Material Safety Data Sheet

Furfurylamine

Section 1: Chemical Product and Company Identification

Product Name: Furfurylamine
Catalog Codes: Not available.
CAS#: 617-89-0
EINECS: 210-536-9
RTECS: LU9275000
TSCA: TSCA 8(b) inventory: Furfurylamine
CI#: Not available.
Synonym: 1-(2-Furyl)methylamine
Chemical Name: Furfurylamine
Chemical Formula: C5H7NO

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Section 2: Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furfurylamine</td>
<td>617-89-0</td>
<td>100</td>
</tr>
</tbody>
</table>

Toxicological Data on Ingredients: Not available.
Section 3: Hazards Identification

Flammable. Harmful by inhalation, in contact with skin and if swallowed. Causes burns.

Potential Health Effects

Eye: Causes eye burns.

Skin: Harmful if absorbed through the skin. Causes skin burns.

Ingestion: Harmful if swallowed. Causes gastrointestinal tract burns.

Inhalation: Harmful if inhaled. Causes chemical burns to the respiratory tract.

Section 4: First Aid Measures

Eye Contact:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin Contact:
Get medical aid immediately. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Remove contaminated clothing and shoes.

Inhalation:
Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion:
Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Note to Physician: Treat symptomatically and supportively

Section 5: Fire and Explosion Data

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Will burn if involved in a fire. Flammable liquid and vapor. Flammable solid.

Extinguishing Media:
In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. Use foam, dry chemical, or carbon dioxide. Use agent most appropriate to extinguish fire.

Section 6: Accidental Release Measures
General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Do not let this chemical enter the environment.

Section 7: Handling and Storage

Precautions:
Use spark-proof tools and explosion proof equipment. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Do not ingest or inhale. Use only in a chemical fume hood.

Storage:
Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Flammables-area. Corrosives area.

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 general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Skin:
Wear safety glasses and chemical goggles if splashing is possible. Wear appropriate protective gloves to prevent skin exposure.

Eyes:
Wear chemical splash goggles. Wear safety glasses and chemical goggles if splashing is possible.

Clothing:
Wear appropriate protective clothing to minimize contact with skin. Wear appropriate protective clothing to prevent skin exposure.

Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>colorless oily liquid.</td>
</tr>
<tr>
<td>MP</td>
<td>-70 °C (lit.)</td>
</tr>
<tr>
<td>BP</td>
<td>145-146 °C (lit.)</td>
</tr>
<tr>
<td>Density</td>
<td>1.099 g/mL at 25 °C (lit.)</td>
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<tr>
<td>Vapor density</td>
<td>3.35 (vs air)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>4 mm Hg (20°C)</td>
</tr>
<tr>
<td>Refractive Index</td>
<td>n20/D 1.490 (lit.)</td>
</tr>
</tbody>
</table>
Flash Point: 116 °F

Section 10: Stability and Reactivity Data
Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, ignition sources.
Incompatibilities with Other Materials: Strong oxidizing agents, acids, acid chlorides, carbon dioxide, acid anhydrides.
Hazardous Decomposition
Products: Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, nitrogen.
Hazardous Polymerization: Not available

Section 11: Toxicological Information
Carcinogenicity: Furfurylamine - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other: The toxicological properties have not investigated.

Section 12: Ecological Information
Ecotoxicity: Not available.
BOD5 and COD: Not available.
Products of Biodegradation: Not available.
Toxicity of the Products of Biodegradation: Not available.
Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations
Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information
DOT Classification: UN 2526 3/PG 3
Identification: Not applicable.
Special Provisions for Transport: Not applicable.
Section 15: Other Regulatory Information

European Labeling in Accordance with EC Directives
Hazard Symbols: C
Risk Phrases: R 10 Flammable. R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed. R 34 Causes burns.
Safety Phrases: S 16 Keep away from sources of ignition - No smoking. S 23 Do not inhale gas/fumes/vapour/spray. S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Section 16: Other Information

References: Not available.
Other Special Considerations: Not available.
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