

Safety Data Sheet

according to 29 CFR 1910.1200(g)

NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE 20% IN ETHANOL

Revision date: 04/02/2025

Product code: 317460

Page 1 of 9

1. Identification

Product identifier

NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE 20% IN ETHANOL

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

Flammable liquids: Flam. Liq. 2
 Skin corrosion/irritation: Skin Corr. 1B
 Serious eye damage/eye irritation: Eye Dam. 1
 Respiratory or skin sensitization: Skin Sens. 1

Label elements

29 CFR Part 1910.1200

Signal word: Danger

Pictograms:



Hazard statements

Highly flammable liquid and vapor
 Causes severe skin burns and eye damage
 May cause an allergic skin reaction

Precautionary statements

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 Keep container tightly closed.
 Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Do not breathe dust/fume/gas/mist/vapors/spray.
 Wash hands thoroughly after handling.
 Wear protective gloves/protective clothing/eye protection/face protection.
 If swallowed: Rinse mouth. Do NOT induce vomiting.
 If on skin: Wash with plenty of Water and soap.

Safety Data Sheet

according to 29 CFR 1910.1200(g)

NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE 20% IN ETHANOL

Revision date: 04/02/2025

Product code: 317460

Page 2 of 9

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.
In case of fire: Use Extinguishing powder / Carbon dioxide (CO₂) to extinguish.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container to Organic waste.

3. Composition/information on ingredients

Mixtures

Relevant ingredients

CAS No	Components	Quantity
64-17-5	ethanol, ethyl alcohol	77,5 - 80 %
3658-77-3	NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE	20 - 22,5 %

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

Water spray jet, Carbon dioxide (CO₂), Foam, Extinguishing powder.

Specific hazards arising from the chemical

Highly flammable. Vapors may form explosive mixtures with air.

Special protective equipment and precautions for fire-fighters

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

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapors/mists with

Safety Data Sheet

according to 29 CFR 1910.1200(g)

NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE 20% IN ETHANOL

Revision date: 04/02/2025

Product code: 317460

Page 3 of 9

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

Remove all sources of ignition. Do not breathe gas/fume/vapor/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Explosion risk.

Methods and material for containment and cleaning up

For cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

Other information

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). 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. Do not breathe gas/fume/vapor/spray.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Vapors may form explosive mixtures with air.

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. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints on joint storage

Do not store together with: Oxidizing agent. Pyrophoric or self-heating substances.

8. Exposure controls/personal protection

Control parameters

Safety Data Sheet

according to 29 CFR 1910.1200(g)

NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE 20% IN ETHANOL

Revision date: 04/02/2025

Product code: 317460

Page 4 of 9

Exposure limits

CAS No	Substance	ppm	mg/m ³	Category	Origin
64-17-5	Ethanol	1000	1880	STEL (15 min)	ACGIH-2024
64-17-5	Ethyl alcohol (Ethanol)	1000	1900	TWA (8 h)	PEL
64-17-5	Ethyl alcohol	1000	1900	TWA (8 h)	REL

Exposure controls



Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fume/vapor/spray.

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 Butyl caoutchouc (butyl rubber) / FKM (fluoro rubber)

Skin protection

Flame-retardant protective clothing. Wear anti-static footwear and clothing

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Thermal hazards

Flame-retardant protective clothing. Wear anti-static footwear and clothing .

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state:	Liquid
Color:	
Odor:	characteristic
Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	>78 °C
Flammability:	not applicable
Lower explosion limits:	3,1 vol. %
Upper explosion limits:	27,7 vol. %
Flash point:	>13 °C
Auto-ignition temperature:	368 °C
Decomposition temperature:	not determined
pH-Value:	not determined
Water solubility:	Yes
Solubility in other solvents	not determined

Safety Data Sheet

according to 29 CFR 1910.1200(g)

NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE 20% IN ETHANOL

Revision date: 04/02/2025

Product code: 317460

Page 5 of 9

Partition coefficient n-octanol/water:	not determined
Vapor pressure:	58 hPa
(at 20 °C)	
Vapor pressure:	293 hPa
(at 50 °C)	
Density:	0,86 g/cm ³
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

Solvent content: 80,00 %

Solid content: 20,00 %

10. Stability and reactivity

Reactivity

Highly flammable.

Chemical stability

The product is stable under storage at normal ambient temperatures.

Possibility of hazardous reactions

No known hazardous reactions.

Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapors may form explosive mixtures with air.

Incompatible materials

No information available.

Hazardous decomposition products

No known hazardous decomposition products.

11. Toxicological information

Information on toxicological effects

Acute toxicity

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

ATEmix calculated

ATE (oral) > 5000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

Safety Data Sheet

according to 29 CFR 1910.1200(g)

NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE 20% IN ETHANOL

Revision date: 04/02/2025

Product code: 317460

Page 6 of 9

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
64-17-5	ethanol, ethyl alcohol				
	oral	LD50 10470 mg/kg	Rat	REACH Dossier	OECD 401
	dermal	LD50 17100 mg/kg	Rabbit	REACH Dossier	
	inhalation (4 h) vapour	LC50 121 mg/l	Rat	REACH Dossier	OECD 403
3658-77-3	NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE				
	oral	LD50 1608 mg/kg	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): No ingredient of this mixture is listed.

Carcinogenicity (IARC): Ethanol in alcoholic beverages (CAS 64-17-5) is listed in group 1.

Carcinogenicity (NTP): No ingredient of this mixture is 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

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

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 product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

Other adverse effects

Safety Data Sheet

according to 29 CFR 1910.1200(g)

NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE 20% IN ETHANOL

Revision date: 04/02/2025

Product code: 317460

Page 7 of 9

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 2924

Proper shipping name:

FLAMMABLE LIQUIDS, CORROSIVE, N.O.S.

Transport hazard class(es):

3

Packing group:

II

Hazard label:

3, 8



Marine transport (IMDG)

UN number or ID number:

UN 2924

UN proper shipping name:

FLAMMABLE LIQUID, CORROSIVE, N.O.S.

Transport hazard class(es):

3

Packing group:

II

Hazard label:

3+8



Special Provisions:

274

Limited quantity:

1 L

Excepted quantity:

E2

EmS:

F-E, S-C

Air transport (ICAO-TI/IATA-DGR)

UN number or ID number:

UN 2924

UN proper shipping name:

FLAMMABLE LIQUID, CORROSIVE, N.O.S.

Transport hazard class(es):

3

Packing group:

II

Hazard label:

3+8



Special Provisions:

A3

Limited quantity Passenger:

0.5 L

Passenger LQ:

Y340

Excepted quantity:

E2

IATA-packing instructions - Passenger:

352

IATA-max. quantity - Passenger:

1 L

Safety Data Sheet

according to 29 CFR 1910.1200(g)

NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE 20% IN ETHANOL

Revision date: 04/02/2025

Product code: 317460

Page 8 of 9

IATA-packing instructions - Cargo:

363

IATA-max. quantity - Cargo:

5 L

Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

Special precautions for user

Warning: Combustible liquid. 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:

ethanol, ethyl alcohol (64-17-5): Fire hazard, Immediate (acute) health hazard

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): 1,2,4,5,6,7,8,9,11,14,16.

Safety Data Sheet

according to 29 CFR 1910.1200(g)

NATURAL 4-HYDROXY-2,5-DIMETHYL-3(2H)-FURANONE 20% IN ETHANOL

Revision date: 04/02/2025

Product code: 317460

Page 9 of 9

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.

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)