SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006, as amended

AROMA-143 CARAMEL AROMA SC 335339

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	03.12.2024	300000211115	Date of first issue: 03.12.2024

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

1.1 Product identifier

Trade name : AROMA-143 CARAMEL AROMA SC 335339

UFI : NXYA-2A74-0008-VH4P
Sales Number : SC335339

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

Use of the Sub-stance/Mixture : Flavor for consumer product

1.3 Details of the supplier of the safety data sheet

Company : IFF (NEDERLAND) BV
ZEVENHEUVELENWEG 60
5048 AN TILBURG

Telephone : +31134642211

Telefax : +31134636032

E-mail address of person responsible for the SDS : [redacted]@iff.com

1.4 Emergency telephone number

NVIC: [redacted] UITSLUITEND BESTEMD OM PROFESSIONELE HULPVERLENERS TE INFORMEREN BIJ ACUTE VERGIFTIGINGEN.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.

Precautionary statements : **Prevention:**
P261 Avoid breathing mist or vapours.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.

Response:
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

513-86-0	Acetoin
3658-77-3	4-hydroxy-2,5-dimethylfuran-2(3H)-one
80-71-7	2-hydroxy-3-methylcyclopent-2-enone
119-84-6	3,4-dihydrocoumarin
600-14-6	pentane-2,3-dione

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Acetoin	513-86-0 208-174-1	Flam. Liq. 3; H226	>= 3 - < 10

		STOT RE 2; H373 (Respiratory system) Eye Dam. 1; H318	
4-hydroxy-2,5-dimethylfuran-2(3H)-one	3658-77-3 222-908-8 01-2120754473-52	Skin Sens. 1A; H317 Eye Dam. 1; H318 Skin Corr. 1B; H314 Acute Tox. 4; H302	>= 3 - < 5
2-hydroxy-3-methylcyclopent-2-enone	80-71-7 201-303-2	Skin Sens. 1; H317 Acute Tox. 4; H302	>= 1 - < 10
butyric acid	107-92-6 203-532-3 607-135-00-X 01-2119488986-11	Skin Corr. 1B; H314 Eye Dam. 1; H318 Acute Tox. 4; H302	>= 1 - < 3
3-hydroxy-2-methyl-4-pyrone	118-71-8 204-271-8 01-2120766007-55	Acute Tox. 4; H302	>= 1 - < 10
2-furaldehyde	98-01-1 202-627-7 605-010-00-4	Acute Tox. 2; H330 Acute Tox. 3; H301 Acute Tox. 4; H312 Eye Irrit. 2; H319 Skin Irrit. 2; H315 Carc. 2; H351 STOT SE 3; H335 Aquatic Chronic 3; H412 Flam. Liq. 3; H226	>= 0,25 - < 1
3,4-dihydrocoumarin	119-84-6 204-354-9	Acute Tox. 4; H302 Skin Sens. 1B; H317 Aquatic Chronic 3; H412 M-Factor (Acute aquatic toxicity): 1	>= 0,1 - < 0,25
pentane-2,3-dione	600-14-6 209-984-8	Flam. Liq. 2; H225 Skin Sens. 1B; H317 STOT RE 2; H373 Eye Dam. 1; H318	>= 0,1 - < 1

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Take Hazard and Precautionary phrases (section 2) into account.

If inhaled : Remove from exposure site to fresh air and keep at rest. Obtain medical advice.

In case of skin contact : Remove contaminated clothes. Wash thoroughly with water (and soap). Contact physician if symptoms persist.

In case of eye contact	:	Flush immediately with water for at least 15 minutes. Contact physician if symptoms persist.
If swallowed	:	Rinse mouth with water and obtain medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Risks	:	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Carbondioxide, dry chemical, foam.
Unsuitable extinguishing media	:	Do not use a direct waterjet on burning material.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting	:	Water may be ineffective.

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Standard procedure for chemical fires.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Avoid inhalation and contact with skin and eyes. A self-contained breathing apparatus is recommended in case of a major spill. Prevent spreading over a wide area (e.g. by containment or oil barriers).

6.2 Environmental precautions

Environmental precautions	:	Keep away from drains, surface- and groundwater and soil.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Clean up spillage promptly. Remove ignition sources. Provide adequate ventilation. Avoid excessive inhalation of vapours.

Gross spillages should be contained by use of sand or inert powder and disposed of according to the local regulations.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid excessive inhalation of concentrated vapors. Follow good manufacturing practices for housekeeping and personal hygiene. Wash any exposed skin immediately after any chemical contact, before breaks and meals, and at the end of each work period. Contaminated clothing and shoes should be thoroughly cleaned before re-use.

If appropriate, procedures used during the handling of this material should also be used when cleaning equipment or removing residual chemicals from tanks or other containers, especially when steam or hot water is used, as this may increase vapor concentrations in the workplace air. Where chemicals are openly handled, access should be restricted to properly trained employees.
Keep all heated processes at the lowest necessary temperature in order to minimize emissions of volatile chemicals into the air.

Advice on protection against fire and explosion : Keep away from ignition sources and naked flame.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in a cool, dry, ventilated area away from heat sources. Keep containers upright and tightly closed when not in use.

7.3 Specific end use(s)

Specific use(s) : No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
pentane-2,3-dione	600-14-6	STEL	0,031 ppm	IFF internal occupational exposure limit
		TWA	0,0093 ppm	IFF internal occupational exposure limit

8.2 Exposure controls

Engineering measures

Where appropriate, use closed systems to transfer and process this material.
If appropriate, isolate mixing rooms and other areas where this material is used or openly handled. Maintain these areas under negative air pressure relative to the rest of the plant.

Personal protective equipment

Eye protection	:	Use tight-fitting goggles, face shield or safety glasses with side shields if eye contact might occur. Equipment should conform to EN 166
Hand protection		
Material	:	Nitrile rubber
Break through time	:	> 60 min
Glove thickness	:	0,38 mm
Material	:	Nitrile rubber
Break through time	:	> 10 min
Glove thickness	:	0,1 mm
Remarks	:	Avoid skin contact. Use chemically resistant gloves. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g. temperature). Please observe the instructions regarding permeability and break-through time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Respiratory protection	:	Use local exhaust ventilation around open tanks and other open sources of potential exposures in order to avoid excessive inhalation, including places where this material is openly weighed or measured. In addition, use general dilution ventilation of the work area to eliminate or reduce possible worker exposures. No respiratory protection is required during normal operations in a workplace where engineering controls such as adequate ventilation, etc. are sufficient. If engineering controls and safe work practices are not sufficient, an approved, properly fitted respirator with organic va-

por cartridges or canisters and particulate filters should be used:

a)while engineering controls and appropriate safe work practices and/or procedures are being implemented; or
b)during short term maintenance procedures when engineering controls are not in normal operation or are not sufficient; or
c)if normal operational workplace vapor concentration in the air is increased due to heat ;
d)during emergencies; or
e)if engineering controls and operational practices are not sufficient to reduce airborne concentrations below an established occupational exposure limit.

Protective measures : To the extent deemed appropriate, implement pre-placement and regularly scheduled ascertainment of symptoms and spirometry testing of lung function for workers who are regularly exposed to this material.
To the extent deemed appropriate, use an experienced air sampling expert to identify and measure volatile chemicals that could be present in the workplace air to determine potential exposures and to ensure the continuing effectiveness of engineering controls and operational practices to minimize exposure.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	colorless to pale yellow
Odour	:	conforms to standard
Odour Threshold	:	not determined
Melting point	:	not determined
Boiling point	:	not determined
Flammability	:	not determined
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Flash point	:	97,00 °C Method: closed cup
Auto-ignition temperature	:	not determined
Decomposition temperature	:	not determined
pH	:	not determined
Viscosity, dynamic	:	not determined
Viscosity, kinematic	:	not determined
Water solubility	:	not determined

Solubility in other solvents	:	not determined
Partition coefficient: n-octanol/water	:	not determined
Vapour pressure	:	0,13 hPa (20 °C) Calculated
Relative density	:	1,1341 - 1,1541
Density	:	not determined

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazards to be specially mentioned.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Presents no significant reactivity hazard, by itself or in contact with water.

10.4 Conditions to avoid

Conditions to avoid	:	Direct sources of heat.

10.5 Incompatible materials

Materials to avoid	:	Avoid contact with strong acids, alkali or oxidizing agents.

10.6 Hazardous decomposition products

Carbon monoxide and unidentified organic compounds may be formed during combustion.

SECTION 11: Toxicological information

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

Acute toxicity

Not classified due to lack of data.

Product:

Acute oral toxicity	:	Acute toxicity estimate: > 2.000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: > 20 mg/l Exposure time: 4 h Test atmosphere: vapour Method: Calculation method

Skin corrosion/irritation

Causes skin irritation.

Components:

butyric acid:

Species	:	human
Exposure time	:	48 h
Method	:	closed patch test
Result	:	No skin irritation

Species	:	Rabbit
Exposure time	:	24 h
Result	:	Severe skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified due to lack of data.

Components:

butyric acid:

Test Type	:	maximisation study
Species	:	human
Result	:	Did not cause sensitisation on laboratory animals.
Test substance	:	1.0% in petrolatum

Germ cell mutagenicity

Not classified due to lack of data.

Carcinogenicity

Not classified due to lack of data.

Reproductive toxicity

Not classified due to lack of data.

STOT - single exposure

Not classified due to lack of data.

STOT - repeated exposure

Not classified due to lack of data.

Aspiration toxicity

Not classified due to lack of data.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

Product:

Mobility : Remarks: No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : There is no data available for this product.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number or ID number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 75, 3 butyric acid 2-furaldehyde vanillin 3,4-dihydrocoumarin
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EC) on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollu-	:	Not applicable

tants (recast)

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance.

SECTION 16: Other information

Full text of H-Statements

H225	:	Highly flammable liquid and vapour.
H226	:	Flammable liquid and vapour.
H301	:	Toxic if swallowed.
H302	:	Harmful if swallowed.
H312	:	Harmful in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H330	:	Fatal if inhaled.
H335	:	May cause respiratory irritation.
H351	:	Suspected of causing cancer.
H373	:	May cause damage to organs through prolonged or repeated exposure if inhaled.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Carc.	:	Carcinogenicity
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
Skin Corr.	:	Skin corrosion
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure
STOT SE	:	Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Test-

ing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Substance name	EC-No.
Acetoin	208-174-1
butyric acid	203-532-3

Other information : In December 2003, the National Institute for Occupational Safety and Health ("NIOSH") published an Alert on preventing lung disease in workers who use or make flavorings [NIOSH Publication Number 2004-110].
In August 2004, the United States Flavor and Extract Manufacturers Association (FEMA) issued a report entitled "Respiratory Safety in the Flavor Manufacturing Workplace".
Both of these reports provide recommendations for reducing employee exposure and for medical surveillance in the workplace. The recommendations in these reports are generally applicable to the use of any chemical in the workplace and you are strongly urged to review both of these reports.
The report published by FEMA also contains a list of "high priority" chemicals. If any of these chemicals are present in this product at a concentration >= 1.0% due to an intentional addition by IFF, the chemical(s) will be identified in this safety data sheet.

According to Regulation (EC) No. 1907/2006 the information in this safety data sheet is based on the properties of the ma-

terial known to IFF at the time the data sheet was issued. The safety data sheet is intended to provide information for a health and safety assessment of the material and the circumstances, under which it is packaged, stored or applied in the workplace. For such a safety assessment International Flavors & Fragrances holds no responsibility. This document is not intended for quality assurance purposes.

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.

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