

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

860100 TD0991
NATURAL ORANGE WONF DURAROME®
© 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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Firmenich Inc.
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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

| | |
|---|------|
| Skin Sensitization - Cat. 1 | H317 |
| Carcinogenicity - Cat. 2 | H351 |
| 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:**

Warning

Hazard Statements:

H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements:

P201 Obtain special instructions before use.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P202 Do not handle until all safety precautions have been read and understood.
P272 Contaminated work clothing should not be allowed out of the workplace.
P281 Use personal protective equipment as required.

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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$\geq 7.5 < 10.0\%$

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]

$\geq 0.1 < 0.5\%$

Acetaldehyde

N° CAS : 0000075-07-0

N° EINECS: 200-836-8

Classification: F+ Xn - R36/37,R40,R12

GHS Classification:

Carcinogenicity - Cat. 2 [H351]

Specific Target Organ Toxicity - Single Exposure - Cat. 3 Respiratory Irritation [H335]

Eye Irritation - Cat.2A [H319]

Flammable Liquid - Cat. 1 [H224]

$\geq 0.1 < 0.5\%$

Silica

N° CAS : 0007631-86-9

N° EINECS: 215-683-2

Classification: - Not Classified

GHS Classification:

-

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.

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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.

Use standard procedures and preferred extinguishing media as stated below.

Extinguishing media: Water, foam, carbon dioxide or dry chemical.

5.2 Special hazard arising from the substance or mixture

Product is a combustible powder. Like all combustible powders, it may form explosive mixtures if suspended in air.

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 dust.

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:

Small Spills can be swept up and disposed of properly.

Do not allow powder to accumulate on horizontal surfaces, as an explosive dust/air mixture could occur if suddenly dispersed into the air.

For cleaning-up:

Spillages should be disposed of in accordance with Governmental Regulations.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Keep strict control of dust accumulation to a minimum.

Avoid contact with skin and eyes.

Wear adequate protective gloves protection and eye/face protection.

No smoking. Avoid any source of ignition. Use flameproof electrical equipment and spark-reduced tools.

Ensure that all equipments are properly bonding and earthing.

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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.

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

0000075-07-0 : Acetaldehyde (All forms)

American Conference of Governmental Industrial Hygienists (ACGIH) - Threshold Limit Values (TLV) (1994-SEP)

C (2012-MAR) : 25 ppm , (All forms)

C (1994-SEP) : 45 mg/m³ , (All forms)

0000075-07-0 : Acetaldehyde (All forms)

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

STEL (1989-MAR) : 150 ppm , 15 minutes (All forms)

STEL (1989-MAR) : 270 mg/m³ , 15 minutes (All forms)

TWA (1989-MAR) : 100 ppm , 8 hours (All forms)

TWA (1989-MAR) : 180 mg/m³ , 8 hours (All forms)

0000075-07-0 : Acetaldehyde (All forms)

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

TWA (1993-JUN) : 200 ppm , 8 hours (All forms)

TWA (1993-JUN) : 360 mg/m³ , 8 hours (All forms)

0007631-86-9 : Silicon dioxide (All forms)

National Institute for Occupational Safety and Health (NIOSH) Recommended Exposure Limits (REL) (2013-APR)

TWA (1994-JUN) : 6 mg/m³ , 10 hours (All forms)

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

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

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

8.2 Exposure controls

Avoid exposing to high temperature during processing.
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. OSHA has established limits for Respirable dust (PEL of 5 mg/m³) TWA and Total dust (PEL of 15 mg/m³)TWA. It is recommended that when using powders that air monitoring of the workplace be conducted to ensure that these levels are not exceeded.

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 : | GRANULAR POWDER |
| Colour : | YELLOW |
| Odour : | Characteristic strong odour according to the commercial description of the substance. |
| pH : | Not applicable |
| Melting point/range (°C) : | Not available |
| Initial boiling point/range (°C) : | Not available |
| Flash point (closed cup) : | > 212 Fahrenheit (> 100 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): | < 0.1 mm |
| Vapour density : | Not available |
| Relative density (d 20/20) : | Not available |
| Water solubility (20°C) : | Not applicable |
| Partition coef. (n-octanol/water) : | Not applicable |

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| | |
|---------------------------------|---------------|
| Auto-ignition temperature (°C): | Not available |
| Decomposition temperature : | Not available |
| Viscosity : | Not available |
| Oxidizing properties : | Not available |
| VOC Content less than: | 9% |

9.2 Other safety information

9.2.1 Explosive properties (Measured)

No data available at this time.
Please refer to section 9.2.2.

9.2.2 Default Safety Data for Spray Dryer Dust Compounds

Using our experience in Powder operations and internal laboratory testing, we established the following Default Safety Data. This default data represents conservative worst-case values for the listed parameters. This data may be carefully used as guidance in the absence of measured data. Default data should not be used directly for production, storage, transportation or any other industrial purpose. In all cases, actual testing is the best way to obtain specific data on our compounds.

| Type | Value | Units |
|--|----------------|----------|
| - Particle size distribution | > 150 | microns |
| - Moisture content | < 8 | % |
| - Minimum explosible concentration | Not applicable | g/m3 |
| - Minimum ignition energy of cloud (MIE) | > 1000 | mJ |
| - Minimum ignition energy in layer (MIE) | > 1000 | mJ |
| - Cloud ignition temperature [1] | > 100 | °C |
| - Layer ignition temperature (5 mm layer according to the applicable norm) [2] | MELT | °C |
| - KST | < 300 | bars.m/s |
| - Pmax (abs) | < 11 | Bars |
| - St | 2 | - |
| - Resistivity | > 1.E10 | Ohm.m |

[1] The minimum ignition temperature of a dust cloud is the lowest temperature at which an explosible dust air mixture ignites on contact with a hot surface. Normally the temperature for this powder is not below 120°C and we have to heat up to 200-300°C or higher for possible gas decomposition ignition.

[2] The smoldering /glow temperature can only be determined for substances that do not decompose, melt or evaporate before smoldering. In this case the MSDS indicates "MELT". This powder melts around 120-130°C, before burning can begin.

10 STABILITY AND REACTIVITY

10.1 Reactivity

No reaction known with water.

10.2 Chemical stability

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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

| | |
|-----------------------|--|
| UN-No: | 3077 |
| Proper Shipping Name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (LIMONENE) |
| Class: | 9 |
| Packing Group: | III |

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Hazardous to the Environment

Land transport (ADR/RID)

UN-No: 3077
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(LIMONENE)
Class: 9
Packing group: III

Sea transport (IMDG-Code)

UN-No: 3077
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(LIMONENE)
Class: 9
Packing group: III
Marine pollutant

Air transport (ICAO-IATA)

UN-No: 3077
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(LIMONENE)
Class: 9
Packing group: III

15 REGULATORY INFORMATION

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

NFPA Hazard Classification

Health: 2
Flammability: 1
Reactivity: 0

This mixture contains a 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 1910.1200.

0.6% Acetaldehyde,
CAS# 75-07-0,

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

| | |
|-----------|---|
| S24 | Avoid contact with skin. |
| 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. |
| H317 | May cause an allergic skin reaction. |
| H351 | Suspected of causing cancer /\$#GHS_ROE#\$/. |
| H411 | Toxic to aquatic life with long lasting effects. |
| P201 | Obtain special instructions before use. |
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| P273 | Avoid release to the environment. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P281 | Use personal protective equipment as required. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P302+P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P333+P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P391 | Collect spillage. |
| P363 | Wash contaminated clothing before reuse. |
| P405 | Store locked up. |
| P308 | IF exposed or concerned: |

Full text of phrases used under section 3

| | |
|------|---|
| H224 | Extremely flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H304 | May be fatal if swallowed and enters airways. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H351 | Suspected of causing cancer. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| R10 | Flammable. |
| R38 | Irritating to skin. |
| R43 | May cause sensitization by skin contact. |

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| | |
|--------|--|
| R50/53 | Very 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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