Furfuryl Alcohol
CAS No 98-00-0

MATERIAL SAFETY DATA SHEET
SDS/MSDS

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers
Product name: Furfuryl Alcohol
CAS-No.: 98-00-0

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet
Company: Central Drug House (P) Ltd
7/28 Vardaan House
New Delhi-10002
INDIA
Telephone: +91 11 49404040
Email: care@cdhfinechemical.com

1.4 Emergency telephone number
Emergency Phone #: +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 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 3), H311
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
Specific target organ toxicity - repeated exposure, Inhalation (Category 2), Nose, H373
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements
Labelling according Regulation (EC) No 1272/2008
Pictogram
Signal word: Danger

Hazard statement(s)
- H301 + H311: Toxic if swallowed or 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.
- H373: May cause damage to organs (Nose) through prolonged or repeated exposure if inhaled.

Precautionary statement(s)
- P260: Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
- P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P284: Wear respiratory protection.
- P301 + P310 + P330: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
- P304 + P340 + P310: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
- 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.

SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms: 2-(Hydroxymethyl)furan

Formula: C₅H₆O₂
Molecular weight: 98.10 g/mol
CAS-No.: 98-00-0
EC-No.: 202-626-1
Index-No.: 603-018-00-2

Hazardous ingredients according to Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furfuryl alcohol</td>
<td>Acute Tox. 3; Acute Tox. 2;</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>98-00-0</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>202-626-1</td>
<td></td>
</tr>
<tr>
<td>Index-No.</td>
<td>603-018-00-2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Irrit. 2; Carc. 2; STOT SE 3; STOT RE 2; H301, H330, H311, H315, H319, H351, H335, H373</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 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

**SECTION 5: Firefighting measures**

5.1 **Extinguishing media**

**Suitable extinguishing media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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.

**SECTION 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.

6.3 **Methods and materials for containment and cleaning up**
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 **Reference to other sections**
For disposal see section 13.

**SECTION 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**
Store in cool place. 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.
Air sensitive.
7.3 **Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

**SECTION 8: Exposure controls/personal protection**

8.1 **Control parameters**

8.2 **Exposure controls**

**Appropriate engineering controls**
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**Personal protective equipment**

- **Eye/face protection**
  - Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

- **Skin protection**
  - Handle with gloves. Gloves must be inspected prior to use. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

- **Body Protection**
  - The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

- **Respiratory protection**
  - Use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls.

**Control of environmental exposure**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**SECTION 9: Physical and chemical properties**

9.1 **Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
<td>Form: clear, liquid</td>
</tr>
<tr>
<td>b) Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>c) Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>d) pH</td>
<td>No data available</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
<td>Melting point/range: -29 °C - lit.</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>170 °C - lit.</td>
</tr>
<tr>
<td>g) Flash point</td>
<td>65 °C - closed cup</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>j) Upper/lower flammability or explosive limits</td>
<td>Upper explosion limit: 16,3 %(V)</td>
</tr>
<tr>
<td></td>
<td>Lower explosion limit: 1,8 %(V)</td>
</tr>
<tr>
<td>k) Vapour pressure</td>
<td>7,3 hPa at 55 °C</td>
</tr>
<tr>
<td></td>
<td>0,7 hPa at 20 °C</td>
</tr>
<tr>
<td>Feature</td>
<td>Value</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Vapour density</td>
<td>3.39 (Air = 1.0)</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.135 g/cm³ at 25 °C</td>
</tr>
<tr>
<td>Water solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: 0.3 at 25 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2 Other safety information

Relative vapour density 3.39 (Air = 1.0)

SECTION 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
Do not store near acids., Oxygen, Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 177 mg/kg

LC50 Inhalation - Rat - male and female - 4 h - > 0.82 - < 2.07 mg/l
(OECD Test Guideline 403)

LD50 Dermal - Rabbit - 400 mg/kg
Remarks: Behavioral:Convulsions or effect on seizure threshold.

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Moderate eye irritation - 24 h

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
Arnes test
Salmonella typhimurium
Result: negative
Mouse - male  
Result: negative

**Carcinogenicity**

Carcinogenicity - Rat - Inhalation  
Tumorigenic:Carcinogenic by RTECS criteria. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste).Olfaction:Tumors.

Carcinogenicity - Mouse - Inhalation  

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**  
Inhalation - May cause respiratory irritation. - Nose

**Specific target organ toxicity - repeated exposure**  
Inhalation - May cause damage to organs through prolonged or repeated exposure. - Nose

**Aspiration hazard**  
No data available

**Additional Information**

Repeated dose Rat - male - Oral - NOAEL : 53 mg/kg - OECD Test Guideline 408  
RTECS: LU9100000

Central nervous system depression, Nausea, Dizziness, Headache, Exposure to and/or consumption of alcohol may increase toxic effects.

**SECTION 12: Ecological information**

12.1 **Toxicity**  
No data available

12.2 **Persistence and degradability**

Biodegradability aerobic - Exposure time 14 d  
Result: 77.7 % - Readily biodegradable  
(OECD Test Guideline 301C)

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**  
No data available

**SECTION 13: Disposal considerations**

13.1 **Waste treatment methods**

**Product**  
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**
Dispose of as unused product.
SECTION 14: Transport information

14.1 UN number
ADR/RID: 2874  IMDG: 2874  IATA: 2874

14.2 UN proper shipping name
ADR/RID: FURFURYL ALCOHOL
IMDG: FURFURYL ALCOHOL
IATA: Furfuryl alcohol

14.3 Transport hazard class(es)
ADR/RID: 6.1  IMDG: 6.1  IATA: 6.1

14.4 Packaging group
ADR/RID: III  IMDG: III  IATA: III

14.5 Environmental hazards
ADR/RID: no  IMDG Marine pollutant: no  IATA: no

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information
This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

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

15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

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

H301  Toxic if swallowed.
H301 + H311  Toxic if swallowed or in contact with skin
H311  Toxic 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.
H373  May cause damage to organs (/$/*_ORG_REP_INHA/$/) through prolonged or repeated exposure if inhaled.

Further 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. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.