

Chemical Safety Data Sheet MSDS / SDS

Furfuryl alcohol

Revision Date:2024-03-16 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name : Furfuryl alcohol
CBnumber : CB7854741
CAS : 98-00-0
EINECS Number : 202-626-1
Synonyms : FA,2-Furanmethanol

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.
Uses advised against : none

Company Identification

Company : Chemicalbook
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone : 400-158-6606

SECTION 2: Hazards identification

GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

Precautionary statements

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 dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
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.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

P284 Wear respiratory protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container to.....

Hazard statements

H227 Combustible liquid

H302 Harmful if swallowed

H312 Harmful in contact with skin

H315 Causes skin irritation

H319 Causes serious eye irritation

H330 Fatal if inhaled

H331 Toxic if inhaled

H335 May cause respiratory irritation

H351 Suspected of causing cancer

H372 Causes damage to organs through prolonged or repeated exposure

H373 May cause damage to organs through prolonged or repeated exposure

H402 Harmful to aquatic life

Disposal

WARNING.Cancer - <https://oehha.ca.gov/proposition-65/chemicals/furfuryl-alcohol>

SECTION 3: Composition/information on ingredients

Substance

Product name	: Furfuryl alcohol
Synonyms	: FA,2-Furanmethanol
CAS	: 98-00-0
EC number	: 202-626-1
MF	: C ₅ H ₆ O ₂
MW	: 98.1

SECTION 4: First aid measures

Description of first aid measures

General advice

Consult a physician. Show this material safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

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

Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media

Do NOT use water jet.

Special hazards arising from the substance or mixture

Carbon oxides Combustible.

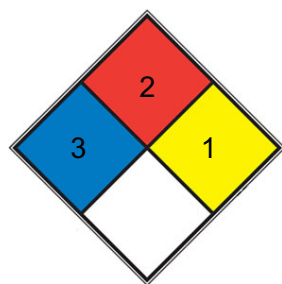
Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

Use water spray to cool unopened containers.

NFPA 704



■ HEALTH 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

■ FIRE 2 Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, [sulfur](#))

■ REACT 1 Normally stable, but can become unstable at elevated temperatures and pressures (e.g. [propene](#))

□ SPEC.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of

vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities

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

Air sensitive.

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

control parameter

Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

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

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Full contact

Material: butyl-rubber

Minimum layer thickness: 0,3 mm Break through time: 480 min

Material tested: Butoject? (KCL 897 / Aldrich Z677647, Size M)

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,4 mm Break through time: 30 min

Material tested: Camatril? (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Exposure limits

NIOSH REL: TWA 10 ppm (40 mg/m³), STEL 15 ppm (60 mg/m³), IDLH 75 ppm; OSHA PEL: TWA 50 ppm; ACGIH TLV: TWA 10 ppm, STEL 15 ppm (adopted).

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Appearance colorless clear, liquid

Odour No data available

Odour Threshold 8 ppm

pH	6 (300g/l, H ₂ O, 20°C)
Melting point/freezing point	Melting point/range: -29 °C - lit.
Initial boiling point and boiling range	170 °C - lit.
Flash point	65 °C - closed cup
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	0,53 hPa at 20 °C
Vapour density	3,39 - (Air = 1.0)
Relative density	1,135 g/cm ³ at 25 °C
Water solubility	soluble
Partition coefficient: n-octanol/water	log Pow: 0,3 at 25 °C - Bioaccumulation is not expected.
Autoignition temperature	ca.490 °C
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

Other safety information

Solubility in other solvents

Alcohol - completely soluble Ether - completely soluble Chloroform - soluble

Dissociation constant 9,55

Relative vapor density

3,39 - (Air = 1.0)

SECTION 10: Stability and reactivity

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

No data available

Conditions to avoid

Heat, flames and sparks.

Incompatible materials

Do not store near acids., Oxygen, Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides Other decomposition products - No data available

In the event of fire: see section 5

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 177 mg/kg

Remarks: Behavioral:Excitement. Behavioral:Ataxia. Cyanosis LC50 Inhalation - Rat - male and female - 4 h - 1,18 mg/l (OECD Test Guideline 403)

LD50 Dermal - Rat - 3.825 mg/kg

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

Respiratory or skin sensitization

(OECD Test Guideline 429)

Germ cell mutagenicity

No data available Ames test

Salmonella typhimurium Result: negative

Mouse - male Result: negative

Carcinogenicity

Suspected of causing cancer.

Limited evidence of carcinogenicity in animal studies

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Furfuryl alcohol)

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation. - Nose

Acute oral toxicity - Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute inhalation toxicity - mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract, Lung edema

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

No data available

Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 13 Weeks - NOAEL (No observed adverse effect level) - 53 mg/kg

RTECS: LU9100000

Central nervous system depression, Nausea, Dizziness, Headache, Exposure to and/or consumption of alcohol may increase toxic effects.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Toxicity

LC50 (4 hr) in rats: 233 ppm (Jacobson)

SECTION 12: Ecological information

Toxicity

Toxicity to fish

static test LC50 - *Leuciscus idus* (Golden orfe) - 701 mg/l - 48 h (OECD Test Guideline 203)

Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - *Daphnia magna* (Water flea) - 328 mg/l - 24 h (OECD Test Guideline 202)

Persistence and degradability

Biodegradability aerobic - Exposure time 14 d

Result: 97,7 % - Readily biodegradable. (OECD Test Guideline 301C)

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

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.

Other adverse effects

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Incompatibilities

Incompatible with oxidizers. Keep away from alkaline materials, strong bases, strong acids, oxoacids, epoxides. Contact with acids can cause polymerization. Incompatible with alkaline earth and alkali metals; strong caustics; aliphatic amines; isocyanates, acetaldehyde, benzoyl peroxide; chromic acid, chromium trioxide; cyanoacetic acid. Attacks some plastics, coatings and rubber.

Waste Disposal

Incineration in admixture with a more flammable solvent.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

UN number

ADR/RID: 2874 IMDG: 2874 IATA: 2874

14.2 UN proper shipping name ADR/RID: FURFURYL ALCOHOL IMDG: FURFURYL ALCOHOL
IATA: Furfuryl alcohol

14.3 Transport hazard class(es)
ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

14.4 Packaging group
ADR/RID: III IMDG: III IATA: III

14.5 Environmental hazards
ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

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

Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Listed. website: <https://www.mem.gov.cn/>

Measures for Environmental Management of New Chemical Substances

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

EC Inventory:Listed.

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: <https://echa.europa.eu/>

Korea Existing Chemicals List (KECL):Listed. website: <http://ncis.nier.go.kr>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: <https://emb.gov.ph/>

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: <https://www.epa.gov/>

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

SECTION 16: Other information

Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

References

- 【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- 【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- 【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>
- 【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- 【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- 【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- 【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- 【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- 【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- 【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

Disclaimer:

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