

# Safety Data Sheet

according to 29 CFR 1910.1200(g)

## NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE

Revision date: 04/02/2025

Product code: 317400

Page 1 of 8

### 1. Identification

#### Product identifier

NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE

Substance name: NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE  
CAS No: 3658-77-3

#### Recommended use of the chemical and restrictions on use

##### Use of the substance/mixture

For Flavour use for food and feed only

#### Details of the supplier of the safety data sheet

Company name:	Axxence Aromatic GmbH	
Street:	Tackenweide 28	
Place:	D-46446 Emmerich am Rhein	
Telephone:	+ 49 2822 68561 0	Telefax: + 49 2822 68561 39
E-mail:	info@axxence.com	
Contact person:	Safety Team	Telephone: + 49 2822 68561 0
E-mail:	safety-documentation@axxence.com	
Internet:	www.axxence.de	
Responsible Department:	Safety Management	

**Emergency phone number:** +49 2822 68561 99

### 2. Hazard(s) identification

#### Classification of the chemical

##### **29 CFR Part 1910.1200**

Acute toxicity: Acute Tox. 4 (oral)  
Skin corrosion/irritation: Skin Corr. 1B  
Serious eye damage/eye irritation: Eye Dam. 1  
Respiratory or skin sensitization: Skin Sens. 1A  
Hazardous to the aquatic environment: Aquatic Acute 2

#### Label elements

##### **29 CFR Part 1910.1200**

**Signal word:** Danger

**Pictograms:**



#### **Hazard statements**

Harmful if swallowed  
Causes severe skin burns and eye damage  
May cause an allergic skin reaction  
Toxic to aquatic life

#### **Precautionary statements**

Do not breathe dust/fume/gas/mist/vapors/spray.  
Wash hands thoroughly after handling.  
Avoid release to the environment.  
Wear protective gloves/protective clothing/eye protection/face protection.  
If swallowed: Rinse mouth. Do NOT induce vomiting.  
Call a poison center/doctor if you feel unwell.  
If on skin: Wash with plenty of water/soap..

# Safety Data Sheet

according to 29 CFR 1910.1200(g)

## NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE

Revision date: 04/02/2025

Product code: 317400

Page 2 of 8

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
If skin irritation or rash occurs: Get medical advice/attention.  
If inhaled: Remove person to fresh air and keep comfortable for breathing.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
Store locked up.  
Dispose of contents/container to Organic waste.

### Hazards not otherwise classified

No information available.

## 3. Composition/information on ingredients

### Substances

Sum formula: C<sub>6</sub> H<sub>8</sub> O<sub>3</sub>  
Molecular weight: 128,13 g/mol

### Relevant ingredients

CAS No	Components	Quantity
3658-77-3	NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE	100 %

## 4. First-aid measures

### Description of first aid measures

#### **General information**

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down.

#### **After inhalation**

Provide fresh air. When in doubt or if symptoms are observed, get medical advice.

#### **After contact with skin**

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

#### **After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

#### **After ingestion**

Rinse mouth immediately and drink 1 glass of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk.

### Most important symptoms and effects, both acute and delayed

No information available.

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

Treat symptomatically.

## 5. Fire-fighting measures

### Extinguishing media

#### **Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

### Specific hazards arising from the chemical

Non-flammable.

### Special protective equipment and precautions for fire-fighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

# Safety Data Sheet

according to 29 CFR 1910.1200(g)

## NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE

Revision date: 04/02/2025

Product code: 317400

Page 3 of 8

### Additional information

Suppress gases/vapors/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

#### General advice

Provide adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

#### Environmental precautions

Do not allow to enter into surface water or drains.

### Methods and material for containment and cleaning up

#### For cleaning up

Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal.

#### Other information

Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal.

### Reference to other sections

Safe handling: see section 7

Personal protection equipment (PPE): see section 8

Disposal: see section 13

## 7. Handling and storage

### Precautions for safe handling

#### Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Avoid dust formation. Do not breathe dust.

#### Advice on protection against fire and explosion

No special fire protection measures are necessary.

#### Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

### Conditions for safe storage, including any incompatibilities

#### Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations.

#### Hints on joint storage

No special measures are necessary.

## 8. Exposure controls/personal protection

### Control parameters

### Exposure controls



# Safety Data Sheet

according to 29 CFR 1910.1200(g)

## NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE

Revision date: 04/02/2025

Product code: 317400

Page 4 of 8

### Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe dust.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Suitable eye protection: goggles.

#### Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable gloves type: Disposable gloves + NBR (Nitrile rubber)

#### Skin protection

Use of protective clothing.

#### Respiratory protection

In case of inadequate ventilation wear respiratory protection.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

Physical state:	crystalline
Color:	white to yellow
Melting point/freezing point:	75 - 82 °C
Boiling point or initial boiling point and boiling range:	230 °C
Flammability:	not determined
	not applicable
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Flash point:	N/A
Auto-ignition temperature:	N/A
Decomposition temperature:	not determined
pH-Value:	not determined
Water solubility:	2500 g/l
(at 20 °C)	
Solubility in other solvents	
not determined	
Partition coefficient n-octanol/water:	0,95
Vapor pressure:	not determined
Density:	not determined
Relative vapour density:	not determined

### Other information

#### Information with regard to physical hazard classes

##### Explosive properties

not explosive according to EU A.14

##### Oxidizing properties

The product is not: oxidising.

#### Other safety characteristics

Evaporation rate: not determined

Solid content: 100,00 %

# Safety Data Sheet

according to 29 CFR 1910.1200(g)

## NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE

Revision date: 04/02/2025

Product code: 317400

Page 5 of 8

### 10. Stability and reactivity

#### Reactivity

No hazardous reaction when handled and stored according to provisions.

#### Chemical stability

The product is stable under storage at normal ambient temperatures.

#### Possibility of hazardous reactions

No known hazardous reactions.

#### Conditions to avoid

none

#### Incompatible materials

No information available.

#### Hazardous decomposition products

No known hazardous decomposition products.

### 11. Toxicological information

#### Information on toxicological effects

##### Acute toxicity

Harmful if swallowed

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
3658-77-3	NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE				
	oral	LD50 mg/kg	1608	Mouse	REACH registration OECD Guideline 401

##### Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage

Serious eye damage/eye irritation: Causes serious eye damage

##### Sensitizing effects

May cause an allergic skin reaction (NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE)

##### Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

##### Specific target organ toxicity (STOT) - single exposure

Based on available data, the classification criteria are not met.

##### Specific target organ toxicity (STOT) - repeated exposure

Based on available data, the classification criteria are not met.

Carcinogenicity (OSHA): Not listed.

Carcinogenicity (IARC): Not listed.

Carcinogenicity (NTP): Not listed.

##### Aspiration hazard

Based on available data, the classification criteria are not met.

#### Information on other hazards

##### Endocrine disrupting properties

No information available.

#### Further information

This substance is classified as hazardous according to Regulation (EC) No 1272 (2008).

# Safety Data Sheet

according to 29 CFR 1910.1200(g)

## NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE

Revision date: 04/02/2025

Product code: 317400

Page 6 of 8

### 12. Ecological information

#### Ecotoxicity

The product is not: Ecotoxic.

#### Persistence and degradability

The product has not been tested.

#### Bioaccumulative potential

The product has not been tested.

#### Mobility in soil

The product has not been tested.

#### Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

#### Other adverse effects

No information available.

#### Further information

Avoid release to the environment.

### 13. Disposal considerations

#### Waste treatment methods

##### Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

##### Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled.

### 14. Transport information

#### U.S. DOT 49 CFR 172.101

##### UN number or ID number:

UN 1759

##### Proper shipping name:

CORROSIVE SOLIDS, N.O.S.

##### Transport hazard class(es):

8

##### Packing group:

II

Hazard label:

8



#### Marine transport (IMDG)

##### UN number or ID number:

UN 1759

##### UN proper shipping name:

CORROSIVE SOLID, N.O.S.

##### Transport hazard class(es):

8

##### Packing group:

II

Hazard label:

8



Special Provisions:

274

Limited quantity:

1 kg

Excepted quantity:

E2

EmS:

F-A, S-B

#### Air transport (ICAO-TI/IATA-DGR)

# Safety Data Sheet

according to 29 CFR 1910.1200(g)

## NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE

Revision date: 04/02/2025

Product code: 317400

Page 7 of 8

**UN number or ID number:** UN 1759  
**UN proper shipping name:** CORROSIVE SOLID, N.O.S.  
**Transport hazard class(es):** 8  
**Packing group:** II  
**Hazard label:** 8



**Special Provisions:** A3 A803  
**Limited quantity Passenger:** 5 kg  
**Passenger LQ:** Y844  
**Excepted quantity:** E2  
**IATA-packing instructions - Passenger:** 859  
**IATA-max. quantity - Passenger:** 15 kg  
**IATA-packing instructions - Cargo:** 863  
**IATA-max. quantity - Cargo:** 50 kg

### Environmental hazards

**ENVIRONMENTALLY HAZARDOUS:** No

### Special precautions for user

Warning: strongly corrosive.

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

## 15. Regulatory information

### U.S. Regulations

#### National regulatory information

SARA Section 311/312 Hazards:

NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE (3658-77-3): Immediate (acute) health hazard

### State Regulations

#### Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)

This product can not expose you to chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

## 16. Other information

### Changes

Revision date: 04/02/2025

Revision No: 103

This data sheet contains changes from the previous version in section(s): 2,4,5,6,7,8,9,11,14,16.

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according to 29 CFR 1910.1200(g)

## NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE

Revision date: 04/02/2025

Product code: 317400

Page 8 of 8

### Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%  
CLP: Classification, labelling and Packaging  
REACH: Registration, Evaluation and Authorization of Chemicals  
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
UN: United Nations  
DNEL: Derived No Effect Level  
DMEL: Derived Minimal Effect Level  
PNEC: Predicted No Effect Concentration  
ATE: Acute toxicity estimate  
LL50: Lethal loading, 50%  
EL50: Effect loading, 50%  
EC50: Effective Concentration 50%  
ErC50: Effective Concentration 50%, growth rate  
NOEC: No Observed Effect Concentration  
BCF: Bio-concentration factor  
PBT: persistent, bioaccumulative, toxic  
vPvB: very persistent, very bioaccumulative  
RID: Regulations concerning the international carriage of dangerous goods by rail  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)  
EmS: Emergency Schedules  
MFAG: Medical First Aid Guide  
ICAO: International Civil Aviation Organization  
MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
IBC: Intermediate Bulk Container  
VOC: Volatile Organic Compounds  
SVHC: Substance of Very High Concern  
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>  
For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

### Other data

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.