



SAFETY DATA SHEET

安全技术说明书

No.: SL-JH001-SDS-EN
Revision Date: 18/JAN/2022
Version: 2.0
www.jhchemical.com

Section 1: Chemical Product and Company Identification

Product Name: Glutaraldehyde 50%

Catalog Code: JH001

Cas No.: 111-30-8

Synonym: Glutaral; Glutaraldehyde solution; 1,5-Pentanedial; Glutaric dialdehyde

Chemical Name: 1,5-Pentanedial

Chemical Formula: C₅H₈O₂

Identified application: For industrial use only.

Company Identification:

NINGXIA JINGHONG CHEMICAL CO., LTD

No.1, Section 98 Factory Area, Shizuishan Economic Development Zone, Huinong Dist.,
Shizuishan, Ningxia 753200 China

TEL: 0086-952-3813318 FAX: 0086-952-3813133

China National Chemical Accident Response Call (24H/365DAY):

0086-532-83889090

US CHEMTREC 24H Emergency Contact: (404)696-6711

Section 2: Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Corrosive to metals	1	
Acute Toxicity	3 (Oral & Inhalation)	Acute toxicity
Acute Toxicity	4 (dermal)	Acute toxicity
Skin Corrosion/Irritation	1B	Skin corrosion/irritation
Respiratory Sensitization	1	Respiratory sensitization
Skin sensitization	1	Skin sensitization
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure
Aquatic Acute	2	Hazardous to the aquatic environment - acute
Aquatic Chronic	2	Hazardous to the aquatic environment - chronic

Label elements:

Pictogram:



Signal Word:

Danger

Hazard Statements:

H301	Toxic if swallowed.
H330	Fatal if inhaled.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P260	Do not breathe dust/mist/vapours.
P273	Avoid release to the environment.
P284	In case of inadequate ventilation wear respiratory protection.
P264	Wash with plenty of water and soap thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary Statements (Response):



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- P310 Immediately call a POISON CENTER or doctor/physician.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.
Rinse skin with water/shower.
- P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- P362 + P364 Take off contaminated clothing and wash it before reuse.
- P391 Collect spillage.

Precautionary Statements (Storage):

- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.

Precautionary Statements (Disposal):

- P501 Dispose of contents/container to hazardous or special waste collection point.

Hazards not otherwise classified

The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

Labeling of special preparations (GHS):

Corrosive to the respiratory tract.

Section 3: Composition and Information on Ingredients

Composition:

Name	Cas No.	EINECS No.	% by Weight
Glutaraldehyde	111-30-8	203-856-5	50.0
Water	7732-18-5	231-791-2	47.0~49.8
Methanol	67-56-1	200-659-6	0.2~3.0



Section 4: First-aid Measures

Emergency and First Aid Procedures (General Advice):	Immediately remove contaminated clothing. If danger of loss of consciousness, place patient in recovery position and transport accordingly. Apply artificial respiration if necessary. First aid personnel should pay attention to their own safety.
If inhaled:	Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.
If on skin:	Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.
If in eyes:	Flush immediately with water for at least 30 minutes. Consult a physician.
If swallowed:	Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further symptoms are possible Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment:

Treat according to symptoms (decontamination, vital functions), no known specific antidote. Pulmonary odema prophylaxis. Medical monitoring for at least 24 hours.

Section 5: Fire Fighting Measures

Flammability Classification:	Water spray, dry powder, carbon dioxide, foam
Flash Point:	None
Explosive Limits:	LEL: N/A UEL: N/A
Autoignition Point	N/A
Suitable Extinguishing Media: Fire Fighting	Use extinguishing agent suitable for type of surrounding fire. Firefighters should be equipped with self-contained breathing



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Instructions:	apparatus and turn-out gear.
Flammable Properties and Hazards:	No data available.
Further information:	Do not allow to enter drains or waterways. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.
Impact Sensitivity:	Impact Weight: 10 kg Height of Fall: 0.4 m Method: Explosive properties Remarks: Substance/product is not impact sensitive at room temperature.

Section 6: Accidental Release Measures

Further accidental release measures:

Pack in tightly closed containers for disposal. May release highly flammable and/or corrosive gases/vapours.

Personal precautions, protective equipment and emergency procedures:

For Emergency Responders: Wear appropriate respiratory protection. Use personal protective clothing. Ensure adequate ventilation.

Environmental Precautions: Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Methods and materials for containment and cleaning up:

Small Spill Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). Dispose of absorbed material in accordance with regulations. Spills should be contained, solidified, and placed in suitable containers for disposal.

Large Spill Pump off product.

Section 7: Handling and Storage

Conditions for safe storage, including any incompatibilities: Ensure thorough ventilation of stores and work areas. Avoid aerosol formation. Protection against fire and explosion:



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Avoid all sources of ignition: heat, sparks, open flame.
Segregate from acids and bases. Segregate from strong oxidizing agents.
Suitable materials for containers: High density polyethylene (HDPE), Low density polyethylene (LDPE), Stove-lacquer RDL 50, glass.
Unsuitable materials for containers: Paper/Fibreboard, Carbon steel (Iron).
Further information on storage conditions: Keep container tightly closed and dry; store in a cool place. Store protected against freezing.
Storage stability:
Storage temperature: $\leq 25^{\circ}\text{C}$
Storage duration: 12 Months
From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

Section 8: Exposure Controls/Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Components with occupational exposure limits

Glutaraldehyde	ACGIH TLV	OSHA(PEL)
	CLV 0.05 ppm	CLV 0.2 ppm 0.8 mg/m ³

Appropriate Engineering Controls:

Provide local exhaust ventilation to control vapours/mists.

General safety and hygiene measures:

Eye wash fountains and safety showers must be easily accessible. Wear protective clothing as necessary to prevent contact. Avoid inhalation of vapours/mists. Wash soiled clothing immediately. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Store work clothing separately.

Individual Protection Measures:

(RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS)

Respiratory

Wear a NIOSH-certified (or equivalent) organic



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- protection:** vapour/particulate respirator. Do not exceed the maximum use concentration for the respirator facepiece/cartridge combination. For emergency or non-routine, high exposure situations, use a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.
- Eye/Face Protection:** Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.
- Skin Protection:**
- Hand Protection:** Chemical resistant protective gloves.
- Body Protection:** Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

Section 9: Physical and Chemical Properties

- Appearance:** Colorless to light yellow oily transparent liquid
- Odor:** Pungent. Like rotten apple.
- Boiling point/range:** >101.5°C
- Melting point/range:** -18°C
- Flash point (Closed cup):** None
- Auto-ignition temperature:** Not applicable
- Vapor pressure:** 20 hPa (20.1 °C); 28 hPa (25.1 °C); 104.68 hPa (50 °C)
- Evaporation rate (ether=1):** Not applicable under standard conditions
- Vapor Density:** 1.05 (Air = 1)
- pH:** 3.0 to 5.0
- Bulk Density:** 1.115-1.136 g/mL @25°C
- Specific gravity:** 1.115-1.136 @25°C
- Odor Threshold:** 0.04 ppm
- Water Solubility:** Easily soluble in cold water.
Soluble in diethyl ether.
Soluble in benzene, ethanol and other organic



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solvents.

Section 10: Stability and Reactivity Data

Reactivity:	Corrosion to metals: No corrosive effect on metal. Oxidizing properties: Based on its structural properties the product is not classified as oxidizing. Formation of flammable gases: Remarks: Forms no flammable gases in the presence of water.
Chemical Stability:	The product is stable if stored and handled as prescribed/indicated.
Possibility of Hazardous Reactions:	The product is chemically stable.
Conditions to Avoid:	See MSDS section 7 - Handling and storage.
Incompatible Materials:	acids, bases amines
Hazardous Decomposition Products:	Decomposition products: Thermal decomposition products: carbon monoxide, carbon dioxide Thermal decomposition: 70 °C, 2.5 K/min [DSC (DIN 51007)] 190 °C, 2.5 K/min [DSC (DIN 51007)] 395 °C, 2.5 K/min [(DSC (DIN 51007))]

Section 11: Toxicological Information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity



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Information on: glutaral

Assessment of acute toxicity: Of high toxicity after single ingestion. Of very high toxicity after short-term inhalation. Of low toxicity after short-term skin contact.

Oral

Type of value: LD50

Species: rat (female)

Value: approx. 77 mg/kg (similar to OECD guideline 401)

Information on: glutaral

Type of value: LD50

Species: rat (female)

Value: approx. 77 mg/kg (similar to OECD guideline 401)

Inhalation

Type of value: LC50

Species: rat (male/female)

Value: 0.28 - 0.39 mg/l (similar to OECD guideline 403)

Exposure time: 4 h

An aerosol was tested.

Information on: glutaral

Type of value: LC50

Species: rat (male/female)

Value: 0.28 - 0.39 mg/l (similar to OECD guideline 403)

Exposure time: 4 h

An aerosol was tested.

Dermal

Type of value: LD50

Species: rabbit (male/female)

Value: > 2,000 mg/kg (similar to OECD guideline 402)

Information on: glutaral

Type of value: LD50

Species: rabbit (male/female)



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Value: > 1,000 mg/kg (similar to OECD guideline 402)

No mortality was observed. The data on toxicology refer to the active ingredient. The value meets the highest applied test concentration.

Assessment other acute effects

Assessment of STOT single:

Corrosive to the respiratory tract.

Irritation / corrosion

Information on: glutaral

Assessment of irritating effects: Corrosive! Damages skin and eyes.

Skin

Species: rabbit

Result: Corrosive.

Method: similar to OECD guideline 404

Eye

Species: rabbit

Result: Risk of serious damage to eyes.

Method: Draize test

Sensitization

Assessment of sensitization: Sensitization after skin contact possible. The substance may cause sensitization of the respiratory tract.

Open epicutaneous test (OET)

Species: guinea pig

Result: sensitizing

Species: human

Result: sensitizing

Aspiration Hazard

No aspiration hazard expected.



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Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: After repeated exposure the prominent effect is local irritation. The substance may cause damage to the upper respiratory tract after repeated inhalation, as shown in animal studies.

Genetic toxicity

Assessment of mutagenicity: The substance was mutagenic in various test systems with bacterias and cell cultures; however, these results could not be confirmed in tests with mammals.

Carcinogenicity

Assessment of carcinogenicity: In long-term animal studies in which the substance was given in the drinking water in high concentrations, a carcinogenic effect was not observed. In long-term animal studies in which the substance was given by inhalation, a carcinogenic effect was not observed.

Reproductive toxicity

Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity

Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Other Information

The data on toxicology refer to the active ingredient.

Symptoms of Exposure

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11, further symptoms are possible

Medical conditions aggravated by overexposure



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Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product.

Section 12: Ecological Information

Toxicity

Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).

Fish Acute & Prolonged Toxicity

LC50, fathead minnow (*Pimephales promelas*), 96 h: 10.8 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea *Daphnia magna*, 48 h, immobilization: 0.69 mg/l

Aquatic Plant Toxicity

EbC50, green alga *Pseudokirchneriella subcapitata* (formerly known as *Selenastrum capricornutum*), biomass growth inhibition, 72 h: 2.64 mg/l

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
83%	28 d	OECD 301A Test	Pass
73%	28 d	OECD 306 Test	Not applicable

Bioaccumulative potential

Mobility in soil

Potential for mobility in soil is high (Koc between 50 and 150). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient, soil organic carbon/water (Koc): 120 - 500 Estimated.



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Section 13: Disposal Considerations

Waste disposal of substance:

Incinerate in suitable incineration plant, observing local authority regulations.

Do not discharge substance/product into sewer system. Incinerate or dispose of in a RCRA-licensed facility.

Container disposal:

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA: D002

Section 14: Transport Information

ROAD & RAIL

Proper Shipping Name:	CORROSIVE LIQUID, TOXIC, N.O.S
Technical Name:	GLUTARALDEHYDE
Hazard Class:	8 (6.1)
UN NO.:	2922
Packing Group:	II
Classification:	CT1
Hazard identification No:	86
Environmental Hazard:	Yes

OCEAN

Proper Shipping Name:	CORROSIVE LIQUID, TOXIC, N.O.S
Technical Name:	GLUTARALDEHYDE
Hazard Class:	8 (6.1)
UN NO.:	2922



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Packing Group: II
EMS NO. F-A, S-B
Hazard identification No: 86
Marine pollutant: P

AIR

Proper Shipping Name: CORROSIVE LIQUID, TOXIC, N.O.S
Technical Name: GLUTARALDEHYDE
Hazard Class: 8 (6.1)
UN NO.: 2922
Packing Group: II
Classification: CT1
Cargo Packing Instruction: 855
Passenger Packing Instruction: 851
Environmental Hazard: Yes

INLAND WATERWAYS

Proper Shipping Name: CORROSIVE LIQUID, TOXIC, N.O.S
Technical Name: GLUTARALDEHYDE
Hazard Class: 8 (6.1)
UN NO.: 2922
Packing Group: II
Classification: CT1
Hazard identification No: 86
Environmental Hazard: Yes

Section 15: Other Regulatory Information

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.



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Federal Regulations

Registration status:

Biocide TSCA, US released / exempt

EPCRA 311/312 (Hazard categories): Acute

NFPA Hazard codes:

Health: 3 Fire: 1 Reactivity: 0 Special:

HMIS III rating

Health: 3

Flammability: 1

Physical hazard: 0

Labeling requirements under FIFRA

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

DANGER:

CORROSIVE.

CAUSES IRREVERSIBLE EYE DAMAGE.

CAUSES SKIN BURNS.

HARMFUL IF INHALED.

HARMFUL IF ABSORBED THROUGH SKIN.

May be fatal if swallowed.

Do not get in eyes, on skin, or on clothing.

Avoid inhalation of mists/vapours.

Not to be used as an aerosol.

Do not swallow.

Prolonged or repeated skin contact may cause sensitization or allergic reactions.

May cause asthmatic signs and symptoms in some hyper-reactive individuals.

Wear protective eyewear (goggles or face shield).

Wear chemical resistant protective gloves.



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Wear protective clothing.

Wash thoroughly with soap and water after handling and before eating, drinking and using tobacco.

Remove contaminated clothing immediately and wash before reuse.

Section 16: Other Information

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