

# Safety Data Sheet

according to 29 CFR 1910.1200(g)

## NATURAL FURFURAL

Revision date: 01/15/2025

Product code: 248920US

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### 1. Identification

#### Product identifier

NATURAL FURFURAL

Substance name: 2-furaldehyde  
CAS No: 98-01-1

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

##### Use of the substance/mixture

Manufacturing of: - Air care products - Perfumes, fragrances - Pharmaceuticals - Cosmetics, personal care products - Flavouring Substances - Other

#### 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. 3  
Acute toxicity: Acute Tox. 2 (inhalation)  
Acute toxicity: Acute Tox. 3 (oral)  
Acute toxicity: Acute Tox. 4 (dermal)  
Skin corrosion/irritation: Skin Irrit. 2  
Serious eye damage/eye irritation: Eye Irrit. 2A  
Carcinogenicity: Carc. 2  
Specific target organ toxicity single exposure: STOT SE 3 (respiratory tract irritation)

#### Label elements

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

**Signal word:** Danger

**Pictograms:**



#### **Hazard statements**

Flammable liquid and vapor  
Toxic if swallowed  
Harmful in contact with skin  
Causes skin irritation and serious eye irritation  
Fatal if inhaled  
May cause respiratory irritation  
Suspected of causing cancer

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### Precautionary statements

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
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.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Wear respiratory protection.  
If swallowed: Immediately call a poison center/doctor.  
Rinse mouth.  
If on skin: Wash with plenty of Water and soap.  
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
Call a poison center/doctor if you feel unwell.  
Take off contaminated clothing and wash it before reuse.  
If inhaled: Remove person to fresh air and keep comfortable for breathing.  
Immediately call a poison center/doctor.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.  
If eye irritation persists: Get medical advice/attention.  
If exposed or concerned: Get medical advice/attention.  
In case of fire: Use Dry extinguishing powder / Water spray / alcohol resistant foam / Carbon dioxide (CO<sub>2</sub>) 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

#### Substances

Sum formula: C<sub>5</sub> H<sub>4</sub> O<sub>2</sub>  
Molecular weight: 96 g/mol

#### Relevant ingredients

CAS No	Components	Quantity
98-01-1	2-furaldehyde	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. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Call a physician immediately.

##### After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated

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clothing and wash it before reuse. Medical treatment necessary.

### After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

### After ingestion

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink 1 glass of water. Induce vomiting when the affected person is not unconscious. Call a physician immediately.

### 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 (CO<sub>2</sub>), Foam, Extinguishing powder.

### Specific hazards arising from the chemical

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 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.

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### 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 exhaust 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

#### Exposure limits

CAS No	Substance	ppm	mg/m <sup>3</sup>	Category	Origin
98-01-1	Furfural	5	20	TWA (8 h)	PEL
		0.2	0.8	TWA (8 h)	ACGIH-2024

#### Biological Exposure Indices (BEI-ACGIH)

CAS No	Substance	Determinant	Value	Test material	Sampling time
98-01-1	Furfural	Furoic acid (with hydrolysis)	200 mg/L	urine	End of shift

### 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)

##### Skin protection

Use of protective clothing.

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### Respiratory protection

In case of inadequate ventilation wear respiratory protection.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

Physical state:	Liquid
Color:	
Melting point/freezing point:	-37 °C
Boiling point or initial boiling point and boiling range:	162 °C
Flammability:	not determined
Lower explosion limits:	2,1 vol. %
Upper explosion limits:	19,3 vol. %
Flash point:	60 °C
Auto-ignition temperature:	335 °C
Decomposition temperature:	not determined
pH-Value:	not determined
Viscosity / kinematic:	not determined
Water solubility: (at 20 °C)	83 g/l
Solubility in other solvents	not determined
Partition coefficient n-octanol/water:	0,46
Vapor pressure: (at 20 °C)	2,3 hPa
Vapor pressure: (at 50 °C)	15 hPa
Density (at 20 °C):	1,16 g/cm³
Relative vapour density:	3,31
Particle characteristics:	not applicable

### Other information

#### Information with regard to physical hazard classes

##### Explosive properties

The product is not: Explosive. not explosive according to EU A.14

##### Oxidizing properties

The product is not: oxidising.

#### Other safety characteristics

Evaporation rate:	not determined
Solvent content:	0%
Solid content:	0%
Viscosity / dynamic: (at 20 °C)	1,49 mPa·s

## 10. Stability and reactivity

### Reactivity

Flammable.

### Chemical stability

The product is stable under storage at normal ambient temperatures.

### Possibility of hazardous reactions

No known hazardous reactions.

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### 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

Fatal if inhaled

Toxic if swallowed

Harmful in contact with skin

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
98-01-1	2-furaldehyde				
	oral	LD50 100 mg/kg	Rat	REACH registration	OECD 401
	dermal	LD50 >2000 mg/kg	Rat	REACH registration	OECD 402
	inhalation (4 h) vapour	LC50 >0,54 -<1,63 mg/l	Rat	REACH registration	OECD 403
	inhalation dust/mist	ATE 0,05 mg/l			

#### Irritation and corrosivity

Skin corrosion/irritation: Causes skin irritation

Serious eye damage/eye irritation: Causes serious eye irritation

#### Sensitizing effects

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

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

Suspected of causing cancer (2-furaldehyde)

Germ cell mutagenicity: 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

May cause respiratory irritation (2-furaldehyde)

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

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

Carcinogenicity (OSHA): Not listed.

Carcinogenicity (IARC): Furfural (CAS 98-01-1) is listed in group 3.

Carcinogenicity (NTP): Not listed.

#### Aspiration hazard

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

### Information on other hazards

#### Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to humans.

#### Other information

This substance is classified as hazardous according to Regulation (EC) No 1272 (2008). Specific hazards arising from the chemical.

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### 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

No information available.

#### Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

### 13. Disposal considerations

#### Waste treatment methods

##### Disposal recommendations

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

##### Contaminated packaging

Hazardous waste according to Directive 2008/98/EC (waste framework directive). Handle contaminated packages in the same way as the substance itself.

### 14. Transport information

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

##### UN number or ID number:

UN 1199

##### Proper shipping name:

FURALDEHYDES

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

6.1

##### Packing group:

II

Hazard label:

6.1, 3



#### Marine transport (IMDG)

##### UN number or ID number:

UN 1199

##### UN proper shipping name:

FURALDEHYDES

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

6.1

##### Packing group:

II

Hazard label:

6.1+3



Special Provisions:

-

Limited quantity:

100 mL

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Excepted quantity: E4  
EmS: F-E, S-D

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

**UN number or ID number:** UN 1199  
**UN proper shipping name:** FURALDEHYDES  
**Transport hazard class(es):** 6.1  
**Packing group:** II  
**Hazard label:** 6.1+3



Limited quantity Passenger: 1 L  
Passenger LQ: Y641  
Excepted quantity: E4  
IATA-packing instructions - Passenger: 654  
IATA-max. quantity - Passenger: 5 L  
IATA-packing instructions - Cargo: 662  
IATA-max. quantity - Cargo: 60 L

### Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

### Special precautions for user

Warning: Combustible liquid. Acute Toxicity.

### 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 304 CERCLA:  
Furfural (98-01-1): Reportable quantity = 5,000 (2270) lbs. (kg)  
SARA Section 311/312 Hazards:  
Furfural (98-01-1): Fire hazard, Delayed (chronic) health hazard, 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

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### 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>  
EC/EEC: European Community/European Economic Community  
EU: European Union  
M-factor: Multiplication factor  
IATA: International Air Transport Association  
DGR: Dangerous Goods Regulations  
ICAO: International Civil Aviation Organization  
TI: Technical Instructions  
UVCB: Unknown or Variable Composition, Complex Reaction Products, and Biological Materials  
VOC: volatile organic compound  
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.