Material Safety Data Sheet

Furfuryl Alcohol

Version: 2.0 EN

Revision Date: 2024-11

SECTION 1: IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

1.1 Product identifiers

Product Name	Furfuryl Alcohol
CAS No	98-00-0
Synonyms	2-Furanmethanol;2-Hydroxymethyl furan; Furfuril Alkol

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use	Chemical intermediate,For research and industrial use only

1.3 Details of the supplier of the safety data sheet

Company	China lithium Products technology Company Limited
	9 HG, No.99 LuJiang Road, Xiamen city, China
Telephone	+86 592 2687860
Email	info@lithium-chemical.com

1.4 Emergency telephone number

Emergency phone #	+86 592 2687860

SECTION 2: HAZARDS IDENTIFICATION

2.1 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

2.2 GHS Label elements, including precautionary statements

Hazard pictograms

Signal Word	Danger

Hazard Statements

H227	Combustible liquid
H301 + H311	Toxic if swallowed or in contact with skin

H319	Causes serious eye irritation
H330	Fatal if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure
Precautionary Statements	
Prevention	
P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P210	Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking
P260	Do not breathe mist or vapors
P264	Wash skin thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P271	Use only outdoors or in a well-ventilated area
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection
P284	Wear respiratory protection
Response	
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth
P302 + P352 + P312	IF ON SKIN: Wash with plenty of water.Call a POISON CENTER/ doctor if you feel unwell. P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P313	IF exposed or concerned: Get medical advice/ attention
P337 + P313	If eye irritation persists: Get medical ad vice/ attention
P370 + P378	In case of fire: Use dry sand, dry chemi cal or alcohol-resistant foam to extinguish
Storage	
P403 + P233	Store in a well-ventilated place. Keep container tightly closed
P403 + P235	Store in a well-ventilated place. Keep cool
P405	Store locked up
Disposal	
P501	Dispose of contents/ container to an approved waste disposal plant
Hazard Statements	
H227	Combustible liquid
H301 + H311	Toxic if swallowed or in contact with skin

H319	Causes serious eye irritation
H330	Fatal if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing cancer
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Precautionary Statements

None

Supplemental Hazard Statements

None

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

No data available

2.4 Other hazards

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Substance name	Furfuryl Alcohol
Formula	$C_5H_6O_2$
CAS No	98-00-0
EC No	202-626-1

Hazardous ingredients: Furfuryl alcohol, Concentration (% w/w):<= 100

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance

If inhaled

After inhalation: fresh air. Immediately call in physician

If breathing stops: immediately apply artificial respiration, if necessary also oxygen

In case of skin contact

Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately

In case of eye contact

rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses

If swallowed

Rinse mouth with water. Do not induce vomiting, Never give anything by mouth to an unconscious person, Call a doctor or Poison Control Center immediately

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: FIREFIGHTING MEASURES

5.1 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

5.2 Special hazards arising from the substance or mixture

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

5.3 Advice for firefighters www.lithium-chemical.com

Wear self-contained breathing apparatus for firefighting if necessary

5.4 Further information

None

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert

For personal protection see section 8

6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so, Do not let the chemical enter drains, Discharge into the environment must be avoided

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts

6.4 Reference to other sections

For disposal see section 13

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling

Keep away from open flames, hot surfaces and sources of ignition.Take precautionary measures against static discharge

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well ventilated place

Storage class

6.1A, Combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Furfuryl alcohol	98-00-0	PC-TWA	40 mg/m3	GBZ 2.1 2007
		PC-STEL	60 mg/m3	GBZ 2.1 2007
		TWA	0.2 ppm	ACGIH

8.2 Exposure controls

Appropriate engineering controls:	Change contaminated clothing. Wash hands after working with substance

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Respiratory protection

required when dusts are generated

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system

Control of environmental exposure

Do not let product enter drains

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Form: clear, liquid Colour: colorless
Odour	No data available
Odour Threshold	No data available

pH	No data available
Melting point/freezing point	-29 °C
Initial boiling point and boiling range	170 °C
Flash point	65 °C
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit 16.3 %(V) Lower explosion limit 1.8 %(V)
Vapour pressure	53 Pa (20 °C)
Vapour density	3.39 (Air = 1.0)
Relative density	No data available
Density	1.135 g/cm3 (25 °C)
Water solubility	Soluble
Partition coefficient: n-octanol/water	log Pow: 0.3 (25 °C)
Auto-ignition temperature	491 °C
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

9.2 Other safety information

No data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Forms explosive mixtures with air on intense heating

A range from approx. 15 Kelvin below the flash point is to be rated as critical

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature)

10.3 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with:

Formic acid

Nitric acid

Hydrogen peroxide

Strong acids

Exothermic reaction with:

Oxidizing agents

10.4 Conditions to avoid

Heating

May form explosive mixtures in air

Strong heating

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

LD50 Oral - Rat - 177 mg/kg

Remarks: Behavioral:Excitement.

Behavioral:Ataxia.

Cyanosis

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

LC50 Inhalation - Rat - male and female - 4 h - 1.17 mg/l - vapor

(OECD Test Guideline 403)

Remarks: (ECHA)

Acute toxicity estimate Dermal - 1,100.1 mg/kg (Expert judgment)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Skin corrosion/irritation:

No data available

Serious eye damage/eye irritation:

Eyes - Rabbit

Result: Moderate eye irritation - 24 h

Remarks: (RTECS)

Respiratory or skin sensitization:

Local lymph node assay (LLNA) - Mouse

Result: negative

(OECD Test Guideline 429)

Germ cell mutagenicity:

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Metabolic activation: without metabolic activation Result: negative

Remarks: (ECHA)

Carcinogenicity

Suspected of causing cancer

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation. - Nose

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Specific target organ toxicity - repeated exposure

Inhalation - May cause damage to organs through prolonged or repeated exposure. - Nose

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Aspiration hazard

No data available

SECTION 12: ECOLOGICAL INFORMATION

12.1 Ecotoxicity

No data available

12.2 Persistence and degradability

	Aerobic
	Concentration: 100 mg/l
	Result: Readily biodegradable
Biodegradability:	Biodegradation: 97.7 %
	Exposure time: 14 d
	Method: OECD Test Guideline 301C
	GLP: yes

12.3 Bioaccumulative potential

	Log Pow: 0.3 (25 °C)
	pH: 7
Partition coefficient: noctanol/water:	Method: OECD Test Guideline 117
	GLP: yes
	Remarks: Bioaccumulation is not expected

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

Additional ecological information	Discharge into the environment must be avoided

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can

be handled separately by the local or national waste management facilities

SECTION 14: TRANSPORT INFORMATION

ADR/RID

UN number： UN 2874	Packing group: III	Labels: Division 6.1 - Toxic substances
Proper shipping name： Furfuryl alcohol	Transport hazard class(es)： 6.1	Packing instruction (cargo aircraft):663

IMDG

IMDG UN number： 2874	Packing group: III	Labels:6.1
Proper shipping name： Furfuryl alcohol	Transport hazard class(es):6.1	EmS Code:F-A, S-A

IATA

UN number： 2874	Packing group: III	Labels:6.1
Proper shipping name: Furfuryl alcohol	Transport hazard class(es)： 6.1	

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulatory information

No data available

15.2 Other regulations

Please pay attention on the waste treatment should also comply with local regulations requirement

SECTION 16: OTHER INFORMATION

Further information

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. China Lithium Product Technology Co., Ltd.(CLPC) and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.lithium-chemical.com for additional terms and conditions of sale.