

# FURAN

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## 1. Product Identification

**Synonym:** Furfuran

**CAS No.:** 110-00-9

**Chemical Formula:** C<sub>4</sub>H<sub>4</sub>O

**Product Codes:** CHEM-489 and others

## 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Furan	110-00-9	100	Yes

## 3. Hazards Identification

**Toxicological Data on Ingredients:** Furan: VAPOR (LC50): Acute: 1699 ppm 4 hour(s) [Rat]. 60 ppm 4 hour(s) [Mouse].

**SAF-T-DATA<sup>(tm)</sup> Ratings**

Health Rating: 1 - Slight

Flammability Rating: 4 - Extreme

Reactivity Rating: 0 - None

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT; RESPIRATOR; PROPER GLOVES

Storage Color Code: Red (Flammable)

### **Potential Acute Health Effects:**

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

### **Potential Chronic Health Effects:**

Very hazardous in case of inhalation. Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion. CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, the nervous system. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to an 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. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

### **Skin Contact:**

After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

### **Serious Skin Contact:**

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

**Inhalation:** Allow the victim to rest in a well ventilated area. Seek immediate 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. **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:**

Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

**Serious Ingestion:** Not available.

## 5. Fire Fighting Measures

**Flammability of the Product:** Flammable.

**Auto-Ignition Temperature:** Not available.

**Flash Points:** CLOSED CUP: -50°C (-58°F).

**Flammable Limits:** LOWER: 2.3% UPPER: 14.3%

**Products of Combustion:** These products are carbon oxides (CO, CO<sub>2</sub>).

**Fire Hazards in Presence of Various Substances:** Not available.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:**

Flammable liquid, soluble or dispersed in water. **SMALL FIRE:** Use DRY chemical powder.

**LARGE FIRE:** Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:** Not available.

## 6. Accidental Release Measures

**Small Spill:** Absorb with an inert material and put the spilled material in an appropriate waste disposal.

**Large Spill:**

Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources.

## 7. 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/ vapour/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

**Storage:**

Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°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. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** Not available.

## 9. Physical and Chemical Properties

**Physical state and appearance:**

Liquid.

**Odor:**

Ethereal.

**Taste:**

Not available.

**Molecular Weight:**

68.07 g/mole

**Color:**

Colorless.

**pH (1% soln/water):**

Not available.

**Boiling Point:**

32°C (89.6°F)

**Melting Point:**

-86°C (-122.8°F)

**Critical Temperature:**

Not available.

**Specific Gravity:**

0.94 (Water = 1)

**Vapor Pressure:**

493 mm of Hg (@ 20°C)

**Vapor Density:**

2.35 (Air = 1)

**Volatility:**

100% (v/v).

**Odor Threshold:**

Not available.

**Water/Oil Dist. Coeff.:**

Not available.

**Ionicity (in Water):**

Not available.

**Dispersion Properties:**

See solubility in water, methanol, diethyl ether, acetone.

**Solubility:**

Easily soluble in acetone. Soluble in methanol, diethyl ether. Very slightly soluble in cold water.

## 10. Stability and Reactivity

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Not available.

**Incompatibility with various substances:** Not available.

**Corrosivity:** Non-corrosive in presence of glass.

**Special Remarks on Reactivity:** Not available.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** No.

## 11. Toxicological Information

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Not available.

**Incompatibility with various substances:** Not available.

**Corrosivity:** Non-corrosive in presence of glass.

**Special Remarks on Reactivity:** Not available.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** No.

## 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 more toxic.

**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

**DOT Classification:** Class 3: Flammable liquid.

**Identification:** : Furan : UN2389 PG: I

**Special Provisions for Transport:** Not available.

## 15. Regulatory Information

**Federal and State Regulations:**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause

cancer, birth defects or other reproductive harm, which would require a warning under the statute: Furan Pennsylvania RTK:

Furan Massachusetts RTK: Furan SARA 302/304/311/312 extremely hazardous substances: Furan

CERCLA: Hazardous

substances.: Furan

**Other Regulations:** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

**Other Classifications:**

**WHMIS (Canada):**

CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-1A: Material causing immediate and

serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

**DSCL (EEC):**

R12- Extremely flammable. R20- Harmful by inhalation. R36/38- Irritating to eyes and skin.

**HMIS (U.S.A.):**

**Health Hazard:** 1

**Fire Hazard:** 4

**Reactivity:** 0

**Personal Protection:** h

**National Fire Protection Association (U.S.A.):**

**Health:** 1

**Flammability:** 4

**Reactivity:** 1

**Specific hazard:**

**Protective Equipment:**

Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

**16. Other Information**

**References:** Not available.

**Other Special Considerations:** Not available.

**Product Use:**

Laboratory Reagent and Consumer Hobby

**Revision Information:**

No Changes.

**Disclaimer:**

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