Furfuryl Alcohol

1. Chemical Product and enterprise information

Product Name……Furfuryl Alcohol
Synonyms……2-Furanmethanol; 2-Furylmethanol;2-Furylcarbinol; 2-Furancarbinol; Furyl Carbitol
Company……Henan Hongye Chemical Co., Ltd.
Address……At the Middle of Huanghe Road,Puyang City,Henan Province,China.
Post ……457000
Telephone Number……+86-393-6681288, 4636771, 4637001
Fax……+86-393-4637731,6681266
Email……hnhy@hongyechem.com /hongyechem@hongyechem.com
MSDS No……HYFA-061001-04
Effective Date……October1, 2006

2. Composition/Information on Ingredients

Name	Furfuryl Alcohol
Chemical Formula	$C_5H_6O_2$
CAS No.	98-00-0
by Weight	≥98.5

3. Hazards Identification

♀**Potential Acute Health Effects:**

Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion. Severe over-exposure can result in death.

♀**Potential Chronic Health Effects:**

►Mutagenic effects: mutagenic for bacteria and/or yeast.
►The substance may be toxic to central nervous system (CNS).
►Repeated or prolonged exposure to the substance can produce target organs damage.
►Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

4. First-Aid Measures

♀**Eye Contact:**

Check for and remove any contact lenses. In case of contact, immediately flush eyes

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E-mail：① hnhy@hongyechem.com ② hongyechem@hongyechem.com

with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

♀**Skin Contact:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

♀**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.

♀**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. Seek 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.

5. Fire and Explosion Data

♀**Flammability of the Product:** Combustible.

♀**Flash Points:** closed cup: 65°C (149°F). open cup: 75°C (167°F).

♀**Auto-Ignition Temperature:** 490°C (914°F)

♀**Flammable Limits:** lower: 1.8% UPPER: 16.3%

♀**Products of Combustion:** These products are carbon oxides (CO, CO_2).

♀**Fire Hazards in Presence of Various Substances:**

►Flammable in presence of open flames and sparks, of heat.

►Non-flammable in presence of shocks.

♀**Special Remarks on Fire Hazards and Explosion Hazards:**

►Furfuryl alcohol ignites on contact with 85% Hydrogen Peroxide.

►May have explosive reactions or polymerization with cyanoacetic acid, formic acid, mineral acids and organic acids.

♀**Fire Fighting Media and Instructions:**

►Small fire: Use dry chemical powder.

►Large fire: Use water spray, fog or foam. Do not use water jet.

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6. Accidental Release Measures

♀Small Spill:

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

♀Large Spill:

►Combustible material. Poisonous liquid.

►Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

7. Handing 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. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids.

♀Storage:

►Light Sensitive. Air Sensitive. Store in light-resistant container. 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 above 25°C (77°F).

8. Exposure Controls/Personal Protection

♀Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

♀Personal Protection:

Splash goggles. Lab coat. Gloves.

♀Personal Protection in Case of a Large Spill:

Splash goggles. Full suit, Boots, Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

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9. Physical and Chemical Properties

♀**Physical state and appearance:** Liquid.
♀**Odor:** Burning (Slight.)
♀**Taste:** Bitter.
♀**Molecular Weight:** 98.1g/mole
♀**Color:** Clear Colorless to light yellow.
♀**PH (1% soln/water):** Not available.
♀**Boiling Point:** 171°C (339.8°F)
♀**Melting Point:** -14.6°C (5.7°F) (ITI, 1985) -31 C (Lewis, 1989)
♀**Critical Temperature:** Not available.
♀**Specific Gravity:** 1.1296 (Water = 1)
♀**Vapor Pressure:** 0.1 kPa (@ 20°C)
♀**Vapor Density:**
1.003 (Air = 1) (Peer Reviewed; Clayton, G.D. and Clayton, F.E.)
3.38 (Air = 1) (NFPA)
♀**Volatility:** Not available.
♀**Odor Threshold:** 8 ppm
♀**Water/Oil Dist. Coeff.:** The product is more soluble in oil; log(oil/water) = 0.3
♀**Ionicity (in Water):** Not available.
♀**Dispersion Properties:** See solubility in water, diethyl ether.
♀**Solubility:**
►Easily soluble in cold water and diethyl ether.
►Very soluble in alcohol.
►Soluble in benzene.
►It is soluble in water, but is unstable in aqueous solutions.
►It is insoluble in paraffin hydrocarbons.

10. Stability and Reactivity Data

♀**Stability:** The product is stable.
♀**Conditions of Instability:** Heat, ignition sources, light, air, incompatible materials.
♀**Incompatibility with various substances:**
►Highly reactive with acids.
►Reactive with oxidizing agents.
♀**Special Remarks on Reactivity:**
►Incompatible with acids (nitric acid, formic acid, cyanoacetic acid), mineral acids, strong oxidizing agents, air, acid chlorides, organic acids, oxygen, fuming nitric acid.
►Turns amber due to autooxidation and intramolecular dehydration during storage and turns black in presence of air and light.

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►It does not react with water or common materials.
►Furfuryl is easily resinified by acids.

11. Toxicological Information

♀**Routes of Entry:** Absorbed through skin. Dermal contact. Eye contact. Inhalation.
♀**Toxicity to Animals:**
►Warning: the lc50 values hereunder are estimated on the basis of a 4-hour exposure.
►Acute oral toxicity (LD50): 160 mg/kg [Mouse].
►Acute dermal toxicity (LD50): 400 mg/kg [Rabbit].
►Acute toxicity of the vapor (LC50): 233 4 hours [Rat].
♀**Chronic Effects on Humans:**
►Mutagenic effects: Mutagenic for bacteria and/or yeast.
►May cause damage to the following organs: central nervous system (CNS).

12. Ecological Information

♀**Ecotoxicity:** Not available.
♀**BOD5 and COD:** Not available.
♀**Products of Biodegradation:**
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
♀**Toxicity of the Products of Biodegradation:** The products of degradation are less toxic than the product itself.
♀**Special Remarks on the Products of Biodegradation:** Not available.

13. Disposal Considerations

♀**Waste Disposal:**
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

14. Transport Information

Proper shipping name……furfuryl alcohol
Labeling requirements……6.1
Un number……2874
Hazard class or division……6.1
Packing group/risk group…… III
Packing……240kg iron drums,250kg iron drums. All the above packing is net weight.

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15. Rule of Law Information

no information

16. Other Information

The data in this Material Safety Data Sheet is believed to be correct. However, since conditions of use are outside our control it should not taken as a warranty of representation for which Henan Hongye Chemical Co., Ltd. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.

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