 static	7: 48 h Daphnia magna mg/L EC50
BENZONITRILE	231: 6 h Chlorella vulgaris mg/L EC50	130: 96 h Brachydanio rerio mg/L LC50 400: 96 h Poecilia reticulata mg/L LC50 static 64: 96 h Pimephales promelas mg/L LC50 78: 96 h Lepomis macrochirus mg/L LC50 static 78: 96 h Pimephales promelas mg/L LC50 static	122: 24 h Daphnia magna mg/L EC50

12.2. Persistence and degradability

No information available

12.3. Bioaccumulative potential

No information available

Chemical Name	log Pow
ETHYL ALCOHOL	-0.32

VANILLIN	1.23
ETHYL ACETATE	0.6
ISOBUTYL ACETATE	1.72
2-Methylheptenone	2.07
BENZALDEHYDE	1.48
LINALOOL	3.1
B-IONONE	4
PINENES	4.1
PHENYL ETHYL ALC	1.38
CITRAL	2.76
BENZONITRILE	1.5

12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment**12.6. Other adverse effects**

Endocrine Disruptor Information	.? is a suspected endocrine disruptor		
Chemical Name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
STRAWBERRY FURANONE	Group III Chemical		

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/ADR**

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

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
ETHYL ACETATE 141-78-6	Hazard Class 1
PROPYLENE GLYCOL 57-55-6	Hazard Class 1
ETHYL BUTYRATE 105-54-4	Hazard Class 1
ISOBUTYL ACETATE 110-19-0	Hazard Class 1
2-Methylheptenone 110-93-0	Hazard Class 1
BENZALDEHYDE 100-52-7	Hazard Class 2
Hexenal (Aldehyde C-6) 66-25-1	Hazard Class 1
LINALOOL 78-70-6	Hazard Class 1
CITRONELLOL 106-22-9	Hazard Class 1
PHENYL ETHYL ALC 60-12-8	Hazard Class 1
CITRAL 5392-40-5	Hazard Class 1
BENZONITRILE 100-47-0	Hazard Class 2

International Inventories

All of the components in the product are on the following Inventory lists: United States of America (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), China (IECSC), Japan (ENCS), Philippines (PICCS).

TSCA	Complies
EINECS/ELINCS	Complies
DSL/NDSL	Complies
PICCS	Complies
ENCS	Complies
IECSC	Complies
AICS	Complies
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**

Revision Date	29-Jan-2018
Revision Note	Not applicable.

_ Revision#

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

WARNING/DISCLAIMER:

The ingredients/flavors provided by Apex 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, Apex 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

Food ingredients that are safe to be consumed in food products may pose hazards if not handled properly. This product is intended to be used in food products and, not intended to be consumed in its present form. The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.