



# Safety Data Sheet

Issue Date: 24-May-2011

Revision Date: 04-Apr-2014

Version 1

## 1. IDENTIFICATION

### Product Identifier

**Product Name** Furfuryl Alcohol

### Other means of identification

**SDS #** NC-030  
**Synonyms** 2-Furanmethanol, Furan-2-ylmethanol, 2-Furan carbinol, Furfural alcohol, 2-Furyl carbinol, 2-Furyl methanol, 2-Hydroxymethyl furan.  
**UN/ID No** UN2874

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

**Recommended Use** Manufacturing of blends/formulation  
 Manufacturing of polymers  
 Manufacturing of molds using formulations containing the substance (foundry)  
 Manufacturing of refractories, abrasive wheels, friction (brake pads, clutch facing), carbon impregnation using formulations containing the substance  
 Wood impregnation/modification  
 Professional end-use of acid resistant coating.

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

**Supplier Address**  
 Neuchem Inc.  
 2062 Union Street, Suite 300  
 San Francisco, CA 94123 USA  
 www.neuchem.com

### Emergency Telephone Number

**Company Phone Number** Phone: 415-345-9353  
 Fax: 415-345-9350  
**Emergency Telephone (24 hr)** INFOTRAC 1-352-323-3500 (International)  
 1-800-535-5053 (North America)

## 2. HAZARDS IDENTIFICATION

**Appearance** Viscous colorless to yellow liquid  
**Physical State** Liquid  
**Odor** Typical Slightly pungent

### Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Serious eye damage/eye irritation	Category 2
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Flammable Liquids	Category 4

**Signal Word****Danger****Hazard Statements**

Harmful if swallowed

Harmful in contact with skin

Toxic if inhaled

Causes serious eye irritation

Suspected of causing cancer

May cause respiratory irritation. May cause drowsiness or dizziness

May cause damage to organs through prolonged or repeated exposure

Combustible liquid

**Precautionary Statements - Prevention**

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

Wear eye/face protection

Do not breathe dust/fume/gas/mist/vapors/spray

Keep away from heat/sparks/open flames/hot surfaces. — No smoking

Keep cool

**Precautionary Statements - Response**

If exposed or concerned: Get medical advice/attention

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 ON SKIN: Wash with plenty of soap and water

Call a poison center or doctor/physician if you feel unwell

Wash contaminated clothing before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor/physician

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

IN CASE OF FIRE: Use CO2, dry chemical, or foam for extinction

**Precautionary Statements - Storage**

Store locked up

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

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other Hazards**

Harmful to aquatic life with long lasting effects

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms** 2-Furanmethanol, Furan-2-ylmethanol, 2-Furan carbinol, Furfural alcohol, 2-Furyl carbinol, 2-Furyl methanol, 2-Hydroxymethyl furan.

Chemical Name	CAS No	Weight-%
Furfuryl alcohol	98-00-0	>98

### 4. FIRST-AID MEASURES

#### First Aid Measures

**Eye Contact** 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.

**Skin Contact** Wash off immediately with plenty of water. Take off contaminated clothing. Wash contaminated clothing before reuse. Call a physician if you feel unwell.

**Inhalation** Remove to fresh air. Get medical attention if you feel unwell.

**Ingestion** Rinse mouth. Get medical attention if you feel unwell.

#### Most important symptoms and effects

**Symptoms** May cause irritation to the mucous membranes and upper respiratory tract. Overexposure by inhalation may cause CNS depression- drowsiness, dizziness, confusion or loss of coordination. May cause skin and eye irritation.

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

**Notes to Physician** Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

#### Suitable Extinguishing Media

Alcohol resistant foam. Water. Carbon dioxide (CO<sub>2</sub>). Powder.

**Unsuitable Extinguishing Media** Not determined.

#### Specific Hazards Arising from the Chemical

Emits toxic fumes under fire conditions.

**Hazardous Combustion Products** Carbon oxides.

#### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Use water spray to keep fire-exposed containers cool.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

<b>Personal Precautions</b>	Ventilate affected area. Wear protective gloves. Wear impermeable boots. Use a filter respirator for organic vapors (filter type A). Wear safety goggles.
<b>Environmental Precautions</b>	See Section 12 for additional Ecological Information. Do not allow material to enter soil or surface water.

### Methods and material for containment and cleaning up

<b>Methods for Containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for Clean-Up</b>	Vacuum up the spilled material. Wash spill area with plenty of water. For small spills, absorb with sand, clay, or other inert absorbent. Dispose of in accordance with federal, state and local regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

<b>Advice on Safe Handling</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protection recommended in Section 8. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Use only in well-ventilated areas. Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
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### Conditions for safe storage, including any incompatibilities

<b>Storage Conditions</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials. Storage temperature: 20 °C. Store locked up.
<b>Incompatible Materials</b>	Oxidizers. Strong acids.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Furfuryl alcohol 98-00-0	STEL: 15 ppm TWA: 10 ppm S*	TWA: 50 ppm TWA: 200 mg/m <sup>3</sup> (vacated) TWA: 10 ppm (vacated) TWA: 40 mg/m <sup>3</sup> (vacated) STEL: 15 ppm (vacated) STEL: 60 mg/m <sup>3</sup> (vacated) S*	IDLH: 75 ppm TWA: 10 ppm TWA: 40 mg/m <sup>3</sup> STEL: 15 ppm STEL: 60 mg/m <sup>3</sup>

### Appropriate engineering controls

<b>Engineering Controls</b>	Ventilation systems.
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### Individual protection measures, such as personal protective equipment

<b>Eye/Face Protection</b>	Safety goggles.
<b>Skin and Body Protection</b>	Gloves butyl rubber 0.7 mm Breakthrough time >8 hours Gloves neoprene 0.75 mm Breakthrough time >4 hours.
<b>Respiratory Protection</b>	In case of insufficient local exhaust: filter respirator for organic vapors (filter type A).
<b>General Hygiene Considerations</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Liquid	<b>Odor</b>	Typical Slightly pungent
<b>Appearance</b>	Viscous colorless to yellow liquid	<b>Odor Threshold</b>	33 mg/m <sup>3</sup>
<b>Color</b>	Colorless to yellow		
<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks • Method</u></b>	
<b>pH</b>	4-6	30% solution	
<b>Melting Point/Freezing Point</b>	-15 °C / 5 °F		
<b>Boiling Point/Boiling Range</b>	170 °C / 338 °F		
<b>Flash Point</b>	65 °C / 149 °F	Tag Closed Cup	
<b>Evaporation Rate</b>	443	(Ether = 1)	
<b>Flammability (Solid, Gas)</b>	n/a-liquid		
<b>Upper Flammability Limits</b>	16.3%		
<b>Lower Flammability Limit</b>	1.8%		
<b>Vapor Pressure</b>	0.53 hPa		
<b>Vapor Density</b>	3.38	(Air=1)	
<b>Specific Gravity</b>	1.13	(1=Water)	
<b>Water Solubility</b>	Completely soluble		
<b>Solubility in other solvents</b>	Good solubility in fat Miscible in solvents(ethanol, ether, chloroform, methanol, 1-propanol, iso-amylalcohol, ethyl acetate)		
<b>Partition Coefficient</b>	LogK 0.28		
<b>Auto-ignition Temperature</b>	491 °C / 916 °F		
<b>Decomposition Temperature</b>	Not applicable		
<b>Kinematic Viscosity</b>	Not determined		
<b>Dynamic Viscosity</b>	4.62 mPa s		
<b>Explosive Properties</b>	Not an explosive		
<b>Oxidizing Properties</b>	None		
<b>Additional Information</b>	Heat of combustion: 26000 kJ/kg		

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions.

### Chemical Stability

Stable under normal conditions. Discolors on exposure to light. Unstable in water.

### Possibility of Hazardous Reactions

Exothermic polymerization with explosive violence in the presence of (strong) acids. Reacts violently with oxidants.

### Conditions to Avoid

Contact with air. Light.

### Incompatible Materials

Oxidizers. Strong acids.

### Hazardous Decomposition Products

Carbon oxides. Low molecular weight hydrocarbons.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product Information

<b>Eye Contact</b>	Causes serious eye irritation.
<b>Skin Contact</b>	Harmful in contact with skin.
<b>Inhalation</b>	Toxic if inhaled.
<b>Ingestion</b>	Harmful if swallowed.

### Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Furfuryl alcohol 98-00-0	= 177 mg/kg ( Rat )	= 3825 mg/kg ( Rat ) = 400 mg/kg ( Rabbit )	= 233 ppm ( Rat ) 4 h

### Information on physical, chemical and toxicological effects

**Symptoms** Please see section 4 of this SDS for symptoms.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Carcinogenicity</b>	Suspected of causing cancer.
<b>STOT - single exposure</b>	May cause respiratory irritation. May cause drowsiness or dizziness.
<b>STOT - repeated exposure</b>	May cause damage to organs through prolonged or repeated exposure.

### Numerical measures of toxicity

Not determined

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Harmful to aquatic life with long lasting effects.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Furfuryl alcohol 98-00-0		32: 96 h Pimephales promelas mg/L LC50 static		328: 24 h Daphnia magna mg/L EC50

### Persistence/Degradability

Readily biodegradable. Oxygen demand: Biological (5 days) in gO<sub>2</sub>/g (BOD<sub>5</sub>) 0.81  
Chemical in gO<sub>2</sub>/g (COD) 1.75  
BOD<sub>5</sub> : COD 0.46.

### Bioaccumulation

BCF (Bioconcentration factor) 0.96.

### Mobility

Highly mobile Adsorption coefficient (Koc) solid phase/liquid phase 34

### Other Adverse Effects

Not determined

**13. DISPOSAL CONSIDERATIONS**

**Waste Treatment Methods**

- Disposal of Wastes**                      Disposal should be in accordance with applicable regional, national and local laws and regulations.
- Contaminated Packaging**              Disposal should be in accordance with applicable regional, national and local laws and regulations.

**14. TRANSPORT INFORMATION**

**Note**    Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

**DOT**

- UN/ID No**                                      UN2874
- Proper Shipping Name**                  Furfuryl alcohol
- Hazard Class**                                6.1
- Packing Group**                              III

**IATA**

- UN/ID No**                                      UN2874
- Proper Shipping Name**                  Furfuryl alcohol
- Hazard Class**                                6.1
- Packing Group**                              III

**IMDG**

- UN/ID No**                                      UN2874
- Proper Shipping Name**                  Furfuryl alcohol
- Hazard Class**                                6.1
- Packing Group**                              III

**15. REGULATORY INFORMATION**

**International Inventories**  
Not determined

**US Federal Regulations**

**SARA 313**  
Not determined

**US State Regulations**

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Furfuryl alcohol 98-00-0	X	X	X

**16. OTHER INFORMATION****NFPA****Health Hazards**

Not determined

**Flammability**

Not determined

**Instability**

Not determined

**Special Hazards**

Not determined

**HMIS****Health Hazards**

Not determined

**Flammability**

Not determined

**Physical Hazards**

Not determined

**Personal Protection**

Not determined

**Issue Date:** 24-May-2011**Revision Date:** 04-Apr-2014**Revision Note:** New format**Disclaimer**

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**End of Safety Data Sheet**