APEX FLAVORS, INC.

SAFETY DATA SHEET.

Version 1.01

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

1.1. Product identifier

Number 342TTB

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

Product name CHOCOLATE CAKE TYPE, NATURAL AND ARTIFICIAL (CONTAINS < 0.10% ARTIFICIAL TOP NOTE)

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/ 703-527-3887 outside US

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Acute inhalation toxicity - dust/mist	Category 4
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 1A
Acute aquatic toxicity	Category 2
Flammable liquids	Category 3

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)
Xn - Harmful

R-code(s)
R10 - Xn;R21

2.2. Label elements

Signal Word
Danger

Hazard Statements
H332 - Harmful if inhaled
H319 - Causes serious eye irritation
H350 - May cause cancer
H401 - Toxic to aquatic life

H226 - Flammable liquid and vapor

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
PROPYLENE GLYCOL	200-338-0	57-55-6		50-90%	-	No data available	No data available
ETHYL ALCOHOL	200-578-6	64-17-5		20-30%	F; R11	Flam. Liq. 2 (H225) Flam. Liq. 2 (H225)	No data available
BENZYL ALCOHOL	202-859-9	100-51-6		1-5%	Xn; R20/22	Acute Tox. 5 (H333) Acute Tox. 4 (H302)	No data available
ISOVALERALDEHYDE	Present	590-86-3		<1	-	Aquatic Acute 2 (H401) (EFFA) Skin Sens. 1 (H317) (EFFA) Eye Irrit. 1 (H319) (EFFA) Skin Irrit. 3 (316) (EFFA) Flam. Liq. 2 (H225) (EFFA) Acute Tox. 5 (H303)(EFFA)	No data available
METHYL N-AMYL KETONE FCC (2-Heptanone)	Present	110-43-0		<1	R10 Xn; R20/22	Acute Tox. 4 (H302) Acute Tox. 4 (H302) (EFFA) Flam. Liq. 3	No data available

						(H226)(EFFA) Acute Tox. 4 (H332)(EFFA) Flam. Liq. 3 (H226) Acute Tox. 4 (H332)	
FURFURAL	Present	98-01-1		<1	Xn; R21 T; R23/25 Xi; R36/37/38 Carc.Cat.3; R40	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
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

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

General advice Immediate medical attention is required Show this material safety data sheet to the doctor in attendance.

Eye contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes Keep eye wide open while rinsing If symptoms persist, call a physician

Skin contact Wash off immediately with plenty of water.

Ingestion Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do NOT induce vomiting.

Inhalation Move to fresh air. Call a physician. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Self-protection of the first aider Remove all sources of ignition

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

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

See Section 12 for additional Ecological Information

6.2. 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.

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. 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.

7.2. Conditions for safe storage, including any incompatibilities

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

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
PROPYLENE GLYCOL		STEL: 450 ppm STEL:			

57-55-6		1422 mg/m³ STEL: 30 mg/m³ TWA: 150 ppm TWA: 474 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	MAK: 500 ppm MAK: 960 mg/m³ Ceiling / Peak: 1000 ppm Ceiling / Peak: 1920 mg/m³ Skin TWA: 500 ppm TWA: 960 mg/m³
ISOVALERALDEHYDE 590-86-3					TWA: 10 ppm TWA: 39 mg/m³
METHYL N-AMYL KETONE FCC (2-Heptanone) 110-43-0	S* TWA 50 ppm TWA 238 mg/m³ STEL 100 ppm STEL 475 mg/m³	STEL: 100 ppm STEL: 475 mg/m³ TWA: 50 ppm TWA: 237 mg/m³ Skin	TWA: 50 ppm TWA: 238 mg/m³ STEL: 100 ppm STEL: 475 mg/m³	S* STEL: 100 ppm STEL: 474 mg/m³ TWA: 50 ppm TWA: 237 mg/m³	TWA: 238 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	Skin
DIMETHYL SULFIDE 75-18-3				VLA-ED: 10 ppm	

Chemical Name	Italy	Portugal	The Netherlands	Finland	Denmark
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
BENZYL ALCOHOL 100-51-6				TWA: 10 ppm TWA: 45 mg/m³	
METHYL N-AMYL KETONE FCC (2-Heptanone) 110-43-0	TWA: 50 ppm TWA: 238 mg/m³ STEL: 100 ppm STEL: 475 mg/m³ Skin	TWA: 50 ppm	TWA: 233 mg/m³	TWA: 50 ppm TWA: 240 mg/m³ STEL: 75 ppm STEL: 360 mg/m³ Skin	TWA: 50 ppm TWA: 238 mg/m³ Skin
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
DIMETHYL SULFIDE 75-18-3		TWA: 10 ppm			

Chemical Name	Austria	Sweden - Occupational Exposure Limits - TLVs (LLVs)	Switzerland	Poland	Norway
PROPYLENE GLYCOL 57-55-6					TWA: 25 ppm TWA: 79 mg/m³ STEL: 37.5 ppm STEL: 118.5 mg/m³
ETHYL ALCOHOL 64-17-5	STEL 2000 ppm STEL 3800 mg/m³ MAK: 1000 ppm MAK: 1900 mg/m³	500 ppm NGV 1000 mg/m³ NGV	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
BENZYL ALCOHOL 100-51-6				NDS: 240 mg/m³	
ISOVALERALDEHYDE 590-86-3	STEL 10 ppm STEL 39 mg/m³ TWA: 10 ppm TWA: 39 mg/m³				

	Ceiling 10 ppm Ceiling 39 mg/m³				
METHYL N-AMYL KETONE FCC (2-Heptanone) 110-43-0	Skin STEL 100 ppm STEL 473 mg/m³ TWA: 50 ppm TWA: 237 mg/m³	25 ppm NGV 120 mg/m³ NGV	TWA: 50 ppm TWA: 235 mg/m³	STEL: 475 mg/m³ TWA: 238 mg/m³	TWA: 25 ppm TWA: 115 mg/m³ Skin STEL: 37.5 ppm STEL: 143.75 mg/m³
FURFURAL 98-01-1	Skin TWA: 5 ppm TWA: 20 mg/m³	2 ppm NGV 8 mg/m³ NGV	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
DIMETHYL SULFIDE 75-18-3		1 ppm NGV			

Component	Ireland
PROPYLENE GLYCOL 57-55-6 (50-90%)	TWA: 150 ppm TWA: 470 mg/m³ TWA: 10 mg/m³
ETHYL ALCOHOL 64-17-5 (20-30%)	TWA: 1000 ppm TWA: 1900 mg/m³
METHYL N-AMYL KETONE FCC (2-Heptanone) 110-43-0 (<1)	TWA: 50 ppm TWA: 238 mg/m³ STEL: 100 ppm STEL: 475 mg/m³ Skin
FURFURAL 98-01-1 (<1)	TWA: 2 ppm TWA: 8 mg/m³ STEL: 5 ppm STEL: 20 mg/m³ Skin
DIMETHYL SULFIDE 75-18-3 (<1)	TWA: 20 ppm

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 Antistatic boots Wear fire/ flame resistant/ retardant clothing Impervious gloves

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

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

Environmental Exposure Controls Do not allow material to contaminate ground water system

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	liquid	**Appearance**	clear
Odor	Chocolate with cake notes	**Color**	yellow

Property	Values	Method
pH		No information available
Melting/freezing point		No information available
Boiling point/boiling range		FCC Method
Flash Point	32 °C / 89 °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	0.9445 - 0.9745	FCC Method
Specific Gravity @ 20C	0.9475 - 0.9775	FCC Method
Refractive Index	1.4003 - 1.4303	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(%)	95.063
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 0.175% 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 9,800.00 mg/kg
Dermal 20,999.00 mg/kg

Inhalation
Mist 1.67 mg/l
Vapor 367.00 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
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	10000: 24 h Daphnia magna mg/L EC50 1000: 48 h Daphnia magna mg/L EC50 Static

		h Pimephales promelas mg/L LC50	
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
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
ISOVALERALDEHYDE	80: 72 h Desmodesmus subspicatus mg/L EC50 78: 96 h Desmodesmus subspicatus mg/L EC50	2.98 - 3.54: 96 h Pimephales promelas mg/L LC50 flow-through 53: 96 h Leuciscus idus mg/L LC50 static	177: 48 h Daphnia magna mg/L EC50
METHYL N-AMYL KETONE FCC (2-Heptanone)		126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	
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
DIMETHYL SULFIDE			23: 48 h Daphnia pulex 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
BENZYL ALCOHOL	1.1
ISOVALERALDEHYDE	1.31
METHYL N-AMYL KETONE FCC (2-Heptanone)	1.98
FURFURAL	0.67

12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

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

Other Information According to the European Waste Catalogue, Waste Codes are not product specific, but application specific Waste codes should be assigned by the user based on the application for which the product was used

14. TRANSPORT INFORMATION

DOT/ADR Not regulated (If shipped in NON BULK packaging by ground transport)
- **UN/ID No** 1197
- **Proper shipping name** EXTRACTS, FLAVOURING, LIQUID
- **Hazard class** 3
- **Packing Group** III
- **ERG Code** 127

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

ICAO/IATA
- **UN/ID No** 1197
- **Proper shipping name** EXTRACTS, FLAVOURING, LIQUID
- **Hazard class** 3
- **Packing Group** III
- **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
PROPYLENE GLYCOL 57-55-6	Hazard Class 1
ETHYL ALCOHOL 64-17-5	Hazard Class 1
BENZYL ALCOHOL 100-51-6	Hazard Class 1
ISOVALERALDEHYDE 590-86-3	Hazard Class 1
FURFURAL 98-01-1	Hazard Class 2

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
R20/22 - Harmful by inhalation and if swallowed

Full text of H-Statements referred to under sections 2 and 3
H333 - May be harmful if inhaled H302 - Harmful if swallowed H226 - Flammable liquid and vapor H332 - Harmful if inhaled H401 - Toxic to aquatic life H317 - May cause an allergic skin reaction H319 - Causes serious eye irritation H225 - Highly flammable liquid and vapor H303 - May be harmful if swallowed H301 - Toxic if swallowed H351 - Suspected of causing cancer if inhaled H312 - Harmful in contact with skin H227 - Combustible liquid H331 - Toxic if inhaled H315 - Causes skin irritation H335 - May cause respiratory irritation

Revision Date	14-Feb-2017
Revision Note	Not applicable.
Revision#	1.01

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

WARNING/DISCLAIMER:
Apex Flavors, Inc.'s products are sold exclusively for use in food and drink for human consumption. These products have not been tested, nor have they been deemed safe, for inhalation or use in electronic smoking devices, electronic nicotine delivery systems, and electronic cigarettes or similar devices (collectively "E-Cigarettes"). In supplying this product(s), Apex Flavors, Inc. instructs, and purchasing recipient confirms, that this product(s) will not be used in connection with the manufacture and distribution of E-Cigarettes or any component thereof. Recipients of our products that use them outside of their intended use of food or drink do so at their own risk and without warranty, either expressed or implied, from Apex Flavors, Inc. or its suppliers. The user assumes all liability for loss, injury, damage, or expense resulting from such uses.

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