

# Firmenich

## GHS Safety Data Sheet - US

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

**943881**  
FURANEOL  
© Firmenich product

CAS No: 3658-77-3  
EC No: 222-908-8  
REACH No: 01-2120754473-52

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

Ingredient for use in products that may be ingested and/or fragrance ingredient for use in consumer product.  
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

Firmenich Incorporated  
250 Plainsboro Road  
Princeton  
New Jersey 08536  
USA  
Tel: +1 609 452 10 00

GRS.Flavor.NAM@firmenich.com

#### 1.4 Emergency telephone number

FOR INFORMATION OR IN AN EMERGENCY CALL NCEC @ +1 866 928 0789 (TOLL FREE) OR +1 215 207 0061.

### **2 HAZARDS IDENTIFICATION**

#### 2.1 Classification of the substance or mixture

According to Regulation HCS 2012

Acute Toxicity (oral) - Cat. 4	H302
Skin Corrosion - Cat. 1B	H314
Skin Sensitization - Cat. 1A	H317
Eye Damage - Cat.1	H318

#### Additional information

Full text of listed statements : See section 16

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### 2.2 Label elements

#### Hazard pictograms:



**Signal Word:**  
Danger

#### Hazard Statements:

H314 Causes severe skin burns and eye damage.  
H302 Harmful if swallowed.  
H317 May cause an allergic skin reaction.

#### Precautionary Statements:

P260 Do not breathe dust.  
P261 Avoid breathing dust.  
P264 Wash thoroughly after handling.  
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P303+P361+P353 IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower.  
P405 Store locked up.

### 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.

### 3.1 Substance

Chemical substance.

#### Contains :

>= 99.0 <= 100.0%  
3(2h)-Furanone, 4-Hydroxy-2,5-Dimethyl-  
N° CAS : 0003658-77-3  
N° EINECS: 222-908-8  
N° EU REACH: 01-2120754473-52

#### GHS Classification:

Skin Corrosion - Cat. 1B [H314]  
Eye Damage - Cat.1 [H318]  
Skin Sensitization - Cat. 1A [H317]  
Acute Toxicity (oral) - Cat. 4 [H302]

## 4 FIRST-AID MEASURES

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### 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.

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 specific data available.

### 4.3 Indication of immediate medical attention and special treatment needed

No specific data available.

## **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:

Gloves impervious to the chemical substance 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.

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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 gloves impervious to the chemical substance 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.

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

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Contains no substances with occupational exposure limit values

### Derived No Effect Level (DNEL)

No data available

### Predicted No Effect Concentration (PNEC)

No data available

### 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/m<sup>3</sup>) TWA and Total dust (PEL of 15 mg/m<sup>3</sup>)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: Gloves impervious to the chemical substance 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 :	POWDER
Colour :	WHITE TO PALE YELLOW
Odour :	Characteristic strong odour according to the commercial description of the substance.
pH :	Not applicable
Melting point/range (°C) :	= 78 - 80 °C
Initial boiling point/range (°C) :	= 230 °C at 1013hPa (OECD 103)
Flash point (closed cup) :	> 212 Fahrenheit (> 100 Centigrade)
Evaporation rate :	Not available
Flammability (solid/gas) :	Not applicable
Explosive properties (St class) :	N/A
Vapor pressure (At 20°C in mm Hg) :	< 0.1 mm
Vapour density :	Not available

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Relative density (d 20/20) :	= 1.3217 at 20°C (OECD 109)
Water solubility (20°C) :	= 315000 mg/l at 25°C (OECD 105)
Partition coef. (n-octanol/water) :	Log Kow = 0.95 (OECD 107)
Auto-ignition temperature (°C) :	Not available
Decomposition temperature :	Not available
Viscosity :	Not available
Oxidizing properties :	Not available

### 9.2 Other safety information

#### 9.2.1 Explosive properties (Measured)

No data available at this time.

## **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**

### **11.1 Information on toxicological effects**

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(a) acute toxicity

Acute oral toxicity (Rat and Mouse): LD50 < 2000 mg/kg (Conclusion of the weight of evidence based on 3 studies)

(b) skin corrosion/irritation

In vitro Skin Corrosion - Human skin model ( OECD 431): Corrosive

(c) serious eye damage/irritation

Isolated Chicken Eye test method for identifying ocular corrosives and severe irritant (OECD 438): Serious eye damage

(d) respiratory or skin sensitisation

Local Lymph Node Assay (LLNA) OECD 429:

(e) germ cell mutagenicity

Bacterial Reverse Mutation test (Ames) (E. Coli, OECD 471, With and without S9, 1 strains): Non mutagenic

Rodent Dominant Lethal Test (Rat, OECD 478, Gavage): Non mutagenic

Genetic Toxicity Studies : Non mutagenic (Conclusion of the Weight of Evidence based on in vitro, in vivo studies, carcinogenicity study and information on a thresholded mode of action.)

(f) carcinogenicity

Carcinogenicity Studies (Rat, OECD 451, Dietary, 2 year): NOEL = 200 mg/kg/day, No oncogenic effects

(g) reproductive toxicity

Oral Male Fertility Study (Rat, ICH 4.1.1, Gavage): NOAEL = 1000 mg/kg/day

(h) STOT-single exposure

No data available

(i) STOT-repeated exposure

Repeated Dose 90-Day Oral Toxicity Study in Rodents (Rat, OECD 408, Dietary): NOAEL = 400 mg/kg/day

(j) aspiration hazard

No data available

## **12 ECOLOGICAL INFORMATION**

### 12.1 Toxicity

Alga, Growth Inhibition Test ( iSafeRat® HA-QSAR): 72 h EC50 = 123 mg/l

Daphnia sp. Acute Immobilisation Test (OECD 202, Static): 48h EC50 = 6.8 mg/l

### 12.2 Persistence and degradability

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Biodegradation assessment (Sludge): Readily biodegradable (Conclusion of the Weight of Evidence based on 2 studies)

12.3 Bioaccumulative potential  
Log Kow = 0.95 (OECD 107)

12.4 Mobility in soil  
No data available

12.5 Results of PBT and vPvB assessment  
Not applicable

12.6 Other adverse effects  
No data available

### **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: 1759  
Proper Shipping Name: Corrosive solid, n.o.s. (DIME-4-HYDROXY-3-FURANONE,2,5-)  
Class: 8  
Packing Group: II

#### **Land transport (ADR/RID)**

UN-No: 1759  
Proper Shipping Name: CORROSIVE SOLID, N.O.S. (DIME-4-HYDROXY-3-FURANONE,2,5-)  
Class: 8  
Packing group: II

#### **Sea transport (IMDG-Code)**

UN-No: 1759  
Proper Shipping Name: CORROSIVE SOLID, N.O.S. (DIME-4-HYDROXY-3-FURANONE,2,5-)  
Class: 8



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Packing group: II

### Air transport (ICAO-IATA)

UN-No: 1759  
Proper Shipping Name: Corrosive solid, n.o.s. (DIME-4-HYDROXY-3-FURANONE,2,5-)  
Class: 8  
Packing group: II

## **15 REGULATORY INFORMATION**

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

This chemical is NOT 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

March-2021 : Version 10.1 - Updates to sections 1, 2, 3 ,8 ,9, 11, 12, 14, 15, 16  
September-2021: Version 10.2 - SNUR added

### Key literature references

RIFM database  
OECD SIDS  
EU IUCLID  
Supplier information

### Full text of phrases used under section 2

H314	Causes severe skin burns and eye damage.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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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.
P310	Immediately call a POISON CENTER or doctor/physician.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.

### Full text of phrases used under section 3

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.

**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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