

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

|                                  |  |
|----------------------------------|--|
| <b>Product Description:</b>      | <b>2-Furaldehyde</b>   |
| <b>Cat No. :</b>                 | <b>181100000; 181100010; 181100025; 181100100; 181100250; 181102500; 181102500</b> |
| <b>Synonyms</b>                  | Furfural; 2-Furancarboxaldehyde  |
| <b>Index No</b>                  | 605-010-00-4   |
| <b>CAS No</b>                    | 98-01-1  |
| <b>EC No</b>                     | 202-627-7  |
| <b>Molecular Formula</b>         | C5 H4 O2   |
| <b>REACH registration number</b> | 01-2119486861-27   |

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

|                                       |   |
|---------------------------------------|---|
| <b>Recommended Use</b>                | Laboratory chemicals.   |
| <b>Sector of use</b>                  | SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites    |
| <b>Product category</b>               | PC21 - Laboratory chemicals   |
| <b>Process categories</b>             | PROC15 - Use as a laboratory reagent  |
| <b>Environmental release category</b> | ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates) |
| <b>Uses advised against</b>           | No Information available  |

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

#### Company

**UK entity/business name**  
Fisher Scientific UK  
Bishop Meadow Road,  
Loughborough, Leicestershire LE11 5RG, United Kingdom

**EU entity/business name**  
Thermo Fisher Scientific  
Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium

**E-mail address** begel.sdsdesk@thermofisher.com

### 1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

**Physical hazards**

# SAFETY DATA SHEET

2-Furaldehyde

Revision Date 22-Sep-2023

|  |                   |
|--|-------------------|
| Flammable liquids  | Category 3 (H226) |
| <b>Health hazards</b>  |                   |
| Acute oral toxicity  | Category 3 (H301) |
| Acute dermal toxicity  | Category 4 (H312) |
| Acute Inhalation Toxicity - Vapors                               | Category 2 (H330) |
| Skin Corrosion/Irritation  | Category 2 (H315) |
| Serious Eye Damage/Eye Irritation                                | Category 2 (H319) |
| Carcinogenicity  | Category 2 (H351) |
| Specific target organ toxicity - (single exposure)               | Category 3 (H335) |
| <b>Environmental hazards</b>                                     |                   |
| Based on available data, the classification criteria are not met |                   |

Full text of Hazard Statements: see section 16

## 2.2. Label elements



Signal Word

Danger

## Hazard Statements

- H226 - Flammable liquid and vapor
- H301 - Toxic if swallowed
- H312 - Harmful in contact with skin
- H330 - Fatal if inhaled
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H335 - May cause respiratory irritation
- H351 - Suspected of causing cancer

## Precautionary Statements

- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON CENTER or doctor/physician
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

## 2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

This product does not contain any known or suspected endocrine disruptors

# SAFETY DATA SHEET

2-Furaldehyde

Revision Date 22-Sep-2023

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

| Component | CAS No  | EC No             | Weight % | CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567   |
|-----------|---------|-------------------|----------|---|
| Furfural  | 98-01-1 | EEC No. 202-627-7 | 100      | Flam. Liq. 3 (H226)<br>Acute Tox. 3 (H301)<br>Acute Tox. 4 (H312)<br>Acute Tox. 2 (H330)<br>Skin Irrit. 2 (H315)<br>Eye Irrit. 2 (H319)<br>STOT SE 3 (H335)<br>Carc. 2 (H351) |

REACH registration number

01-2119486861-27

Full text of Hazard Statements: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

|   |   |
|---|---|
| <b>General Advice</b>                     | If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.   |
| <b>Eye Contact</b>                        | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Immediate medical attention is required.   |
| <b>Skin Contact</b>                       | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.   |
| <b>Ingestion</b>                          | Call a physician or poison control center immediately. Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.   |
| <b>Inhalation</b>                         | Remove to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. Artificial respiration and/or oxygen may be necessary. Move to fresh air in case of accidental inhalation of vapors. If not breathing, give artificial respiration. |
| <b>Self-Protection of the First Aider</b> | Use personal protective equipment as required.  |

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

Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

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

Notes to Physician Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

# SAFETY DATA SHEET

2-Furaldehyde

Revision Date 22-Sep-2023

## 5.1. Extinguishing media

### **Suitable Extinguishing Media**

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

### **Extinguishing media which must not be used for safety reasons**

No information available.

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

Combustible material. Containers may explode when heated. Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

### **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

## 5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

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

Use personal protective equipment as required. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

### 6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

### 6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

## **SECTION 7: HANDLING AND STORAGE**

### 7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance. Take precautionary measures against static discharges. Pay attention to flashback. Do not take internally.

### **Hygiene Measures**

When using do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

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

Keep away from heat, sparks and flame. Keep containers tightly closed in a dry, cool and well-ventilated place.

# SAFETY DATA SHEET

2-Furaldehyde

Revision Date 22-Sep-2023

Technical Rules for Hazardous Substances (TRGS) 510      Class 3  
 Storage Class (LGK) (Germany)

### 7.3. Specific end use(s)

Use in laboratories

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

#### Exposure limits

List source(s): **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **IRE** - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

| Component | The United Kingdom  | European Union | Ireland   |
|-----------|---|----------------|---|
| Furfural  | STEL: 5 ppm 15 min<br>STEL: 20 mg/m <sup>3</sup> 15 min<br>TWA: 2 ppm 8 hr<br>TWA: 8 mg/m <sup>3</sup> 8 hr<br>Skin |                | TWA: 2 ppm 8 hr.<br>TWA: 8 mg/m <sup>3</sup> 8 hr.<br>STEL: 5 ppm 15 min<br>STEL: 20 mg/m <sup>3</sup> 15 min<br>Skin |

#### Biological limit values

List source(s):

#### Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

Workers; See table for values

| Component                   | Acute effects local (Dermal) | Acute effects systemic (Dermal) | Chronic effects local (Dermal) | Chronic effects systemic (Dermal) |
|-----------------------------|------------------------------|---------------------------------|--------------------------------|-----------------------------------|
| Furfural<br>98-01-1 ( 100 ) |                              |                                 |                                | DNEL = 4mg/kg bw/day              |

| Component                   | Acute effects local (Inhalation) | Acute effects systemic (Inhalation) | Chronic effects local (Inhalation) | Chronic effects systemic (Inhalation) |
|-----------------------------|----------------------------------|-------------------------------------|------------------------------------|---------------------------------------|
| Furfural<br>98-01-1 ( 100 ) | DNEL = 20mg/m <sup>3</sup>       | DNEL = 152mg/m <sup>3</sup>         | DNEL = 8mg/m <sup>3</sup>          | DNEL = 17.8mg/m <sup>3</sup>          |

#### Predicted No Effect Concentration (PNEC)

See values below.

| Component                   | Fresh water      | Fresh water sediment         | Water Intermittent | Microorganisms in sewage treatment | Soil (Agriculture)      |
|-----------------------------|------------------|------------------------------|--------------------|------------------------------------|-------------------------|
| Furfural<br>98-01-1 ( 100 ) | PNEC = 0.033mg/L | PNEC = 0.12mg/kg sediment dw | PNEC = 0.027mg/L   | PNEC = 7.6mg/L                     | PNEC = 2.6mg/kg soil dw |

| Component                   | Marine water      | Marine water sediment         | Marine water intermittent | Food chain            | Air |
|-----------------------------|-------------------|-------------------------------|---------------------------|-----------------------|-----|
| Furfural<br>98-01-1 ( 100 ) | PNEC = 0.0033mg/L | PNEC = 0.012mg/kg sediment dw |                           | PNEC = 35.3mg/kg food |     |

### 8.2. Exposure controls

# SAFETY DATA SHEET

2-Furaldehyde

Revision Date 22-Sep-2023

## Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment. Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

## Personal protective equipment

**Eye Protection** Goggles (European standard - EN 166)

**Hand Protection** Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments                           |
|----------------|-------------------|-----------------|-------------|--|
| Butyl rubber   | > 480 minutes     | 0.635 mm        | EN 374      | As tested under EN374-3 Determination of |
| Viton (R)      | < 300 minutes     | 0.7 mm          |             | Resistance to Permeation by Chemicals    |

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure. Apron. Impervious gloves.

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

**Respiratory Protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Large scale/emergency use** Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced  
**Recommended Filter type:** Organic gases and vapours filter Type A Brown conforming to EN14387

**Small scale/Laboratory use** Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.  
**Recommended half mask:-** Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141  
When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls** Prevent product from entering drains.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

|                                 |   |
|---------------------------------|---|
| <b>Physical State</b>           | Liquid  |
| <b>Appearance</b>               | Amber - Brown                                   |
| <b>Odor</b>                     | bitter almonds                                  |
| <b>Odor Threshold</b>           | No data available                               |
| <b>Melting Point/Range</b>      | -37 °C / -34.6 °F                               |
| <b>Softening Point</b>          | No data available                               |
| <b>Boiling Point/Range</b>      | 159 - 161 °C / 318.2 - 321.8 °F @ 760 mmHg      |
| <b>Flammability (liquid)</b>    | Flammable On basis of test data                 |
| <b>Flammability (solid,gas)</b> | Not applicable Liquid                           |
| <b>Explosion Limits</b>         | <b>Lower</b> 2.1 Vol%<br><b>Upper</b> 19.3 Vol% |

# SAFETY DATA SHEET

2-Furaldehyde

Revision Date 22-Sep-2023

|  |                          |  |
|--|--------------------------|--|
| <b>Flash Point</b>                             | 60 °C / 140 °F           | <b>Method</b> - No information available |
| <b>Autoignition Temperature</b>                | 315 °C / 599 °F          |  |
| <b>Decomposition Temperature</b>               | No data available        |  |
| <b>pH</b>                                      | 3.5-4.5                  |  |
| <b>Viscosity</b>                               | 1.49 cP at 25 °C         |  |
| <b>Water Solubility</b>                        | 83 g/l (20°C)            |  |
| <b>Solubility in other solvents</b>            | No information available |  |
| <b>Partition Coefficient (n-octanol/water)</b> |                          |  |
| <b>Component</b>                               | <b>log Pow</b>           |  |
| Furfural                                       | 0.67                     |  |
| <b>Vapor Pressure</b>                          | 1 mbar @ 20 °C           |  |
| <b>Density / Specific Gravity</b>              | 1.160                    |  |
| <b>Bulk Density</b>                            | Not applicable           | Liquid                                   |
| <b>Vapor Density</b>                           | No information available | (Air = 1.0)                              |
| <b>Particle characteristics</b>                | Not applicable (liquid)  |  |

## 9.2. Other information

|                             |  |
|-----------------------------|--|
| <b>Molecular Formula</b>    | C5 H4 O2                               |
| <b>Molecular Weight</b>     | 96.08                                  |
| <b>Explosive Properties</b> | explosive air/vapour mixtures possible |
| <b>Evaporation Rate</b>     | No information available               |

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

None known, based on information available

### 10.2. Chemical stability

Light sensitive. Air sensitive.

### 10.3. Possibility of hazardous reactions

|                                 |                               |
|---------------------------------|-------------------------------|
| <b>Hazardous Polymerization</b> | No information available.     |
| <b>Hazardous Reactions</b>      | None under normal processing. |

### 10.4. Conditions to avoid

Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition. Exposure to air. Exposure to light.

### 10.5. Incompatible materials

Strong oxidizing agents. Strong bases. Strong acids.

### 10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Product Information

|                            |            |
|----------------------------|------------|
| <b>(a) acute toxicity;</b> |            |
| <b>Oral</b>                | Category 3 |
| <b>Dermal</b>              | Category 4 |
| <b>Inhalation</b>          | Category 2 |

# SAFETY DATA SHEET

2-Furaldehyde

Revision Date 22-Sep-2023

| Component | LD50 Oral       | LD50 Dermal          | LC50 Inhalation         |
|-----------|-----------------|----------------------|-------------------------|
| Furfural  | 100 mg/kg (Rat) | >2000 mg/kg (Rabbit) | 0.53-1.63 mg/L/4h (Rat) |

- (b) skin corrosion/irritation;** Category 2
- (c) serious eye damage/irritation;** Category 2
- (d) respiratory or skin sensitization;**  
**Respiratory** Based on available data, the classification criteria are not met  
**Skin** Based on available data, the classification criteria are not met
- (e) germ cell mutagenicity;** Based on available data, the classification criteria are not met  
 Mutagenic effects have occurred in humans
- (f) carcinogenicity;** Category 2  
 The table below indicates whether each agency has listed any ingredient as a carcinogen  
 Limited evidence of a carcinogenic effect
- (g) reproductive toxicity;** Based on available data, the classification criteria are not met
- (h) STOT-single exposure;** Category 3  
**Results / Target organs** Respiratory system.
- (i) STOT-repeated exposure;** Based on available data, the classification criteria are not met  
**Target Organs** None known.
- (j) aspiration hazard;** Based on available data, the classification criteria are not met
- Other Adverse Effects** Tumorigenic effects have been reported in experimental animals.
- Symptoms / effects,both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

## 11.2. Information on other hazards

**Endocrine Disrupting Properties** Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecotoxicity effects** Contains a substance which is: Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

| Component | Freshwater Fish   | Water Flea | Freshwater Algae |
|-----------|---|------------|------------------|
| Furfural  | LC50: 16.79 - 26.35 mg/L, 96h<br>flow-through (Pimephales<br>promelas)<br>LC50: 13.4 - 19.3 mg/L, 96h |            |                  |



# SAFETY DATA SHEET

2-Furaldehyde

Revision Date 22-Sep-2023

|  |                              |  |  |
|--|------------------------------|--|--|
|  | static (Pimephales promelas) |  |  |
|--|------------------------------|--|--|

**12.2. Persistence and degradability** Readily biodegradable  
**Persistence** Persistence is unlikely.  
**Degradation in sewage treatment plant** Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**12.3. Bioaccumulative potential** Bioaccumulation is unlikely

| Component | log Pow | Bioconcentration factor (BCF) |
|-----------|---------|-------------------------------|
| Furfural  | 0.67    | No data available             |

**12.4. Mobility in soil** The product is water soluble, and may spread in water systems . Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

**12.5. Results of PBT and vPvB assessment** Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

**12.6. Endocrine disrupting properties**  
Endocrine Disruptor Information

**12.7. Other adverse effects**  
**Persistent Organic Pollutant** This product does not contain any known or suspected substance  
**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

**Waste from Residues/Unused Products** Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

**European Waste Catalogue (EWC)** According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

**Other Information** Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations.

## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

**14.1. UN number** UN1199

ACR18110

# SAFETY DATA SHEET

2-Furaldehyde

Revision Date 22-Sep-2023

**14.2. UN proper shipping name** FURALDEHYDES  
**14.3. Transport hazard class(es)** 6.1  
     Subsidiary Hazard Class 3  
**14.4. Packing group** II

**ADR**

**14.1. UN number** UN1199  
**14.2. UN proper shipping name** FURALDEHYDES  
**14.3. Transport hazard class(es)** 6.1  
     Subsidiary Hazard Class 3  
**14.4. Packing group** II

**IATA**

**14.1. UN number** UN1199  
**14.2. UN proper shipping name** FURALDEHYDES  
**14.3. Transport hazard class(es)** 6.1  
     Subsidiary Hazard Class 3  
**14.4. Packing group** II

**14.5. Environmental hazards** No hazards identified  
**14.6. Special precautions for user** No special precautions required.  
**14.7. Maritime transport in bulk according to IMO instruments** Not applicable, packaged goods

## SECTION 15: REGULATORY INFORMATION

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

**International Inventories**

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

| Component | CAS No  | EINECS    | ELINCS | NLP | IECSC | TCSI | KECL     | ENCS | ISHL |
|-----------|---------|-----------|--------|-----|-------|------|----------|------|------|
| Furfural  | 98-01-1 | 202-627-7 | -      | -   | X     | X    | KE-17310 | X    | X    |

| Component | CAS No  | TSCA | TSCA Inventory notification - Active-Inactive | DSL | NDSL | AICS | NZIoC | PICCS |
|-----------|---------|------|---|-----|------|------|-------|-------|
| Furfural  | 98-01-1 | X    | ACTIVE  | X   | -    | X    | X     | X     |

**Legend:** X - Listed '-' - Not Listed      **KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**Authorisation/Restrictions according to EU REACH**

| Component | CAS No  | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|-----------|---------|---|---|---|
| Furfural  | 98-01-1 | -   | Use restricted. See item 75. (see link for restriction details)               | -   |

REACH links

# SAFETY DATA SHEET

2-Furaldehyde

Revision Date 22-Sep-2023

<https://echa.europa.eu/substances-restricted-under-reach>

## Seveso III Directive (2012/18/EC)

| Component | CAS No  | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements |
|-----------|---------|---|--|
| Furfural  | 98-01-1 | Not applicable  | Not applicable   |

## Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

## Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

## National Regulations

**UK** - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

**WGK Classification** See table for values

| Component | Germany - Water Classification (AwSV) | Germany - TA-Luft Class                              |
|-----------|---------------------------------------|--|
| Furfural  | WGK2                                  | Class I : 20 mg/m <sup>3</sup> (Massenkonzentration) |

| Component | France - INRS (Tables of occupational diseases)            |
|-----------|--|
| Furfural  | Tableaux des maladies professionnelles (TMP) - RG 74,RG 84 |

## 15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

## SECTION 16: OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3

H226 - Flammable liquid and vapor  
H301 - Toxic if swallowed  
H312 - Harmful in contact with skin  
H330 - Fatal if inhaled  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H351 - Suspected of causing cancer  
H335 - May cause respiratory irritation

### Legend

# SAFETY DATA SHEET

2-Furaldehyde

Revision Date 22-Sep-2023

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

Predicted No Effect Concentration (PNEC)

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

## Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

**Creation Date** 24-Apr-2009

**Revision Date** 22-Sep-2023

**Revision Summary** Not applicable.

**This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.**

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**