



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

Revision Date 21-Mar-2019

Version 5

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

1.1. Product identifier

Product Code(s) 237, 237TTB
Product name DULCE DE LECHE TYPE, NATURAL & ARTIFICIAL

Mixture

Pure substance/mixture
Contains BENZYL ALCOHOL, ETHYL ALCOHOL

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

Acute toxicity - Inhalation (Vapors)	Category 4 - (H332)
Serious eye damage/eye irritation	Category 2 - (H319)
Specific target organ systemic toxicity (repeated exposure)	Category 1 - (H372)
Flammable liquids	Category 3 - (H226)

2.2. Label elements

Product identifier
Contains BENZYL ALCOHOL, ETHYL ALCOHOL

**Signal Word**

Danger

Hazard Statements

H319 - Causes serious eye irritation

H332 - Harmful if inhaled

H372 - Causes damage to organs through prolonged or repeated exposure if inhaled

H226 - Flammable liquid and vapor

Contains MYRISTIC ACID (TETRADECANOIC) EUH208 - May produce an allergic reaction

Precautionary Statements - EU (§28, 1272/2008)

P310 - Immediately call a POISON CENTER or doctor

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P201 - Obtain special instructions before use

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

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
Trade Secret	Listed	-	50-90%	No data available	No data available
ETHYL ALCOHOL	200-578-6	64-17-5	10-15%	Flam. Liq. 2 (H225) Eye Irrit. 1 (H319)	No data available
Trade Secret	Listed	-	1-5%	Acute Tox. 5 (H333) Acute Tox. 4 (H302)	No data available
BUTYRIC ACID	Present	107-92-6	<1%	Aquatic Acute 3 (H402) (EFFA) Skin Corr. 1B (314) (EFFA) Eye Dam. 1 (H318) (EFFA) Acute Tox. 4 (H302) (EFFA) Flam. Liq. 4 (H227)(EFFA) Skin Corr. 1B (H314)	No data available
Trade Secret	Listed	-	<1%	Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Aquatic Chronic 2 (H411)	No data available
ACETYL METHYL CARBINOL	208-174-1	513-86-0	<1%	Flam. Liq. 3 (H226)(EFFA)	No data available
ACETYL PROPIONYL FCC (2,3 PENTANEDIONE)	209-984-8	600-14-6	<1%	No data available	No data available
Trade Secret	Listed	-	<1%	Acute Tox. 4 (H302) Acute Tox. 4 (H302) (EFFA) Flam. Liq. 3 (H226)(EFFA) Acute Tox. 4 (H332)(EFFA) Flam. Liq. 3 (H226) Acute Tox. 4 (H332)	No data available
Trade Secret	Listed	-	<1%	Skin Irrit. 3 (316) (EFFA) Acute	No data available

				Tox. 3 (H301) (EFA) Flam. Liq. 2 (H225) (EFA)	
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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

General advice	Immediate medical attention is required. Show this material safety data sheet to the doctor in attendance.
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.
Skin contact	Wash off immediately with plenty of water.
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.
Ingestion	Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do NOT induce vomiting.
Self-protection of the first aider	Remove all sources of ignition.

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

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

For emergency responders

Use personal protection recommended in Section 8.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

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

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

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. 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.

General Hygiene Considerations

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

7.2. 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.

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
Trade Secret	-	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	-	-	-
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	-

Trade Secret	S* TWA 50 ppm TWA: 238 mg/m ³ STEL 100 ppm STEL: 475 mg/m ³	STEL: 100 ppm STEL: 475 mg/m ³ TWA: 50 ppm TWA: 237 mg/m ³ Skin	TWA: 50 ppm TWA: 238 mg/m ³ STEL: 100 ppm STEL: 475 mg/m ³	S* STEL: 100 ppm STEL: 474 mg/m ³ TWA: 50 ppm TWA: 237 mg/m ³	-
Trade Secret	-	-	-	VLA-ED: 10 ppm	-
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
Trade Secret	-	-	-	TWA: 10 ppm TWA: 45 mg/m ³	-
Trade Secret	TWA: 50 ppm TWA: 238 mg/m ³ STEL: 100 ppm STEL: 475 mg/m ³ Skin	TWA: 50 ppm	TWA: 233 mg/m ³	TWA: 50 ppm TWA: 240 mg/m ³ STEL: 75 ppm STEL: 360 mg/m ³ Skin	TWA: 50 ppm TWA: 238 mg/m ³ Skin
Trade Secret	-	TWA: 10 ppm	-	-	-
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Trade Secret	-	-	-	TWA: 25 ppm TWA: 79 mg/m ³ STEL: 37.5 ppm STEL: 118.5 mg/m ³	TWA: 150 ppm TWA: 470 mg/m ³ TWA: 10 mg/m ³
ETHYL ALCOHOL 64-17-5	STEL 2000 ppm STEL: 3800 mg/m ³ MAK: 1000 ppm MAK: 1900 mg/m ³	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	TWA: 1000 ppm TWA: 1900 mg/m ³
Trade Secret	-	-	NDS: 240 mg/m ³	-	-
Trade Secret	Skin STEL 100 ppm STEL: 473 mg/m ³ TWA: 50 ppm TWA: 237 mg/m ³	TWA: 50 ppm TWA: 235 mg/m ³	STEL: 475 mg/m ³ TWA: 238 mg/m ³	TWA: 25 ppm TWA: 115 mg/m ³ Skin STEL: 37.5 ppm STEL: 143.75 mg/m ³	TWA: 50 ppm TWA: 238 mg/m ³ STEL: 100 ppm STEL: 475 mg/m ³ Skin
Trade Secret	-	-	-	-	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/face protection

Tightly fitting safety goggles.

Skin and body protection

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

Respiratory protection

NIOSH/MSHA approved respiratory protection is required to be worn.

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

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state liquid
Appearance clear
Odor characteristic of milky caramel

Color	Colorless to light yellow.		
<u>Property</u>	<u>Values</u>		<u>• Method</u>
pH			No information available
Melting/freezing point			No information available
Boiling point/boiling range			FCC Method
Flash Point	40 °C / 105 °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	0.9815 - 1.0015		FCC Method
Specific Gravity @ 20C	0.9845 - 1.0045		FCC Method
Refractive Index	0.9815 to 1.0015		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

Heat, flames and sparks.

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)	9,867.00 mg/kg
ATEmix (dermal)	14,241.00 mg/kg
ATEmix (inhalation-dust/mist)	0.26 mg/l
ATEmix (inhalation-vapor)	17.00 mg/l

Unknown Acute Toxicity

97.69209% of the mixture consists of ingredient(s) of unknown toxicity.

0.381 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

16.52509 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.

97.69209 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).

93.69209 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).

79.048 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Oral LD50

Chemical Name	Oral LD50	Dermal LD50	LC50 Inhalation
ETHYL ALCOHOL	7060 mg/kg (Rat)		124.7 mg/L (Rat) 4 h

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, Liver, Reproductive system, Respiratory system, Skin.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Harmful to aquatic life

1.743% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Trade Secret	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
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
Trade Secret	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
BUTYRIC ACID	46.7: 72 h Desmodesmus subspicatus mg/L EC50	200: 24 h Lepomis macrochirus mg/L LC50	61.7: 24 h Daphnia magna mg/L EC50
Trade Secret	-	118: 96 h Oryzias latipes mg/L LC50 static	27: 16 h Artemia salina mg/L EC50
Trade Secret	-	126 - 137: 96 h Pimephales promelas mg/L LC50 flow-through	-
Trade Secret	-	-	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
Trade Secret	1.1
BUTYRIC ACID	0.79
Trade Secret	5.9
Trade Secret	1.98

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

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.
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.

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

R22 - Harmful if swallowed

R43 - May cause sensitization by skin contact

R41 - Risk of serious damage to eyes

R38 - Irritating to skin

R10 - Flammable

R21 - Harmful in contact with skin

R20/22 - Harmful by inhalation and if swallowed

R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Full text of H-Statements referred to under section 3

H333 - May be harmful if inhaled

H302 - Harmful if swallowed

H226 - Flammable liquid and vapor

H332 - Harmful if inhaled

H315 - Causes skin irritation

H318 - Causes serious eye damage

H317 - May cause an allergic skin reaction

H411 - Toxic to aquatic life with long lasting effects

H225 - Highly flammable liquid and vapor

H319 - Causes serious eye irritation

H301 - Toxic if swallowed

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

Revision Date 21-Mar-2019

Reason for revision: Not applicable.

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.