APEX FLAVORS, INC.

SAFETY DATA SHEET.

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision Date 11-Aug-2023 **Version** 1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Code(s) 1363EXPT

Product name CHOCOLATE DARK BITTER TYPE FLAVOR, NATURAL & ARTIFICIAL

Other means of identification

CAS No. NA

FEMA Numbers NA
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.
1361 Brass Mill Rd Suite E
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/ Outside US Chemtel 813-248-0585.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to
Regulation (EC) No. 1272/2008 [CLP]

2.2. Label elements

Hazard statements

99.9604 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
99.9604 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
99.9604 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).
99.9604 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).
99.9604 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Unknown aquatic toxicity Contains 69.9604 % of components with unknown hazards to the aquatic environment.

2.3. Other hazards

No information available.

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
PROPYLENE GLYCOL 57-55-6	50-90%	No data available	200-338-0	No data available	-	-	-
Trade Secret	30-50%	No data available	Proprietary	No data available	-	-	-
Trade Secret	1-5%	No data available	Listed	Skin Sens. 1 (H317) Acute Tox. 5 (H303)	-	-	-
Isovaleraldehyde 590-86-3	<1%	No data available	209-691-5	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)	-	-	-
2, 3, 5 TRIMETHYL PYRAZINE 14667-55-1	<1%	No data available	238-712-0	Acute Tox. 4 (H302) (EFFA) Flam. Liq. 3 (H226)(EFFA)	-	-	-
ETHYL MALTOL 4940-11-8	<1%	No data available	225-582-5	Acute Tox. 4 (H302) (EFFA)	-	-	-
ISOVALERIC ACID 503-74-2	<1%	No data available	Present	Skin Corr. 1C (314) (EFFA) Eye Dam. 1 (H318) (EFFA)	-	-	-
Guaiacol 90-05-1	<1%	No data available	201-964-7	Eye Irrit. 1 (H319) Skin Irrit. 2 (H316) Acute Tox. 4 (H302)	-	-	-
MASSOIA LACTONE 54814-64-1	<1%	No data available	259-359-9	Skin Sens. 1 (H317) (EFFA) Eye Irrit. 1 (H319) (EFFA) Skin Irrit. 2 (315) (EFFA) Skin Sens. 1 (H317) Eye Irrit. 1 (H319) Skin Irrit. 2 (H315)	-	-	-

BENZALDEHYDE 100-52-7	<1%	No data available	202-860-4	Aquatic Acute 2 (H401) Skin Irrit. 3 (H316) Acute Tox. 4 (H302) Acute Tox. 5 (H313) Flam. Liq. 4 (H227)	-	-	-
PHENYL ETHYL ACETATE 103-45-7	<1%	No data available	203-113-5	Eye Irrit. 1 (H319) Skin Irrit. 3 (H316) Acute Tox. 5 (H303)	-	-	-
PHENYL ACETALDEHYDE 86-07-18	<1%	No data available	-	No data available	-	-	-

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

Acute Toxicity Estimate
No information available

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation Remove to fresh air

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

Skin contact Wash skin with soap and water In the case of skin irritation or allergic reactions see a physician

Ingestion Rinse mouth

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

Symptoms No information available.

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

Note to physicians Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical No information available.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection 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

Environmental precautions See Section 12 for additional Ecological Information.

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.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

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.

7.3. Specific end use(s)

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

SECTION 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	Austria	Belgium	Bulgaria	Croatia
PROPYLENE GLYCOL 57-55-6	-	-	-	-	TWA: 150 ppm TWA: 474 mg/m³ TWA: 10 mg/m³
Isovaleraldehyde 590-86-3	-	STEL 10 ppm STEL 39 mg/m³ MAK: 10 ppm MAK: 39 mg/m³ Ceiling 10 ppm Ceiling 39 mg/m³	-	-	-
BENZALDEHYDE 100-52-7	-	-	-	TWA: 5.0 mg/m³	-

Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
BENZALDEHYDE 100-52-7	-	-	-	-	TWA: 1 ppm TWA: 4.4 mg/m³ STEL: 4 ppm STEL: 17.4 mg/m³ Ceiling: 4 ppm Ceiling: 17.4 mg/m³

Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Isovaleraldehyde 590-86-3	-	-	TWA: 10 ppm TWA: 39 mg/m³	-	-
BENZALDEHYDE 100-52-7	-	-	-	-	STEL: 10 mg/m³ TWA: 5 mg/m³

Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
PROPYLENE GLYCOL 57-55-6	TWA: 150 ppm TWA: 470 mg/m³ TWA: 10 mg/m³	-	-	TWA: 7 mg/m³	-
BENZALDEHYDE 100-52-7	-	-	-	TWA: 5 mg/m³	-

Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
PROPYLENE GLYCOL 57-55-6	-	-	-	TWA: 25 ppm TWA: 79 mg/m³ STEL: 37.5 ppm STEL: 118.5 mg/m³	-
BENZALDEHYDE 100-52-7	-	-	-	-	NDSCh: 40 mg/m³ NDS: 10 mg/m³

Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Isovaleraldehyde 590-86-3	-	-	-	TWA: 10 ppm TWA: 39 mg/m³ STEL: STEL ppm STEL: STEL mg/m³	-

Chemical name	Sweden	Switzerland	United Kingdom
PROPYLENE GLYCOL 57-55-6	-	-	STEL: 450 ppm STEL: 1422 mg/m³ STEL: 30 mg/m³ TWA: 150 ppm TWA: 474 mg/m³ TWA: 10 mg/m³

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

Derived No Effect Level (DNEL) - Workers No information available

Derived No Effect Level (DNEL) - General Public No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering controls No information available.

Personal protective equipment

Eye/face protection No special protective equipment required.

Skin and body protection No special protective equipment required.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

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

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	clear
Color	dark brown
Aroma	typical of dark bitter chocolate.
Odor Threshold	No information available

Property	**Values**	**Remarks • Method**
pH	No data available	None known
pH (as aqueous solution)	No data available	None known
Melting/freezing point	No data available	None known
Boiling point/boiling range	No data available	None known
Flash Point	87 °C 188 °F	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		None known
Upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor pressure mm Hg 20°C	No data available	None known
Vapor density	No data available	None known
None known		None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition Temperature VALUE	No data available	None known
Viscosity, kinematic	No data available	None known
Viscosity, dynamic	No data available	None known

9.2. Other information

Specific Gravity @ 25C	1.0018 - 1.2018 FCC Method
Specific Gravity @ 20C	1.0048 - 1.2048 FCC Method
Refractive Index @ 20C	1.4401 - 1.4601 FCC Method

9.2.1. Information with regard to physical hazard classes

Not applicable

9.2.2. Other safety characteristics
No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous Decomposition Products None known based on information supplied.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity

Numerical measures of toxicity
No information available

99.9604 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
99.9604 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
99.9604 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).
99.9604 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).
99.9604 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
PROPYLENE GLYCOL	20000 mg/kg (Rat)	20800 mg/kg (Rabbit)	-
Trade Secret	1580 mg/kg (Rat)	5010 mg/kg (Rabbit)	-
Isovaleraldehyde	5600 mg/kg (Rat)	2730 mg/kg (Rabbit)	42700 mg/m^3 (Rat) 4 h
2, 3, 5 TRIMETHYL PYRAZINE	806 mg/kg (Rat)	-	-
ETHYL MALTOL	1150 mg/kg (Rat)	5 g/kg (Rabbit)	-
Guaiacol	520 mg/kg (Rat)	4600 mg/kg (Rabbit)	-
BENZALDEHYDE	800 mg/kg (Rat)	1250 mg/kg (Rabbit)	-
PHENYL ETHYL ACETATE	3670 mg/kg (Rat)	6210 mg/kg (Rabbit)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Unknown aquatic toxicity Contains 69.9604 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
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
Trade Secret	-	53-61.3: 96 h Pimephales promelas mg/L LC50 flow-through 57: 96 h Pimephales promelas mg/L LC50 semi-static 88: 96 h Pimephales promelas mg/L LC50 static	-	180: 24 h Daphnia magna 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
Guaiacol	-	-	EC50 = 1800 mg/L 48 h EC50 = 227 mg/L 210 min	25.9: 48 h Daphnia magna mg/L EC50
BENZALDEHYDE	-	0.8-1.44: 96 h Lepomis macrochirus mg/L LC50 flow-through 10.6-11.8: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 12.69: 96 h Oncorhynchus mykiss mg/L LC50 static 6.8-8.53: 96 h Pimephales promelas mg/L LC50 flow-through 7.5: 96 h Lepomis macrochirus mg/L LC50 static	EC50 = 4.85 mg/L 30 min EC50 = 5.08 mg/L 15 min EC50 = 6.11 mg/L 5 min	50: 24 h Daphnia magna mg/L EC50

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

Chemical name	Partition coefficient
Trade Secret	1.23
Isovaleraldehyde	1.31
Guaiacol	1.32
BENZALDEHYDE	1.48

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. 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. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

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

ICAO/IATA

14.1 UN number or ID number Not regulated

14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazard Not applicable
14.6 Special precautions for user Special Provisions None

IMDG / IMO

14.1 UN number or ID number Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing Group Not regulated
14.5 Environmental hazard Not applicable
14.6 Special precautions for user Special Provisions None
14.7 Maritime transport in bulk according to IMO instruments No information available

DOT/ADR/RID

Not regulated
14.1 UN/ID No Not regulated
Proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated

14.4 Packing Group	Not regulated
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	
Special Provisions	None

SECTION 15: Regulatory information

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

Chemical name	Germany - Water Classification -Annex 2
PROPYLENE GLYCOL	class 1
Trade Secret	class 1
Isovaleraldehyde	class 2
2, 3, 5 TRIMETHYL PYRAZINE	class 3
ETHYL MALTOL	class 1
ISOVALERIC ACID	class 1
Guaiacol	class 1
MASSOIA LACTONE	class 2
BENZALDEHYDE	class 1
PHENYL ETHYL ACETATE	class 1

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	-
AIIC	-

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

Chemical Safety Assessment No information available

SECTION 16: Other information

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

Legend
SVHC: Substances of Very High Concern for Authorization:
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapor	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitization	Calculation method
Skin sensitization	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Health hazards not otherwise classified (HHNOC)	Calculation method

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Revision Date 11-Aug-2023

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)
Disclaimer
The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

End of Safety Data Sheet

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.