Section 1. Product and Company Identification

Product Name Furfuryl Alcohol
CAS Number 98-00-0

Parchem - fine & specialty chemicals
415 Huguenot Street
New Rochelle, NY 10801
(914) 654-6800 **(914) 654-6899**
parchem.com **info@parchem.com**

EMERGENCY RESPONSE NUMBER
CHEMTEL
Toll Free US & Canada: 1 (800) 255-3924
All other Origins: 1 (813) 248-0585
Collect Calls Accepted

Section 2. Hazards Identification

Classification of the substance or mixture
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

GHS Label Elements

Pictograms:

Signal word: DANGER

Hazard and precautionary statements
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

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 CO_2, dry chemical, or foam for extinction

Storage

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

Disposal

Dispose of contents/container to an approved waste disposal plant

Other Hazards: Harmful to aquatic life with long lasting effects

Section 3. Composition / Information on Ingredients

Common Name Furfuryl Alcohol
Synonym(s) 2-Furanmethanol; Furan-2-ylmethanol; 2-Furan carbinol; Furfural alcohol; 2-Furyl carbinol; 2-Furyl methanol; 2-Hydroxymethyl furan
CAS Number 98-00-0

COMPONENT	CAS NUMBER	CONCENTRATION
Furfuryl Alcohol	98-00-0	> 98%

Section 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.

Section 5. Firefighting Measures

Suitable Extinguishing Media: Alcohol resistant foam. Water. Carbon dioxide (CO_2). 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.

Section 6. Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures
Personal Precautions: Ventilate affected area. Wear protective gloves. Wear impermeable boots. Use a filter respirator for organic vapors (filter type A). Wear safety goggles.
Environmental Precautions: 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
Methods for Containment: Prevent further leakage or spillage if safe to do so.
Methods for Clean-Up: 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.

Section 7. Handling and Storage

Precautions for safe handling

Advice on Safe Handling: 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.

Conditions for safe storage, including any incompatibilities

Storage Conditions: Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials. Storage temperature: 20 °C. Store locked up.

Incompatible Materials: Oxidizers. Strong acids.

Section 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/m3 (vacated) TWA: 10 ppm (vacated) TWA: 40 mg/m3 (vacated) STEL: 15 ppm (vacated) STEL: 60 mg/m3 (vacated) S*	IDLH: 75 ppm TWA: 10 ppm TWA: 40 mg/m3 STEL: 15 ppm STEL: 60 mg/m3

Appropriate engineering controls

Engineering Controls: Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection: Safety goggles.

Skin and Body Protection: Gloves butyl rubber 0.7 mm Breakthrough time >8 hours Gloves neoprene 0.75 mm Breakthrough time >4 hours.

Respiratory Protection: In case of insufficient local exhaust: filter respirator for organic vapors (filter type A).

General Hygiene Considerations: Handle in accordance with good industrial hygiene and safety practice.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical State: Liquid

Appearance: Viscous colorless to yellow liquid

Odor: Typical Slightly pungent

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

Section 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.

Section 11. Toxicological Information

Information on likely routes of exposure
Product Information
Eye Contact: Causes serious eye irritation.
Skin Contact: Harmful in contact with skin.
Inhalation: Toxic if inhaled.
Ingestion: Harmful if swallowed.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Furfuryl alcohol CAS: 98-00-0	177 mg/kg (Rat) = 110 mg/kg (Rat)	3825 mg/kg (Rat) = 657 mg/kg (Rabbit) = 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
Carcinogenicity: Suspected of causing cancer.
STOT - single exposure: May cause respiratory irritation. May cause drowsiness or dizziness.
STOT - repeated exposure: May cause damage to organs through prolonged or repeated exposure.

Numerical measures of toxicity: Not determined

Section 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 gO2/g (BOD5) 0.81 Chemical in gO2/g (COD) 1.75 BOD5 : 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

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 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

Section 15. Regulatory Information

International Inventories

Chemical name	TSCA	DSL	EINECS	ENCS	IECSC	KECL	PICCS	AICS
	Present	X	Present	Present	X	Present	X	X

Legend
TSCA: United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL: Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS: European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS: Japan Existing and New Chemical Substances
IECSC: China Inventory of Existing Chemical Substances
KECL: Korean Existing and Evaluated Chemical Substances
PICCS: Philippines Inventory of Chemicals and Chemical Substances
AICS: Australian Inventory of Chemical Substances
US Federal Regulations
SARA 313: Not determined

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
X	X	X	X

Section 16. Other Information

Disclaimer: 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.

REVISION DATE: 7/17/2017