

## Safety Data Sheet

according to Regulation (EC) No 1907/2006 (REACH)  
Classifications according to Regulation (EC) No 1272/2008.  
Printdate 06 May 2025

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product name:

Furfural

### 1.1. Catalog No.:

686087

### 1.2. Relevant identified uses of the substance or mixture

Identified: Laboratory chemical  
uses: R&D

### 1.3. Uses advised against:

HPC Standards GmbH  
Am Wieseneck 7

04451 Cunnersdorf  
Deutschland

Tel. +49 34291 3372-36  
Fax. +49 34291 3372-39  
contact@hpc-standards.com

### 1.4. Emergency telephone number

HPC Standards Tel. +49 34291 3372-36  
This number is only available during office hours.

## 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture  
Classification according to Regulation (EC) No 1272/2008  
Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Inhalation (Category 2), H330  
Acute toxicity, Dermal (Category 4), H312  
Skin irritation (Category 2), H315  
Eye irritation (Category 2), H319  
Carcinogenicity (Category 2), H351  
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

### 2.2. Label elements

#### 2.2.1. Pictogram



#### 2.2.2.

## 2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 Pictogram Signal word Danger

Hazard statement(s)

H301 Toxic if swallowed.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H330 Fatal if inhaled.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

Precautionary statement(s)

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P330 + P331 +

P310

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Immediately call a POISON CENTER/ doctor.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Supplemental Hazard

Statements

none

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Formula : C<sub>5</sub>H<sub>4</sub>O<sub>2</sub>

Molecular weight : 96,08 g/mol

CAS-No. : 98-01-1

EC-No. : 202-627-7

Index-No. : 605-010-00-4

Component Classification Concentration

2-Furaldehyde

Flam. Liq. 3; Acute Tox. 3;

Acute Tox. 2; Acute Tox.

4; Skin Irrit. 2; Eye Irrit.

2; Carc. 2; STOT SE 3;

Aquatic Chronic 3; H226,

H301, H330, H312, H315,

H319, H351, H335, H412

<= 100 %

### 3.1.1. Formula

C<sub>5</sub>H<sub>4</sub>O<sub>2</sub>

### 3.1.2. Molecular Weight (g/mol)

96.08

### 3.1.3. CAS-No.

98-01-1

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

#### Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

## 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### Unsuitable extinguishing media

Do NOT use water jet.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

Use water spray to cool unopened containers

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8. 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Handle under argon. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

Air and moisture sensitive.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a) Appearance Form: clear, viscous, liquid

Colour: light brown

b) Odour No data available

c) Odour Threshold No data available

d) pH No data available

e) Melting

point/freezing point

Melting point/range: -36 °C

f) Initial boiling point  
and boiling range  
162 °C at 1013 hPa  
54 - 56 °C at 15 hPa  
g) Flash point 61,7 °C - closed cup  
h) Evaporation rate No data available  
i) Flammability (solid,  
gas)  
No data available  
j) Upper/lower  
flammability or  
explosive limits  
Upper explosion limit: 19,3 %(V)  
Lower explosion limit: 2,1 %(V)  
k) Vapour pressure 18,0 hPa at 55 °C  
2,3 hPa at 20 °C  
l) Vapour density 3,32 - (Air = 1.0)  
m) Relative density 1,159 g/cm<sup>3</sup>  
n) Water solubility soluble  
o) Partition coefficient:  
n-octanol/water  
log Pow: 0,41  
p) Auto-ignition  
temperature  
No data available q) Decomposition  
temperature  
No data available  
r) Viscosity No data available  
s) Explosive properties No data available  
t) Oxidizing properties No data available  
9.2 Other safety information  
Surface tension 43,5 mN/m at 20 °C  
Relative vapour  
density  
3,32 - (Air = 1.0)

## 10. STABILITY AND REACTIVITY

10.1 Reactivity  
No data available  
10.2 Chemical stability  
Stable under recommended storage conditions.  
10.3 Possibility of hazardous reactions  
No data available  
10.4 Conditions to avoid  
Heat, flames and sparks.  
10.5 Incompatible materials  
Oxidizing agents, Strong acids  
10.6 Hazardous decomposition products  
Hazardous decomposition products formed under fire conditions. - Carbon oxides  
Other decomposition products - No data available  
In the event of fire: see section 5

## 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects  
Acute toxicity  
LD50 Oral - Rat - male and female - 108 mg/kg  
(OECD Test Guideline 401)  
LC50 Inhalation - Rat - male and female - 4 h - > 0,54 - < 1,63 mg/l

(OECD Test Guideline 403)  
LD50 Dermal - Rabbit - > 2.000 mg/kg  
(OECD Test Guideline 402)  
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)  
Skin corrosion/irritation  
Skin - Rabbit  
Result: Irritating to skin. - 24 h  
(OECD Test Guideline 404)  
Serious eye damage/eye irritation  
Eyes - Rabbit  
Result: Causes serious eye irritation. - 24 h (OECD Test Guideline 405)  
Respiratory or skin sensitisation  
Maximisation Test - Guinea pig  
Result: negative  
(OECD Test Guideline 406)  
Germ cell mutagenicity  
Mouse  
lymphocyte  
Mutation in mammalian somatic cells.  
Human  
HeLa cell  
DNA inhibition  
Human  
lymphocyte  
Sister chromatid exchange  
Carcinogenicity  
This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.  
Limited evidence of carcinogenicity in animal studies  
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.  
Reproductive toxicity  
No data available  
Specific target organ toxicity - single exposure  
No data available  
Specific target organ toxicity - repeated exposure  
No data available  
Aspiration hazard  
No data available  
Additional Information  
Repeated dose toxicity - Rat - male and female  
RTECS: LT7000000 Central nervous system depression, Headache, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## 12. ECOLOGICAL INFORMATION

12.1 Toxicity  
Toxicity to fish semi-static test LC50 - *Poecilia reticulata* (guppy) - 10,5 mg/l - 14 Days  
(OECD Test Guideline 204)  
Toxicity to algae static test NOEC - *Microcystis aeruginosa* (blue-green algae) - 2,7 mg/l - 8 Days  
(OECD Test Guideline 201) Toxicity to bacteria  
12.2 Persistence and degradability  
Biodegradability aerobic - Exposure time 14 d  
Result: 100 % - Readily biodegradable.  
(OECD Test Guideline 301C)  
Theoretical oxygen demand  
1.660 mg/g  
Remarks: (Lit.)  
Ratio BOD/ThBOD 46 %  
Remarks: (External MSDS)  
12.3 Bioaccumulative potential  
No data available  
12.4 Mobility in soil  
No data available  
12.5 Results of PBT and vPvB assessment  
This substance/mixture contains no components considered to be either persistent,

bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Harmful to aquatic life with long lasting effects.

No data available

### 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Contaminated packaging

Dispose of as unused product.

### 14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 1199 IMDG: 1199 IATA: 1199

14.2 UN proper shipping name

ADR/RID: FURALDEHYDES

IMDG: FURALDEHYDES

IATA: Furaldehydes

14.3 Transport hazard class(es)

ADR/RID: 6.1 (3) IMDG: 6.1 (3) IATA: 6.1 (3)

14.4 Packaging group

ADR/RID: II IMDG: II IATA: II 14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No data available

### 15. REGULATORY INFORMATION

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

## 16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. For lab use only!