APEX FLAVORS, INC.

SAFETY DATA SHEET.

This safety data sheet complies with the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision Date 20-Sep-2019 **Version** 1

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Code(s) 153TTB
Product name RHUBARB TYPE, NATURAL FLAVOR BLEND

Pure substance/mixture Mixture

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

Recommended Use Ingredient for further processing

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

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

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/ 703-527-3887 outside US

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Serious eye damage/eye irritation	Category 2 - (H319)
Carcinogenicity	Category 1A - (H350)
Flammable liquids	Category 3 - (H226)

2.2. Label elements

Product identifier
Contains ETHYL ALCOHOL

Signal Word
Danger

Hazard Statements
H319 - Causes serious eye irritation
H350 - May cause cancer
H226 - Flammable liquid and vapor
Contains TRANS-2-HEXENAL EUH208 - May produce an allergic reaction

Precautionary Statements - EU (§28, 1272/2008)
P201 - Obtain special instructions before use
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P370 + P378 - In case of fire: Use .? to extinguish
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

2.3. Other information
No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	EC-No	CAS-No	Weight %	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Registration Number
GLYCERINE	Present	56-81-5	50-90%	No data available	No data available
ETHYL ALCOHOL	200-578-6	64-17-5	30-50%	Flam. Liq. 2 (H225) Eye Irrit. 1 (H319)	No data available
ACETIC ACID	200-580-7	64-19-7	1-5%	Skin Corr. 1A (314) Eye Dam. 1 (H318) Flam. Liq. 3 (H226)	No data available
PROPIONIC ACID	201-176-3	79-09-4	<1%	Skin Corr. 1B (314) (EFFA) Eye Dam. 1 (H318) (EFFA) Acute Tox. 5 (H303)(EFFA) Flam. Liq. 3 (H226)(EFFA) Skin Corr. 1B (H314) Eye Dam. 1 (H318)	No data available
ACETALDEHYDE	200-836-8	75-07-0	<1%	Carc. 2 (H351) (EFFA) Eye Irrit. 1 (H319) (EFFA) Flam. Liq. 1 (H224) (EFFA) Flam. Liq. 1 (H224) STOT SE 3 (H335) Carc. 2 (H351) Eye Irrit. 2 (H319)	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
ETHYL ACETATE	Present	141-78-6	<1%	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
ISOAMYL ACETATE	Present	123-92-2	<1%	Aquatic Acute 3 (H402) (EFFA) (EUH066) Flam. Liq. 3 (H226)	No data available
HEXYL ALCOHOL	Present	111-27-3	<1%	Aquatic Acute 3 (H402) (EFFA) Eye Irrit. 1 (H319) (EFFA) Skin Irrit. 3 (316) (EFFA) Acute Tox. 4 (H302) (EFFA) Acute Tox. 4	No data available

				(H312)(EFFA) Flam. Liq. 3 (H226)(EFFA) Acute Tox. 4 (H302)	
ISOAMYL ALCOHOL	204-633-5	123-51-3	<1%	Flam. Liq. 3 (H226)(EFFA) Acute Tox. 4 (H332)(EFFA)	No data available
FURFURAL	Present	98-01-1	<1%	Acute Tox. 3 (H301) Carc. 2 (H351) (EFFA) Eye Irrit. 1 (H319) (EFFA) Skin Irrit. 2 (315) (EFFA) Acute Tox. 3 (H301) (EFFA) Acute Tox. 4 (H312)(EFFA) Flam. Liq. 4 (H227)(EFFA) Acute Tox. 3 (H331)(EFFA) Carc. 2 (H351) Eye Irrit. 1 (H319) Skin Irrit. 2 (H315) Acute Tox. 3 (H301) Acute Tox. 4 (H312) Acute Tox. 3 (H331) Acute Tox. 4 (H312) Skin Irrit. 2 (H315) STOT SE 3 (H335) Carc. 2 (H351) Acute Tox. 3 (H331) Eye Irrit. 2 (H319)	No data available
Hexenal (Aldehyde C-6)	200-624-5	66-25-1	<1%	Eye Irrit. 1 (H319) (EFFA) Skin Irrit. 3 (316) (EFFA) Flam. Liq. 3 (H226)(EFFA)	No data available

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

Full text of H- and EUH-phrases: see section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation Move to fresh air.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Ingestion Clean mouth with water and drink afterwards plenty of water.

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

Main Symptoms No information available.

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

Note to physicians Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

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

Unsuitable extinguishing media
No information available

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
Ensure adequate ventilation.

For emergency responders
Use personal protection recommended in Section 8.

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

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

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

6.4. Reference to other sections

See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Ensure adequate ventilation.

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

7.2. Conditions for safe storage, including any incompatibilities

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

Incompatible products
None known based on information supplied.

7.3 Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Chemical Name	European Union	The United Kingdom	France	Spain	Germany

GLYCERINE 56-81-5	-	STEL: 30 mg/m³ TWA: 10 mg/m³	TWA: 10 mg/m³	TWA: 10 mg/m³	-
ETHYL ALCOHOL 64-17-5	-	STEL: 3000 ppm STEL: 5760 mg/m³ TWA: 1000 ppm TWA: 1920 mg/m³	VME: 1000 ppm VME: 1900 mg/m³ VLCT: 5000 ppm VLCT: 9500 mg/m³	VLA-ED: 1000 ppm VLA-ED: 1910 mg/m³	-
ACETIC ACID 64-19-7	TWA 10 ppm TWA 25 mg/m³	-	VLCT: 10 ppm VLCT: 25 mg/m³	VLA-EC: 15 ppm VLA-EC: 37 mg/m³ VLA-ED: 10 ppm VLA-ED: 25 mg/m³	-
PROPIONIC ACID 79-09-4	TWA 10 ppm TWA 31 mg/m³ STEL 20 ppm STEL 62 mg/m³	STEL: 15 ppm STEL: 46 mg/m³ TWA: 10 ppm TWA: 31 mg/m³	TWA: 10 ppm TWA: 31 mg/m³ STEL: 20 ppm STEL: 62 mg/m³	STEL: 20 ppm STEL: 62 mg/m³ TWA: 10 ppm TWA: 31 mg/m³	-
ACETALDEHYDE 75-07-0	-	STEL: 50 ppm STEL: 92 mg/m³ TWA: 20 ppm TWA: 37 mg/m³	TWA: 100 ppm TWA: 180 mg/m³	STEL: 25 ppm STEL: 46 mg/m³	-
ETHYL ACETATE 141-78-6	-	STEL: 400 ppm TWA: 200 ppm	TWA: 400 ppm TWA: 1400 mg/m³	TWA: 400 ppm TWA: 1460 mg/m³	-
ISOAMYL ACETATE 123-92-2	TWA 50 ppm TWA 270 mg/m³ STEL 100 ppm STEL 540 mg/m³	TWA: 50 ppm TWA: 270 mg/m³	TWA: 50 ppm TWA: 270 mg/m³ STEL: 100 ppm STEL: 540 mg/m³	STEL: 100 ppm STEL: 540 mg/m³ TWA: 50 ppm TWA: 270 mg/m³	-
ISOAMYL ALCOHOL 123-51-3	-	STEL: 125 ppm STEL: 458 mg/m³ TWA: 100 ppm TWA: 366 mg/m³	TWA: 100 ppm TWA: 360 mg/m³	STEL: 125 ppm STEL: 458 mg/m³ TWA: 100 ppm TWA: 366 mg/m³	-
FURFURAL 98-01-1	-	STEL: 5 ppm STEL: 20 mg/m³ TWA: 2 ppm TWA: 8 mg/m³ Skin	STEL: 2 ppm STEL: 8 mg/m³	S* TWA: 2 ppm TWA: 8 mg/m³	-
Chemical Name	**Italy**	**Portugal**	**The Netherlands**	**Finland**	**Denmark**
GLYCERINE 56-81-5	-	TWA: 10 mg/m³	-	TWA: 20 mg/m³	-
ETHYL ALCOHOL 64-17-5	-	TWA: 1000 ppm	Skin STEL: 1900 mg/m³ TWA: 260 mg/m³	TWA: 1000 ppm TWA: 1900 mg/m³ STEL: 1300 ppm STEL: 2500 mg/m³	TWA: 1000 ppm TWA: 1900 mg/m³
ACETIC ACID 64-19-7	-	STEL: 15 ppm TWA: 10 ppm	-	TWA: 5 ppm TWA: 13 mg/m³ STEL: 10 ppm STEL: 25 mg/m³	TWA: 10 ppm TWA: 25 mg/m³
PROPIONIC ACID 79-09-4	TWA: 10 ppm TWA: 31 mg/m³ STEL: 20 ppm STEL: 62 mg/m³	STEL: 20 ppm STEL: 62 mg/m³ TWA: 10 ppm TWA: 31 mg/m³	STEL: 62 mg/m³ TWA: 31 mg/m³	TWA: 10 ppm TWA: 31 mg/m³ STEL: 20 ppm STEL: 61 mg/m³	TWA: 10 ppm TWA: 31 mg/m³
ACETALDEHYDE 75-07-0	-	Ceiling: 25 ppm	STEL: 92 mg/m³ TWA: 37 mg/m³	STEL: 25 ppm STEL: 46 mg/m³	Ceiling: 25 ppm Ceiling: 45 mg/m³
ETHYL ACETATE 141-78-6	-	TWA: 400 ppm	-	TWA: 300 ppm TWA: 1100 mg/m³ STEL: 500 ppm STEL: 1800 mg/m³	TWA: 150 ppm TWA: 540 mg/m³
ISOAMYL ACETATE 123-92-2	TWA: 50 ppm TWA: 270 mg/m³ STEL: 100 ppm STEL: 540 mg/m³	STEL: 100 ppm STEL: 540 mg/m³ TWA: 50 ppm	STEL: 530 mg/m³	TWA: 50 ppm TWA: 270 mg/m³ STEL: 100 ppm STEL: 540 mg/m³	TWA: 50 ppm TWA: 271 mg/m³
ISOAMYL ALCOHOL 123-51-3	-	STEL: 125 ppm TWA: 100 ppm	-	TWA: 100 ppm TWA: 370 mg/m³ STEL: 150 ppm STEL: 550 mg/m³	TWA: 100 ppm TWA: 360 mg/m³
FURFURAL 98-01-1	-	TWA: 2 ppm	-	TWA: 2 ppm TWA: 8 mg/m³ STEL: 5 ppm STEL: 20 mg/m³ Skin	TWA: 2 ppm TWA: 7.9 mg/m³ Skin
Hexenal (Aldehyde C-6)	-	-	-	STEL: 10 ppm STEL:	-

66-25-1				42 mg/m³	
Chemical Name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
GLYCERINE 56-81-5	-	STEL: 100 mg/m³ TWA: 50 mg/m³	TWA: 10 mg/m³	-	TWA: 10 mg/m³
ETHYL ALCOHOL 64-17-5	STEL 2000 ppm STEL 3800 mg/m³ MAK: 1000 ppm MAK: 1900 mg/m³	STEL: 1000 ppm STEL: 1920 mg/m³ MAK: 500 ppm MAK: 960 mg/m³	NDS: 1900 mg/m³	TWA: 500 ppm TWA: 950 mg/m³ STEL: 625 ppm STEL: 1187.5 mg/m³	TWA: 1000 ppm TWA: 1900 mg/m³
ACETIC ACID 64-19-7	STEL 20 ppm STEL 50 mg/m³ MAK: 10 ppm MAK: 25 mg/m³	STEL: 20 ppm STEL: 50 mg/m³ MAK: 10 ppm MAK: 25 mg/m³	NDSCh: 30 mg/m³ NDS: 15 mg/m³	TWA: 10 ppm TWA: 25 mg/m³ STEL: 20 ppm STEL: 37.5 mg/m³	TWA: 10 ppm TWA: 25 mg/m³ STEL: 15 ppm STEL: 37 mg/m³
PROPIONIC ACID 79-09-4	STEL 20 ppm STEL 62 mg/m³ TWA: 10 ppm TWA: 31 mg/m³	STEL: 20 ppm STEL: 60 mg/m³ TWA: 10 ppm TWA: 30 mg/m³	STEL: 45 mg/m³ TWA: 30 mg/m³	TWA: 10 ppm TWA: 30 mg/m³ STEL: 20 ppm STEL: 45 mg/m³	TWA: 10 ppm TWA: 31 mg/m³ STEL: 20 ppm STEL: 62 mg/m³
ACETALDEHYDE 75-07-0	STEL 50 ppm STEL 90 mg/m³ TWA: 50 ppm TWA: 90 mg/m³ Ceiling 50 ppm Ceiling 90 mg/m³	STEL: 50 ppm STEL: 90 mg/m³ TWA: 90 mg/m³ TWA: 50 ppm	: 45 mg/m³ TWA: 5 mg/m³	TWA: 25 ppm TWA: 45 mg/m³ STEL: 37.5 ppm STEL: 67.5 mg/m³	TWA: 25 ppm TWA: 45 mg/m³ STEL: 25 ppm STEL: 45 mg/m³
ETHYL ACETATE 141-78-6	STEL 600 ppm STEL 2100 mg/m³ TWA: 300 ppm TWA: 1050 mg/m³	STEL: 800 ppm STEL: 2800 mg/m³ TWA: 400 ppm TWA: 1400 mg/m³	STEL: 600 mg/m³ TWA: 200 mg/m³	TWA: 150 ppm TWA: 550 mg/m³ STEL: 187.5 ppm STEL: 687.5 mg/m³	TWA: 200 ppm STEL: 400 ppm
ISOAMYL ACETATE 123-92-2	STEL 100 ppm STEL 540 mg/m³ TWA: 50 ppm TWA: 270 mg/m³	TWA: 50 ppm TWA: 260 mg/m³	STEL: 500 mg/m³ TWA: 250 mg/m³	TWA: 50 ppm TWA: 260 mg/m³ STEL: 75 ppm STEL: 325 mg/m³	TWA: 50 ppm TWA: 260 mg/m³ STEL: 100 ppm STEL: 520 mg/m³
ISOAMYL ALCOHOL 123-51-3	STEL 200 ppm STEL 720 mg/m³ TWA: 100 ppm TWA: 360 mg/m³	STEL: 80 ppm STEL: 292 mg/m³ TWA: 20 ppm TWA: 73 mg/m³	STEL: 400 mg/m³ TWA: 200 mg/m³	TWA: 50 ppm TWA: 180 mg/m³ STEL: 75 ppm STEL: 225 mg/m³	TWA: 100 ppm TWA: 360 mg/m³ STEL: 125 ppm STEL: 450 mg/m³
FURFURAL 98-01-1	Skin TWA: 5 ppm TWA: 20 mg/m³	Skin TWA: 2 ppm TWA: 8 mg/m³	STEL: 25 mg/m³ TWA: 10 mg/m³	TWA: 2 ppm TWA: 8 mg/m³ Skin STEL: 4 ppm STEL: 16 mg/m³	TWA: 2 ppm TWA: 8 mg/m³ STEL: 5 ppm STEL: 20 mg/m³ Skin
Hexenal (Aldehyde C-6) 66-25-1	-	-	NDSCh: 80 mg/m³ NDS: 40 mg/m³	-	-

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/face protection Tightly fitting safety goggles.
Skin and body protection Long sleeved clothing.
Respiratory protection NIOSH/MSHA approved respiratory protection is required to be worn.

Environmental Exposure Controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state liquid
Appearance viscous clear
Aroma characteristic of fresh tart apples

Color yellowish

Property	Values	• Method
pH		No information available
Melting/freezing point		No information available
Boiling point/boiling range		FCC Method
Flash Point	27 °C / 81 °F	Closed cup
Evaporation rate		FCC Method
Flammability (solid, gas)		No information available
Flammability Limits in Air		
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
Relative density		No information available
Specific Gravity @ 25C	1.1062 - 1.1362	FCC Method
Specific Gravity @ 20C	1.1092 - 1.1392	FCC Method
Refractive Index	1.4241 - 1.4541	FCC Method
Water solubility		No information available
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity, kinematic		No information available
Viscosity, dynamic		No information available
Explosive properties	No information available	
Oxidizing Properties	No information available	

9.2. 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

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion data
Sensitivity to Mechanical Impact none.
Sensitivity to Static Discharge Yes.

10.3. Possibility of hazardous reactions

Hazardous Reactions
None under normal processing.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Product Information

Product does not present an acute toxicity hazard based on known or supplied 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.

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

ATEmix (oral) 6,470.00 mg/kg
ATEmix (dermal) 8,189.00 mg/kg
ATEmix (inhalation-dust/mist) 198.40 mg/l

Unknown Acute Toxicity

97.50875% of the mixture consists of ingredient(s) of unknown toxicity.
57.16725 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
39.7245 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
97.50875 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).
97.50875 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).
4.355 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Oral LD50

Chemical Name	Oral LD50	Dermal LD50	LC50 Inhalation
GLYCERINE		10 g/kg (Rabbit)	570 mg/m³ (Rat) 1 h
ETHYL ALCOHOL	7060 mg/kg (Rat)		124.7 mg/L (Rat) 4 h
CITRIC ACID	3000 mg/kg (Rat)		
ACETIC ACID	3310 mg/kg (Rat)	1060 mg/kg (Rabbit)	11.4 mg/L (Rat) 4 h
ACETALDEHYDE	1930 mg/kg (Rat)		

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.

Reproductive toxicity 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, Kidney, Liver, Reproductive system, Respiratory system, Skin, Teeth.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Toxic to aquatic life

0.289% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
GLYCERINE	-	51 - 57: 96 h Oncorhynchus mykiss mL/L LC50 static	500: 24 h Daphnia magna mg/L EC50
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
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
PROPIONIC ACID	45.8: 72 h Desmodesmus subspicatus mg/L EC50 43: 96 h Desmodesmus subspicatus mg/L EC50	1: 96 h Pimephales promelas mg/L LC50 static 73 - 99.7: 96 h Lepomis macrochirus mg/L LC50 static 51: 96 h Oncorhynchus mykiss mg/L LC50 static	-
ACETALDEHYDE	237 - 249: 120 h Nitzschia linearis mg/L EC50	28.0 - 34.0: 96 h Pimephales promelas mg/L LC50 flow-through 53: 96 h Lepomis macrochirus mg/L LC50 static 1.8 - 2.4: 96 h Oncorhynchus mykiss mg/L LC50 static 39.8 - 46.8: 96 h Pimephales promelas mg/L LC50 static	3.64 - 6.15: 48 h Daphnia magna mg/L EC50 Static 48.3: 48 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 mg/L LC50 flow-through 352 - 500: 96 h Oncorhynchus mykiss mg/L LC50 semi-static	560: 48 h Daphnia magna mg/L EC50 Static
HEXYL ALCOHOL	-	89.7 - 106: 96 h Pimephales promelas mg/L LC50 flow-through 144: 96 h Brachydanio rerio mg/L LC50 static	201: 24 h Daphnia magna mg/L EC50
ISOAMYL ALCOHOL	493: 72 h Desmodesmus subspicatus mg/L EC50 181: 96 h Desmodesmus subspicatus mg/L EC50	700: 96 h Salmo gairdneri mg/L LC50 static	260: 48 h Daphnia magna mg/L EC50
FURFURAL	-	13.4 - 19.3: 96 h Pimephales promelas mg/L LC50 static 16.79 - 26.35: 96 h Pimephales promelas mg/L LC50 flow-through	29: 24 h Daphnia magna mg/L EC50
Hexenal (Aldehyde C-6)	-	12-16.5: 96 h Pimephales promelas mg/L LC50 flow-through	-

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

Chemical Name	log Pow
GLYCERINE	-1.76
ETHYL ALCOHOL	-0.32
ACETIC ACID	-0.31
PROPIONIC ACID	0.33
ACETALDEHYDE	0.5
ETHYL ACETATE	0.6
HEXYL ALCOHOL	2.03
ISOAMYL ALCOHOL	1.28
FURFURAL	0.67

12.4. Mobility in soil

Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment

No information available.

12.6. Other adverse effects

No information available

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
FURFURAL	Group III Chemical	-	-

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

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

Contaminated packaging Empty remaining contents.

Section 14: TRANSPORT INFORMATION

IMDG / IMO
14.1 UN/ID No 1197
14.2 Proper shipping name EXTRACTS, FLAVOURING, LIQUID
14.3 Hazard class 3
14.4 Packing Group III

DOT/ADR/RID
14.1 UN/ID No 1197
14.2 Proper shipping name EXTRACTS, FLAVOURING, LIQUID
14.3 Hazard class 3
14.4 Packing Group III

ICAO/IATA
14.1 UN/ID No 1197
14.2 Proper shipping name EXTRACTS, FLAVOURING, LIQUID
14.3 Hazard class 3

14.4 Packing Group	III
14.5 Environmental hazard	Not applicable
14.6 Special Provisions	None

Section 15: REGULATORY INFORMATION

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

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorizations and/or restrictions on use:
This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

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

15.2. Chemical safety assessment

No information available

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of R-phrases referred to under sections 2 and 3
R35 - Causes severe burns
R10 - Flammable

Full text of H-Statements referred to under section 3

H402 - Harmful to aquatic life
H319 - Causes serious eye irritation
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H226 - Flammable liquid and vapor
H332 - Harmful if inhaled
H225 - Highly flammable liquid and vapor
H336 - May cause drowsiness or dizziness
H318 - Causes serious eye damage
H401 - Toxic to aquatic life
H317 - May cause an allergic skin reaction
H411 - Toxic to aquatic life with long lasting effects
H311 - Toxic in contact with skin
H351 - Suspected of causing cancer if inhaled
H224 - Extremely flammable liquid and vapor
H335 - May cause respiratory irritation
H303 - May be harmful if swallowed
H314 - Causes severe skin burns and eye damage
H301 - Toxic if swallowed
H227 - Combustible liquid
H331 - Toxic if inhaled
H315 - Causes skin irritation
EUH066 - Repeated exposure may cause skin dryness or cracking

Legend
SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA:	Time weighted average	STEL:	Short term exposure limit
Ceiling:	Maximum limit value:	*	Skin designation

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Reason for revision: Not applicable.

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

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