



## Furfural

### I. Description of the Product

**FURFURAL** [furfural] or furfuraldehyde (C<sub>4</sub>H<sub>3</sub>OCHO), viscous, colorless liquid that has a pleasant aromatic odor; upon exposure to air it turns dark brown or black. It boils at about 160°C. It is commonly used as a solvent; it is soluble in ethanol and ether and somewhat soluble in water. Furfural is the aldehyde of pyromucic acid; it has properties similar to those of benzaldehyde. A derivative of furan, it is prepared commercially by dehydration of pentose sugars obtained from cornstalks and corncobs, husks of oat and peanut, and other waste products. It is used in the manufacture of pesticides, phenol furfural resins, and tetrahydrofuran. Tetrahydrofuran is used as a commercial solvent and is converted in starting materials for the preparation of nylon.

Furfural is used as a solvent in petrochemical refining to extract dienes (which are used to make synthetic rubber) from other hydrocarbons. Furfural, as well as its derivative furfuryl alcohol, can be used either by themselves or in together with phenol, acetone, or urea to make solid resins. Such resins are used in making fiberglass, some aircraft components, and automotive brakes.

Furfural is also used as a chemical intermediate in the production of the solvents furan and tetrahydrofuran. Hydroxymethyl furfural has been identified in a wide variety of heat processed foods.

### II. Applications of the Product

It can be used lubricating oil refining, furfuryl alcohol production by hydrogenation, making several organic chemical products, such as medicine pesticide. It is utilized as a solvent in petroleum industry. It can be used to produce meleic anhydride, tetrahydrofuran, furan resin and furfuryl alcohol resin. It is also widely use in food spicery and dye as antiseptic, disinfectant, insecticide and rust remover.

### III. Quality Terms

Item	Top quality
Properties name	Furfural
Formula	C <sub>5</sub> H <sub>4</sub> O <sub>2</sub>
Synonyms	2-furaldehyde, furfuraldehyde
Molecular Weight	96.08
UN NO	1199
Appearance	Colorless. Amber Almond-like Bitter Liquid





<b>CAS NO</b>	98-01-1
<b>Purity %</b>	≥98.5
<b>Moisture %</b>	≤0.2
<b>Acid (mol/L)</b>	≤0.016
<b>Density (P<sub>20</sub>)g/ml</b>	1.159-1.161(20/4℃)
<b>Refractive index (η<sub>D</sub><sup>20</sup>)</b>	1.524-1.527
<b>hs code</b>	29321200
<b>Auto-Ignition Temperature</b>	315.5℃
<b>Boiling Point</b>	161.8℃ (323.2°F)
<b>Melting Point</b>	-38.7℃ (-37.7°F)
<b>Hazard class or division</b>	6.1
<b>Solubility</b>	Soluble in cold water, hot water, diethyl ether, acetone. Soluble in chloroform, petroleum ether, benzene, and ethanol
<b>Explosion</b>	Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Reacts violently with oxidants. Reacts violently with strong acids and bases causing fire and explosion hazards. Sealed containers may rupture when heated. Sensitive to static discharge.
<b>Packing</b>	In 230Kg or 240Kg Iron drum

#### IV. Handling and Storage

##### ♀ Precautions:

Keep locked up. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such a oxidizing agents, acids, alkalis.

##### ♀ Storage:

Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Do not store below 8℃ (46.4°F).

#### V. Usage Points for Attention



Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow.



Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Prevent contact with combustible or organic materials. Label containers and keep them tightly closed when not in use. Wash thoroughly after handling.

## VI. First-aid Measures

### ♀ **Eye Contact:**

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

### ♀ **Skin Contact:**

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

### ♀ **Serious Skin Contact:**

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

### ♀ **Inhalation:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

### ♀ **Serious Inhalation:**

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

### ♀ **Ingestion:**

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

## VII. Shipping Information

♀ **Shipping Name:** furfural      No information available.

♀ **Hazard Class:** 6.1

♀ **UN Number:** UN 1199

♀ **Packing Group:** III

■ **Please read the MSDS for this chemical before using!**

