

Firmenich

Safety Data Sheet

According to Regulation HCS 2012

This Safety Data Sheet cancels and replaces all preceding SDS for this product.

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

051182 C
ARTIFICIAL LIME FLAVOR
© Firmenich product

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

Ingredient for use in products that may be ingested.
Not for personal use in this form or concentration.
Intended to be used in the manufacture of products for consumers.

1.3 Details of the supplier of the safety data sheet

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1.4 Emergency telephone number

FOR INFORMATION OR IN AN EMERGENCY CALL CHEMTREC @ 1-800-424-9300 or 1-703-527-3887.

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

According to Regulation HCS 2012

| | |
|---|------|
| Flammable Liquid - Cat. 2 | H225 |
| Aspiration Hazard - Cat. 1 | H304 |
| Skin Irritation - Cat. 2 | H315 |
| Skin Sensitization - Cat. 1 | H317 |
| Eye Irritation - Cat.2A | H319 |
| Environmental Hazard (chronic) - Cat. 2 | H411 |

Additional information

Full text of listed statements : See section 16

2.2 Label elements

Hazard pictograms:

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Signal Word:

Danger

Hazard Statements:

| | |
|------|--|
| H225 | Highly flammable liquid and vapour. |
| H304 | May be fatal if swallowed and enters airways. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H411 | Toxic to aquatic life with long lasting effects. |

Precautionary Statements:

| | |
|------|--|
| P210 | Keep away from heat/sparks/open flames/hot surfaces. No smoking. |
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| P264 | Wash thoroughly after handling. |
| P273 | Avoid release to the environment. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P240 | Ground/bond container and receiving equipment. |

2.3 Other hazards

No data available at this time.

3 COMPOSITION/INFORMATION ON INGREDIENTS

The exact percentage (concentration) of composition has been withheld as a trade secret.

3.2 Mixture

Mixture of aromatic substances.

Contains :

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$\geq 50.0 < 60.0\%$

Ethanol

N° CAS : 0000064-17-5

N° EINECS: 200-578-6

Classification: F Xi - R11,R36

GHS Classification:

Eye Irritation - Cat.2A [H319]

Flammable Liquid - Cat. 2 [H225]

$\geq 15.0 < 20.0\%$

Limonene

N° CAS : 0000138-86-3

N° EINECS: 205-341-0

Classification: Xn N - R38,R43,R50/53,R65,R10

GHS Classification:

Aspiration Hazard - Cat. 1 [H304]

Skin Sensitization - Cat. 1B [H317]

Skin Irritation - Cat. 2 [H315]

Environmental Hazard (acute) - Cat. 1 [H400]

Environmental Hazard (chronic) - Cat. 1 [H410]

Flammable Liquid - Cat. 3 [H226]

$\geq 2.5 < 5.0\%$

Benzene, 1-Methyl-4-(1-Methylethyl)-

N° CAS : 0000099-87-6

N° EINECS: 202-796-7

Classification: Xn N - R51/53,R65,R10

GHS Classification:

Aspiration Hazard - Cat. 1 [H304]

Environmental Hazard (chronic) - Cat. 2 [H411]

Flammable Liquid - Cat. 3 [H226]

$\geq 1.0 < 2.5\%$

Terpineol

N° CAS : 0008000-41-7

N° EINECS: 232-268-1

Classification: Xi - R36/38

GHS Classification:

Skin Irritation - Cat. 2 [H315]

Eye Irritation - Cat.2A [H319]

Flammable Liquid - Cat. 4 [H227]

$\geq 1.0 < 2.5\%$

1,4-Cyclohexadiene, 1-Methyl-4-(1-Methylethyl)-

N° CAS : 0000099-85-4

N° EINECS: 202-794-6

Classification: Xn - R65

GHS Classification:

Aspiration Hazard - Cat. 1 [H304]

Flammable Liquid - Cat. 3 [H226]

$\geq 0.5 < 1.0\%$

2-

Oxabicyclo[2.2.2]Octane, 1,3,3-Trimethyl-

N° CAS : 0000470-82-6

N° EINECS: 207-431-5

Classification: Xi - R10,R43

GHS Classification:

Skin Sensitization - Cat. 1B [H317]

Flammable Liquid - Cat. 3 [H226]

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$\geq 0.1 < 0.5\%$

Cyclohexene, 1-Methyl-
4-(1-Methylethylidene)-
N° CAS : 0000586-62-9
N° EINECS: 209-578-0

Classification: Xn N - R10,R65,R43,R50/53

GHS Classification:

Aspiration Hazard - Cat. 1 [H304]
Skin Sensitization - Cat. 1B [H317]
Environmental Hazard (acute) - Cat. 1 [H400]
Environmental Hazard (chronic) - Cat. 1 [H410]
Flammable Liquid - Cat. 4 [H227]

$\geq 0.1 < 0.5\%$

Bicyclo[3.1.1]Heptane,
6,6-Dimethyl-2-
Methylene-
N° CAS : 0000127-91-3
N° EINECS: 204-872-5

Classification: Xn - R43,R65,R10,R38

GHS Classification:

Aspiration Hazard - Cat. 1 [H304]
Skin Sensitization - Cat. 1B [H317]
Skin Irritation - Cat. 2 [H315]
Flammable Liquid - Cat. 3 [H226]

4 FIRST-AID MEASURES

4.1 Description of first aid measures

General information:

As in all cases of potential poisoning, Obtain medical advice immediately.

In case of eye contact:

In the event of contact with the eyes, irrigate with water for at least 15 minutes; obtain medical advice if irritation persists.

In case of inhalation:

In the event of exposure to vapors, immediately remove from the area to a fresh air environment. Individuals showing evidence of inhalation exposure should be taken to an uncontaminated area. Obtain medical advice immediately.

In case of skin contact:

Remove contaminated clothes. Wash skin with large volumes of water. If irritation persists, or any sign of tissue damage is apparent, obtain medical advice immediately.

In case of ingestion:

In the event of accidental ingestion, rinse mouth with water. Give up to one tumbler (half pint) of milk or water. Obtain medical advice immediately. Do not induce vomiting, obtain medical advice immediately.

4.2 Most important symptoms and effects, both acute and delayed

No information available on the product itself.

4.3 Indication of immediate medical attention and special treatment needed

None known.

5 FIRE-FIGHTING MEASURES

5.1 Extinguishing media

In the event of fire, adequate extinguishers should be used. Avoid inhalation of smoke and fumes. In case of insufficient ventilation, wear suitable respiratory equipment.

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Cool fire exposed containers with water spray.
Extinguishing media: Foam, carbon dioxide or dry chemical.

5.2 Special hazard arising from the substance or mixture

Closed containers may build up pressure if exposed to heat (fire). Vapors form explosive mixtures with air and may travel to a source of ignition and flash back.

5.3 Advice for fire-fighters

No specific advice.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

Adequate protective gloves should be worn when handling spillages. No smoking. Avoid naked flames or other potential sources of ignition (eg. electrical equipment).

Avoid skin contamination and inhalation of vapour.

Individual washing routines should be followed after any potential contact.

Ensure adequate ventilation in working areas following accidental releases.

For emergency personnel:

Apply the same recommendations as section 6.1

6.2 Environmental precautions

Do not discharge directly into drains, air, into soil or into the aquatic environment.

6.3 Methods and material for containment and cleaning up

For containment:

Eliminate all sources of ignition. Leaking containers should be removed to a well ventilated area if possible to do safely. If not, dike around container to limit spread of spill, leak. If spill/leak is small, clean up with standard absorbents (sand, vermiculite, etc.). Wear rubber gloves. Avoid contact with skin. If skin contact occurs, wash liberally with soap and water. See Section VI above. If large leak/spill, call HAZMAT Team.

Vapors may cause vomiting and nausea. Wear appropriate respiratory protection.

For cleaning-up:

Spillages should be disposed of in accordance with Governmental Regulations.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes.

Wear adequate protective gloves protection and eye/face protection.

No smoking. Avoid any sources of ignition.

Avoid exposing to high temperature during processing.

Do not ingest or apply to the skin as such. Good personal washing routines should be followed.

Maintain adequate local and general ventilation where product is handled.

Protective measures

Keep strict control of dust accumulation to a minimum. Maintain adequate local and general ventilation where product is handled. Avoid any sources of ignition.

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Advice on general occupational hygiene

Good personal washing routines should be followed.

7.2 Conditions for safe storage, including any incompatibilities

It is good general practice to store in closed, preferably full, containers away from heat sources, and protected from extremes of temperature. Do not re-use the empty container.

Respect general rules for compatibility storage.

7.3 Specific end use(s)

Not available at this time.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

0000064-17-5 : ETHYL ALCOHOL (All forms)

National Institute for Occupational Safety and Health (NIOSH) Recommended Exposure Limits (REL)
(2010-SEP)

TWA (1994-JUN) : 1000 ppm , 10 hours (All forms)

TWA (1994-JUN) : 1900 mg/m³ , 10 hours (All forms)

0000064-17-5 : Ethanol (All forms)

American Conference of Governmental Industrial Hygienists (ACGIH) - Threshold Limit Values (TLV)
(2008-NOV)

STEL (2008-NOV) : 1000 ppm , 15 minutes (All forms)

0000064-17-5 : Ethyl alcohol (All forms)

Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1001 to 1910.1048 - Substance-Specific Standards (1993-JUN)

TWA (1993-JUN) : 1000 ppm , 8 hours (All forms)

TWA (1993-JUN) : 1900 mg/m³ , 8 hours (All forms)

0000064-17-5 : Ethyl alcohol (Ethanol) (All forms)

Occupational Safety and Health Administration (OSHA) (29 CFR 1910.1000 Z-1-A) - Permissible Exposure Limits - 1989 vacated values (1989-MAR)

TWA (1989-MAR) : 1000 ppm , 8 hours (All forms)

TWA (1989-MAR) : 1900 mg/m³ , 8 hours (All forms)

0000127-91-3 : beta-Pinene (All forms)

American Conference of Governmental Industrial Hygienists (ACGIH) - Threshold Limit Values (TLV)
(2003-JAN)

TWA (2003-JAN) : 20 ppm , 8 hours (All forms)

0000138-86-3 : d-Limonene (All forms)

American Industrial Hygiene Association (AIHA) - Workplace Environmental Exposure Levels (WEEL)
(1999-JAN)

TWA (1999-JAN) : 30 ppm , 8 hours (All forms)

8.2 Exposure controls

Avoid exposing to high temperature during processing.

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Maintain adequate local and general ventilation where product is handled.

Appropriate engineering controls

Maintain adequate local and general ventilation where product is handled and dispensed.

Environmental exposure controls

Not available at this time. Minimize release to the environment.

Personal protection

Respiratory protection: Breathing of the vapors or dust particles may be hazardous. In the absence of appropriate engineering controls such as spot ventilation, ventilated enclosures, etc., workers should avail themselves of the appropriate NIOSH approved respiratory protection.

Hand protection: Adequate Protective Gloves should be worn.

Eye protection: Adequate safety glasses should be used.

Skin protection: Wear protective clothing, overall if necessary to limit the odour contamination of personal clothing. Individual washing routines should be followed after any potential contact.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Appearance : | CLEAR TO SLIGHTLY CLOUDY LIQUID |
| Colour : | COLOURLESS |
| Odour : | Characteristic strong odour according to the commercial description of the substance. |
| pH : | Not available |
| Melting point/range (°C) : | Not available |
| Initial boiling point/range (°C) : | > 40°C |
| Flash point (closed cup) : | = 63 Fahrenheit (= 17 Centigrade) |
| Evaporation rate : | Not available |
| Flammability (solid/gas) : | Not available |
| Upper/lower flammability or explosive limits : | |
| Vapor pressure (At 20°C in mm Hg) : | |
| Calculated vapor pressure (At 20°C in mm Hg): | 68.3 |
| Vapour density : | Not available |
| Relative density (d 20/20) : | 0.857 - 0.867 |
| Water solubility (20°C) : | Not applicable |
| Partition coef. (n-octanol/water) : | Not applicable |
| Auto-ignition temperature (°C): | Not available |
| Decomposition temperature : | Not available |
| Viscosity : | Not available |
| Explosive properties : | Not available |
| Oxidizing properties : | Not available |
| VOC Content less than: | 78% |

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10 STABILITY AND REACTIVITY

10.1 Reactivity

No reaction known with water.

10.2 Chemical stability

Presents no significant reactivity hazard. Normally stable even at elevated temperatures and pressures. Avoid temperatures above or near to the flash point. Not pyrophoric nor reactive with water. Does not undergo explosive decomposition, is shock stable, and is not an oxygen donor. Does not form explosive mixtures with other organic materials. Will not undergo hazardous exothermic polymerization.

10.3 Possibility of hazardous reactions

Not known.

10.4 Conditions to avoid

Avoid temperatures above or at least 5 °C below flash point for any flammable liquids.
Do not heat closed containers.
Avoid contact with oxidizing agents.

10.5 Incompatible materials

Avoid strong oxidizing agents.

10.6 Hazardous decomposition products

Contact with water or storage under recommended conditions for one year should not produce dangerous decomposition products.

11 TOXICOLOGICAL INFORMATION

This mixture has not been subjected to toxicological testing as an entity. According to available data on the constituents the health classification criteria are met.

12 ECOLOGICAL INFORMATION

This mixture has not been subjected to ecotoxicological testing as an entity. According to available data on the constituents the environmental classification criteria are met.

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product: The product should be handled according to the instructions given under sections 6, 7 and 8. Dispose of according to local or national regulations. The product should not be allowed to enter drains or the environment.

Contaminated packaging: Empty packaging should be disposed according to local or national regulations by an approved waste handling

14 TRANSPORT INFORMATION

In case of accidental spillage or fire during transport, refer to instructions given under points 5, 6, 7 and 8 above.

UNO

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UN-No: 1197
Proper Shipping Name: EXTRACTS, FLAVOURING, LIQUID
Class: 3
Packing Group: II
Hazardous to the Environment

Land transport (ADR/RID)

UN-No: 1197
Proper Shipping Name: EXTRACTS, FLAVOURING, LIQUID (VAPOUR PRESSURE AT 50°C MORE THAN 110 KPA)
Class: 3
Packing group: II

Sea transport (IMDG-Code)

UN-No: 1197
Proper Shipping Name: EXTRACTS, FLAVOURING, LIQUID (LIMONENE)
Class: 3
Packing group: II

Air transport (ICAO-IATA)

UN-No: 1197
Proper Shipping Name: EXTRACTS, FLAVOURING, LIQUID
Class: 3
Packing group: II

15 REGULATORY INFORMATION

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

NFPA Hazard Classification

Health: 2
Flammability: 3
Reactivity: 0

This mixture contains no toxic chemical or chemicals subject to reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 29 CFR Part 1910.1200.

15.2 Chemical Safety Assessment

No data available at this time.

16 OTHER INFORMATION

Revisions

01-Dec-2010: Version 6.1 - First version validated for publication
04-May-2012: Version 6.2 - Updates to sections 1, 2, 3, 8.3, 11, 12, 16.
20-Apr-2013: Version 6.3 - Updates to sections 1, 2, 3, 8.1, 14, 16.

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07-July-2014: Version 6.4- Updates to section 2, 3, 14, 16.

30-May-2015: Version 6.5- Updates to section 2, 3, 7, 8, 9,13,14,16

Key literature references

RIFM database
OECD SIDS
EU IUCLID
Supplier information

Full text of phrases used under section 2

| | |
|----------------|--|
| S16 | Keep away from sources of ignition - No smoking. |
| S24/25 | Avoid contact with skin and eyes. |
| S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |
| S37 | Wear suitable gloves. |
| S57 | Use appropriate container to avoid environmental contamination. |
| S61 | Avoid release to the environment. Refer to special instructions/Safety data sheets. |
| S62 | If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. |
| H225 | Highly flammable liquid and vapour. |
| H304 | May be fatal if swallowed and enters airways. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H411 | Toxic to aquatic life with long lasting effects. |
| P210 | Keep away from heat/sparks/open flames/hot surfaces. No smoking. |
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| P264 | Wash thoroughly after handling. |
| P273 | Avoid release to the environment. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P240 | Ground/bond container and receiving equipment. |
| P241 | Use rated explosion-proof electrical equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P301+P310 | IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. |
| P303+P361+P353 | IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P302+P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P333+P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P370+P378 | In case of fire: Use appropriate fire extinguishers for fire control. |
| P391 | Collect spillage. |
| P331 | Do NOT induce vomiting. |
| P362 | Take off contaminated clothing and wash before reuse. |
| P363 | Wash contaminated clothing before reuse. |

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P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P235 Keep cool.
P337 If eye irritation persists:

Full text of phrases used under section 3

| | |
|--------|--|
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H227 | Combustible liquid |
| H304 | May be fatal if swallowed and enters airways. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects. |
| R10 | Flammable. |
| R11 | Highly flammable. |
| R22 | Harmful if swallowed. |
| R36 | Irritating to eyes. |
| R36/38 | Irritating to eyes and skin. |
| R38 | Irritating to skin. |
| R43 | May cause sensitization by skin contact. |
| R50/53 | Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| R51/53 | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| R65 | Harmful: may cause lung damage if swallowed. |

We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Firmenich, it is the user's obligation to determine conditions of safe use of the product.

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