

SAFETY DATA SHEETS

According to UN GHS revision 9

5-hydroxymethylfurfural

Virsiion:1.0
Creation Date: July 15,2023
Revision Date: July 15,2023

SECTION 1: Identification

1.1 GHS Product identifier

Product name 5-hydroxymethylfurfural

1.2 Other means of identification

Other names 5-Hydroxymethyl-2-furaldehyde

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use

Uses advised against no data available

1.4 Supplier's details

Company Zhongke Guosheng (Hangzhou) Technology Co., Ltd

Address Room 401, Floor 4, Building 9, No.19 Jugong Road, Xixing Street, Binjiang District, Hangzhou City, Zhejiang Province

Telephone +86-0571-86777732

1.5 Emergency phone number

Emergency phone number 15698858777

Service hours Monday to Friday, 9am-6pm(Standard time zone:UTC/GMT +9 hours)

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with Hazardous Products Regulations (HPR) (SOR/2015-17)

Acute toxicity, oral(Category 5)	H303
Skin corrosion/irritation (Category 2)	H315
Serious eye damage/eye irritation(Category 2A)	H319
Short-term (acute) aquatic hazard (Category 3)	H402

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H303	May be harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H402	Harmful to aquatic life.

Precautionary statement(s)

Prevention

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.

P280	Wear protective gloves/protective clothing/eye protection/face protection.
Response	
P302 + P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/ doctor if you feel unwell.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
Disposal	
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards with do not result in classification

Substance does not meet the criteria for PBT/vPvB in accordance with Annex XIII.

Substance was not identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Molecular formula	Concentration
5-hydroxymethylfurfural	5-hydroxymethylfurfural	67-47-0	200-654-9	C ₆ H ₆ O ₃	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice

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

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

In case of skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

In case of eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

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/effects, acute and delayed

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

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Treatment according to symptoms, no known specific medicine.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use CO₂, chemical powder, water spray or alcohol resistant foam to extinguish.

Unsuitable extinguishing media

No special unsuitable extinguishing media

5.2 Special hazards arising from the substance or mixture

Carbon monoxide.

5.3 Advice for firefighters

Protective equipment:

Wear self-contained breathing apparatus and special tightly sealed suit (Comply with EN 133).

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. 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

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

6.4 Methods and materials for containment and cleaning up

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Store the container tightly closed in low temperature environment (sub-zero temperature) and store away from light. Store apart from foodstuff containers or incompatible materials.

7.3 Specific end use(s)

The end use(s) have not been fully determined. The substance is supplied for Research and Development purposes by professionals only.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body protection

Protective clothing. Protective boots, if the situation requires.

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 and safety characteristics

Physical state	Solid
Colour	White-Yellow - Brown
Odour	Fragrant
Melting point/freezing point	28-34°C(lit.)
Boiling point or initial boiling point and boiling range	114-116 °C at 1 mmHg
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	79 °C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	no data available
Partition coefficient n-octanol/water	no data available
Vapour pressure	0.08-1.53 Pa (20-50 °C)
Density and/or relative density	1.243 g/cm ³ (25°C)
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: LC50; Species: Daphnia magna (Water Flea) weight 4-5 mg; Conditions: freshwater, static; Concentration: 62000 ug/L for 24 hr (95% confidence interval: 53000-78000 ug/L) /formulation
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated for 5-hydroxymethyl-2-furfuraldehyde(SRC), using an estimated log Kow of -0.09(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC)

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of 5-hydroxymethyl-2-furfuraldehyde can be estimated to be 2(SRC). According to a classification scheme(2), this estimated Koc value suggests that 5-hydroxymethyl-2-furfuraldehyde is expected to have very high mobility in soil.

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Disposal Operations

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Disposal of Packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.2 UN Proper Shipping Name

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.3 Transport hazard class (es)

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.4 Packing group, if applicable

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number
5-hydroxymethylfurfural	5-hydroxymethylfurfural	67-47-0
European Inventory of Existing Commercial Chemical Substances (EINECS)		Listed.
EC Inventory		Listed.
United States Toxic Substances Control Act (TSCA) Inventory		Listed.
China Catalog of Hazardous chemicals 2015		Not Listed.
New Zealand Inventory of Chemicals (NZIoC)		Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)		Listed.
Vietnam National Chemical Inventory		Listed.
Korea Existing Chemicals List (KECL)		Listed.