

Material Safety Data Sheet

2,5-Dimethylfuran
MSDS Date: 09/1/2008

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name:
2,5-Dimethylfuran

Synonyms: Dimethylfuran
Stabilized dimethylfuran

Manufacturer's Name and Address:

Penn A Kem. LLC
3324 Chelsea Avenue
Memphis, TN 38108
Emergency Number, if inside US: (901) 320 4092
Emergency Number, if outside US: (877) 895 7366

SECTION 2: Composition/Information on Ingredients

CAS NO.: 625-86-5
EINECS/ELINCS: 210-914-3
Chemical Name: 2,5-dimethylfuran
Molecular Weight: 96.
Chemical Formula: C₆H₈O
Percent: 93-100.%

Note: This material may be stabilized with a hindered phenol antioxidant, less than 0.04 wt%.

SECTION 3: Hazards Identification

Emergency Overview: This material is HAZARDOUS by OSHA Communication definition.
Signal Word: Danger.
NFPA Rating: Health: 2; Flammability: 3; Reactivity: 0
NHIS Rating: Health: 2; Flammability: 3; Reactivity: 0
Hazards: Highly flammable. Avoid oxidizing agents. Avoid prolonged or repeated breathing of gases, vapors or mists.
Primary Route of entry: Inhalation
Eye: May be irritating to eye.
Skin: May be irritating to skin.
Ingestion: May cause irritation of the digestive tract.
Inhalation: May cause respiratory tract and mucous membrane irritation. May cause unconsciousness or respiratory arrest.
Chronic: No information available.
Target Organs: No information available.
Note:

SECTION 4: First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with mild soap and water. Wash clothing before reuse. Get medical aid if ill effects or irritation develops.
Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. If conscious and alert, rinse mouth and drink water. Get medical aid.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if breathing difficulty persists.

SECTION 5: Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal

decomposition or combustion. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Cool containers with flooding quantities of water.

Extinguishing Media:	Small fire use water spray, dry chemical, carbon dioxide. Large fire use water spray, water fog dry chemical, carbon dioxide, or alcohol resistant foam. DO NOT USE SOLID WATER STREAM.
Flash Point:	45°F, 7°C
Auto ignition Temperature:	Not Available
Explosion limits, Lower:	Not Available
Upper:	Not Available
NFPA Rating:	Health: 2; Flammability: 3; Reactivity: 0
NHIS Rating:	Health: 2; Flammability: 3; Reactivity: 0

SECTION 6: Accidental Release Measures

General Information:	Eliminate all sources of ignition. Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:	Absorb spill with inert non-combustible material (e.g. vermiculite, sand or earth), then place in a suitable container. Clean up spills immediately using non-sparking tools. Provide ventilation.

SECTION 7: Handling and Storage

Handling:	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Handle empty containers with care. Vapor/residues may be flammable.
Storage:	Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

SECTION 8: Exposure Controls, Personal Protection

Engineering Controls:	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation and exhaust to keep airborne concentrations low.
Exposure Limits:	
Chemical name:	2,5-dimethylfuran
ACGIH:	Not reported
OSHA	Not Reported

SECTION 8: Exposure Controls, Personal Protection Cont'd

Personal Protective Equipment:

- Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles and face shield as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
- Hands:** Wear appropriate protective gloves to prevent skin exposure. Polyvinyl alcohol, Teflon, or 4H and Silver Shield brand.
- Clothing:** Wear appropriate protective clothing to prevent skin exposure.
- Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

SECTION 9: Physical and Chemical Properties

- Physical State:** Liquid
- Appearance:** Clear, colorless to yellow to amber.
- Odor:** Ether-like odor.
- pH:** Not available
- Vapor Pressure:** 155 mm Hg @ 25 °C (77 °F)
- Vapor Density:** Not available.
- Evaporation Rate:** Not available.
- Viscosity:** Not available.
- Boiling Point:** 92-94 °C
- Freezing/Melting Point:** Not available.
- Autoignition Temperature:** Not available.
- Solubility: water** Insoluble.
- Specific Gravity/Density:** 0.90 g/cc.
- Molecular Formula:** C₆H₈O
- Molecular Weight:** 96

SECTION 10: Stability and Reactivity

- Chemical Stability:** Stable under normal temperatures and pressures.
- Conditions to Avoid:** Incompatible materials, excess heat, strong oxidants.
- Incompatibilities with other Materials:** Strong oxidizing agents.
- Hazardous Decomposition Products:** Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
- Hazardous Polymerization:** Not reported.

SECTION 11: Toxicological Information

LD50 No information available.

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LC50: No information available.
Carcinogenicity: No information available.
Epidemiology: No information available.

Sensitization No information available.

Eye Liquid and vapor is irritating to eyes.
Skin No information available.

Teratogenicity: No information available.
Reproductive Effects: No information available.
Genetic toxicity: No information available.
Neurotoxicity: No information available.
Other Studies: No information available.

SECTION 12: Ecological Information

Acute toxicity fish No information available.
Invertebrates No information available.
Aquatic plants No information available.
Microorganisms No information available.
Other Studies: No information available.

SECTION 13: Disposal Considerations

Contaminated products, oil or water may be a US RCRA or OSHA hazardous waste due to a potentially low flash point. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport Information

US DOT	
Shipping Name:	Flammable Liquid, N.O.S. (2,5-dimethylfuran)
Hazard Class:	Flammable liquid
UN Number:	UN1993
Packing Group:	II

International	
Shipping Name:	Flammable Liquid, N.O.S. (2,5-dimethylfuran)
Hazard Class:	Flammable liquid
UN Number:	UN1993
Packing Group:	II

SECTION 15: Regulatory Information

US FEDERAL:

TSCA (Toxic Substance Control Act): 2,5-dimethylfuran is listed on the TSCA inventory.

TSCA Section 12b: Not listed.
CERLA Hazardous Substances and Corresponding RQs:

SARA Section 302 (Superfund Amendments and Reauthorizations Act):
SARA 311/312 Based on available information, 2,5-dimethylfuran is classified as follows:
Fire Hazard

313 Reportable Ingredients: None of the chemicals are reportable under Section 313.

Clean Air Act: This material does not contain any Class 1 Ozone depleters, or Class 2 Ozone depleters.

Clean Water Act: None of the chemicals in this product are listed as Hazardous Substances, Priority Pollutants, or Toxic Pollutants under the CWA.

STATE:

California Prop 65:

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives:

Hazard Symbols: .

Risk Phrases: R11– Highly Flammable.

Safety Phrases:

- S 24/25, Avoid contact with skin and eyes.
- S 37, Wear suitable gloves.
- S 45, In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S 28A, In case of skin contact, wash immediately with plenty of water.

WGK (Water Danger/Protection):

Canada – DSL/NDSL: This chemical is listed on the DSL list.

Canadian Ingredient Disclosure List: None.

SECTION 16: Additional Information

MSDS Creation Date: 09/1/2008

Revision #0 Date:

The data contained herein is based on information currently available to Penn A Kem LLC, and believed to be factual and the opinions expressed to be those of qualified experts; however, this data is not to be taken as a warranty or representation for which Penn Specialty Chemicals, Inc. assumes legal responsibility.