



MATERIAL SAFETY DATA SHEET

PRODUCT NAME: FURFURAL

CAS Number: 98-01-1

1. IDENTIFICATION:

Product Code : 93609

Company Name : ADVENT CHEMBIO PRIVATE LIMITED

Address : W-279, MIDC, TTC INDUSTRIAL AREA, THANE-BELAPUR ROAD, RABALE,
NAVI MUMBAI - 400 701, MAHARASHTRA, INDIA.

E-mail : sales@adventchembio.com

WEBSITE : www.adventchembio.com

Company Phone Number : +91 77770 84837

2. HAZARDS IDENTIFICATION:**Hazard classification****Physical hazards**

Flammable liquids : Category 3

Health hazards

Acute toxicity, Oral : Category 3

Acute toxicity, Inhalation : Category 2

Acute toxicity, Dermal : Category 4

Skin irritation : Category 2

Eye irritation : Category 2

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 3, Respiratory system

Long-term (chronic) aquatic hazard : Category 3

Labels elements :

Hazard symbol :

Signal word : Danger

Hazard statement

- Flammable liquid and vapor.
- Toxic if swallowed.
- Harmful in contact with skin.
- Causes skin irritation.
- Causes serious eye irritation.
- Fatal if inhaled.
- May cause respiratory irritation.



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Suspected of causing cancer.
Harmful to aquatic life with long lasting effects.

Precautionary statement**Prevention**

- : Obtain special instructions before use.
- Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Do not handle until all safety precautions have been read and understood.
- Wear protective gloves/ protective clothing/ eye protection/ face protection.
- Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
- Keep container tightly closed. Ground/ bond container and receiving equipment.
- Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- Use only non-sparking tools. Take precautionary measures against static discharge.

Response

- : IF exposed or concerned: Get medical advice/ attention.
- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Storage

- : Store in a dry & well-ventilated place. Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Disposal

- : Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification

- : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

3. COMPOSITION/ INFORMATION ON INGREDIENTS:

Ingredient	CAS Number	Percent	Hazardous
Furfural	98-01-1	NLT 98.0%	Yes

4. FIRST AID MEASURES:**General information**

- : Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion

- : Call a physician or poison control center immediately. Rinse mouth. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the



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		lungs.
Inhalation	:	Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms persist.
Skin contact	:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Eye contact	:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Most important symptoms/effects, acute and delayed	:	The most important known symptoms and effects are described in the labelling.
Indication of immediate medical attention and special treatment needed	:	No data available

5. FIRE FIGHTING MEASURES:

General information : Flammable liquid and vapor.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water, Foam, Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

Specific hazards arising from the chemical Carbon oxides
Combustible.
: Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at elevated temperatures.
Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment and precautions for firefighters

Special firefighting procedures : Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Special protective equipment for fire-fighters : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. ACCIDENTAL RELEASE MEASURES:

Personal precautions, protective equipment and emergency procedures : ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
: Avoid breathing mists or vapors. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.

Methods and material for containment and cleaning up : Eliminate all ignition sources if safe to do so. Use only non-sparking tools. Take precautionary measures against static discharges. Stop leak if possible without any risk.
: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger



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spill for later recovery and disposal.

Notification Procedures : Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

Environmental precautions : Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. HANDLING AND STORAGE:

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Wear protective gloves/protective clothing/eye protection/ face protection. Avoid contact with eyes, skin, and clothing. Do not breathe mist or vapor. Use only with adequate ventilation. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities : Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a dry, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8. EXPOSURE CONTROLS PERSONAL PROTECTION:**Control parameters****Appropriate engineering**

controls : No data available

Individual protection measures, such as personal protective equipment

General information : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

Eye/face protection : Wear safety glasses with side shields (or goggles).

Hand protection : Chemical resistant gloves.

Other : Wear suitable protective clothing.

Respiratory protection : In case of inadequate ventilation use suitable respirator. Chemical respirator with organic vapor cartridge. Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

Hygiene measures : Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower. Avoid contact with eyes, skin, and clothing.



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9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance	: Colourless to brownish oily liquid.
Odor	: No data available
Solubility	: Miscible in water.
Formula	: $C_5H_4O_2$
Molecular Weight	: 96.09 g/mol
Density	: 1.158 - 1.162 g/cm ³ at 25°C
pH	: No data available
% Volatiles by volume @ 21C (70F)	: No data available
Boiling Point	: 162°C
Melting Point	: -36°C
Flash Point	: 58 °C
Vapor Density (Air=1)	: 3.32
Vapor Pressure (mm Hg)	: 2.3 @ 20°C
Evaporation Rate (BuAc=1)	: No data available

10. STABILITY AND REACTIVITY:

Reactivity	: Vapor/air-mixtures are explosive at intense warming.
Chemical stability	: Material is stable under ambient conditions..
Possibility of hazardous reactions	Violent reactions possible with: alkali hydroxides, alkalines Strong oxidizing agents acids Risk of explosion with: mineral acids
Conditions to avoid	: Air Avoid moisture. Light. Heating.
Incompatible materials	: Rubber, various plastics.
Hazardous decomposition products	: In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION:

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product	: LD50 Oral - Rat - male and female - 108 mg/kg
Dermal Product	: 1.100,1 mg/kg
Inhalation Product	: LC50 Inhalation - Rat - male and female - 4 h - > 0,54 - < 1,63 mg/l - vapor

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Repeated dose toxicity Product	: No data available.
Skin corrosion/irritation Product	: Irritating to skin.
Serious eye damage/eye irritation Product	: Causes serious eye irritation
Respiratory or skin sensitization Product	: Maximization Test - Guinea pig, Result: negative
Carcinogenicity Product	: Suspected of causing cancer
Germ cell mutagenicity	Test system: Salmonella typhimurium, Metabolic activation: with and without metabolic activation Metabolic activation: with and without metabolic activation Result: negative Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells : Metabolic activation: without metabolic activation Result: positive Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: positive
Reproductive toxicity Product	: No data available
Specific target organ toxicity - single exposure Product	: Inhalation - May cause respiratory irritation. - nasal cavity
Specific target organ toxicity - repeated exposure Product	: No data available
Aspiration hazard Product	: No data available
Other effects	: None known.

12. ECOLOGICAL INFORMATION:**Ecotoxicity****Acute hazards to the aquatic environment**

Fish Product	: LC50 - Pimephales promelas (fathead minnow) - 16,79 - 26,35 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 - Daphnia magna (Water flea) - 10 - 56 mg/l - 48 h
Toxicity to bacteria	: static test EC50 - activated sludge - 760 mg/l - 30 min

Chronic hazards to the aquatic environment

Fish Product	: semi-static test NOEC - Danio rerio (zebra fish) - 0,33 mg/l - 12 d
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Toxicity to daphnia and other aquatic : flow-through test NOEC - Daphnia magna (Water flea) - 1,9 mg/l - 21 d
Persistence and degradability

Biodegradation Product : Readily biodegradable.

BOD/COD ratio Product : No data available.

Bioaccumulative potential

Bioconcentration factor (BCF) Product : No data available.

Partition coefficient n-octanol / water (log Kow) Product : No data available.

Mobility in soil : No data available.

Other adverse effects : No data available.

13. DISPOSAL CONSIDERATION:

Disposal instructions : Discharge, treatment, or disposal may be subject to national, state, or local laws. Disposal recommendations are based on uncontaminated material.

Contaminated packaging : Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION:

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
DOT	UN 1199	Furfural	6.1 (3)	II	No
IMDG	UN 1199	Furfural	6.1 (3)	II	No
IATA	UN 1199	Furfural	6.1 (3)	II	No

15. REGULATORY INFORMATION:

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

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16. OTHER INFORMATION:

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

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