

Safety Data Sheet



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

Revision Date: 10/08/2021
Print Date: 11/13/2021

1.1 Production identifiers

Product name : GLUTARALDEHYDE 50% SOLUTION
Brand : CJ Chemicals LLC
CAS-No. : 111-30-8

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

Identified uses : Laboratory chemicals, synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : CJ Chemicals LLC
3469 E Grand River Rd #112
Howell, MI 48843
United States

Telephone : +1 (888) 274-1044

1.4 Emergency Telephone

Emergency Phone # : 1-800-424-9300 CHEMTREC (USA)
1-703-527-3887 CHEMTREC (international) 24 hours/day; 7 days/week

2. Hazards Identification

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

Classification of the product

Met. Corr.	1	Corrosive to metals
Acute Tox.	3 (oral)	Acute toxicity
Acute Tox.	3 (Inhalation - mist)	Acute toxicity
Skin Corr./Irrit.	1B	Skin corrosion/irritation
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
Resp. Sens.	1	Respiratory sensitization

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Skin Sens. 1 Skin sensitization

Label elements

Pictogram:



Signal Word:
Danger

Hazard Statement:

H290 May be corrosive to metals.
H331 Toxic if inhaled.
H301 Toxic if swallowed.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H314 Causes severe skin burns and eye damage.

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 or mist.
P260 Do not breathe mist or vapour.
P284 [In case of inadequate ventilation] wear respiratory protection.
P270 Do not eat, drink or smoke when using this product.
P264 Wash with plenty of water and soap thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P234 Keep only in original container.

Precautionary Statements (Response):

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 + P341 + P311 IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P352 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P362 + P364 Take off contaminated clothing and wash before reuse.
P390 Absorb spillage to prevent material damage.

Precautionary Statements (Storage):

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P406 Store in corrosive resistant/... container with a resistant inner liner.

Precautionary Statements (Disposal):

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

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Hazards not otherwise classified

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

According to Regulation 1994 OSHA Hazard Communication Standard: 29 CFR Part 1910.1200

Emergency overview

DANGER:

CORROSIVE TO SKIN.

Causes serious eye damage.

Toxic if swallowed.

Toxic by inhalation.

HARMFUL IF ABSORBED THROUGH SKIN.

CAUSES ASTHMATIC SIGNS AND SYMPTOMS IN HYPER-REACTIVE INDIVIDUALS.

MAY CAUSE ALLERGIC SKIN REACTION.

Use NIOSH approved respirator as needed to mitigate exposure.

Provide local exhaust ventilation to control vapours/mists.

Wear NIOSH-certified chemical goggles.

Wear full face shield if splashing hazard exists.

Eye wash fountains and safety showers must be easily accessible.

Wear chemical resistant protective gloves.

Wear protective clothing.

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

Avoid inhalation of mists/vapours.

3. Composition / Information on Ingredients

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

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
111-30-8	>= 50.3 - <= 51.0 %	glutaral
111-30-8	>= 50.3 - <= 51.0 %	glutaral

According to Regulation 1994 OSHA Hazard Communication Standard: 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
111-30-8	50.0 %	glutaral

4. First-Aid Measures

Description of first aid measures

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:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

If on skin:

Wash affected areas with water while removing contaminated clothing. Seek medical attention.

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If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

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.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
water spray, dry powder, carbon dioxide, foam

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
No particular hazards known.

Advice for fire-fighters

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

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

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear appropriate respiratory protection. Use personal protective clothing. Ensure adequate ventilation.

Environmental precautions

Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up

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Spills should be contained, solidified, and placed in suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Avoid aerosol formation.

Protection against fire and explosion:

Avoid all sources of ignition: heat, sparks, open flame.

Conditions for safe storage, including any incompatibilities

No applicable information available.

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place. Store protected against freezing.

Storage stability:

Storage temperature: ≤ 25 °C

Storage duration: 12 Months

From the data on storage duration in this safety data sheet no agreed statement regarding the warranty of application properties can be deduced.

8. Exposure Controls/Personal Protection

Advice on system design:

Provide local exhaust ventilation to control vapours/mists.

Personal protective equipment

Respiratory protection:

Wear a NIOSH-certified (or equivalent) organic 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.

Hand protection:

Chemical resistant protective gloves

Eye protection:

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures:

Eye wash fountains and safety showers must be easily accessible. Wear protective clothing as necessary to prevent contact. Employees should shower at the end of the shift. Wash soiled clothing immediately.

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9. Physical and Chemical Properties

Form:	liquid	
Odour:	pungent odour	
Odour threshold:		Not determined due to potential health hazard by inhalation.
Colour:	colourless to yellow yellow	
pH value:	3.7 5.9	(50 %(m), 23 °C) (0.5 %(m), 23 °C)
Melting point:	approx. -33 °C	(Directive 92/69/EEC, A.1)
Boiling point:	101.5 °C	(987.1 hPa)
Sublimation temperature:		not applicable
Flash point:	> 95 °C	(50 %(m)) (closed cup) No flash point - Measurement made up to the indicated temperature, pilot light extinguishes.
Flammability:	not flammable	
Lower explosion limit:	1.5 %(V)	Product not examined: Value is calculated from the data of the components.
Upper explosion limit:	50 %(V)	Product not examined: Value is calculated from the data of the components.
Autoignition:	395 °C	(50 %(m)) (Directive 92/69/EEC, A.15)
Vapour pressure:	104.68 hPa	(50 °C)
Density:	1.13 g/cm ³	(20 °C) (DIN 51757)
Relative density:	1.13	(20 °C) (pycnometer)
Partitioning coefficient n-octanol/water (log Pow):	-0.36	(23 °C) (Directive 92/69/EEC, A.8)
Self-ignition temperature:		(other) not self-igniting
Thermal decomposition:	110 °C, 520 kJ/kg (DSC (DIN 51007))	Thermal decomposition above the indicated temperature is possible.
Viscosity, dynamic:	20 mPa.s	(50 °C) (DIN 53015)
Viscosity, kinematic:	12.75 mm ² /s	(25 °C)
Solubility in water:		(20.2 °C) miscible
Solubility (quantitative):		No applicable information available.
Solubility (qualitative):	No applicable information available.	
Molar mass:	100.12 g/mol	
Evaporation rate:		Value can be approximated from Henry's Law Constant or vapor pressure.

10. Stability and Reactivity

Reactivity

Corrosion to metals:
Corrosive effect on metals.

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.

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Chemical stability

Possibility of hazardous reactions

The product is chemically stable.

Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame. See MSDS section 7 - Handling and storage.
Avoid extreme temperatures.

Incompatible materials

acids, bases
amines

Hazardous decomposition products

Decomposition products:

Thermal decomposition products: carbon monoxide, carbon dioxide

Thermal decomposition:

110 °C (DSC (DIN 51007))

Thermal decomposition above the indicated temperature is possible.

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

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

Oral

Type of value: LD50

Species: rat (male/female)

Value: approx. 158 mg/kg (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.

Type of value: LC100

Species: rat (male/female)

Value: 15 mg/l (IRT)

Exposure time: 7 h

The vapour was tested.

Dermal

Type of value: LD50

Species: rat (male/female)

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Value: > 1,000 mg/kg (OECD Guideline 402)

The data on toxicology refer to the active ingredient. The value meets the highest applied test concentration.

Type of value: LD50

Species: rabbit (male/female)

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:

Causes temporary irritation of the respiratory tract.

Irritation / corrosion

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

Skin

Species: rabbit

Result: Corrosive.

Method: 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

not applicable

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.

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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

Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product. See MSDS section 11 - Toxicological information.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Very toxic (acute effect) to aquatic organisms. Depending on local conditions and existing concentrations, disturbances in the biodegradation process of activated sludge are possible. The product has not been tested. The data have been deduced from values for a preparation or mixture with a lower substance concentration.

Toxicity to fish

LC50 (96 h) 39 mg/l, *Cyprinodon variegatus* (Fish test acute, static)

The details of the toxic effect relate to the nominal concentration.

LC50 (96 h) 9.4 mg/l, *Lepomis macrochirus* (Fish test acute, static)

The details of the toxic effect relate to the nominal concentration.

Aquatic invertebrates

EC50 (48 h) 5.75 mg/l, *Daphnia magna* (Daphnia test acute, static)

The details of the toxic effect relate to the nominal concentration.

EC50 (96 h) 0.75 mg/l, *Crassatrea virginica* (other, Flow through.)

The statement of the toxic effect relates to the analytically determined concentration.

LC50 (96 h) 5.5 mg/l, *Mysidopsis bahia* (OPP 72-3 (EPA-Guideline), Flow through.)

The statement of the toxic effect relates to the analytically determined concentration.

Aquatic plants

EC50 (72 h) 0.6 mg/l (growth rate), *Desmodemus subspicatus* (OECD Guideline 201, static)

The statement of the toxic effect relates to the analytically determined concentration.

No observed effect concentration (72 h) 0.025 mg/l, *Desmodemus subspicatus* (OECD Guideline 201, static)

The statement of the toxic effect relates to the analytically determined concentration.

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EC50 (72 h) 0.92 mg/l (growth rate), Skeletonema costatum (ISO/DIS 10253)
The details of the toxic effect relate to the nominal concentration.

Chronic toxicity to fish

No observed effect concentration (97 d) 1.6 mg/l, Oncorhynchus mykiss (See user defined text., Flow through.)
The details of the toxic effect relate to the nominal concentration.

Chronic toxicity to aquatic invertebrates

No observed effect concentration (21 d) 2.5 mg/l, Daphnia magna (OECD Guideline 202, part 2, semistatic)
The statement of the toxic effect relates to the analytically determined concentration.

Toxicity to terrestrial plants

EC20 (19 d) > 450 mg/kg, Vicia sativa (OECD Guideline 208)

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

OECD Guideline 209 aerobic
activated sludge, domestic/EC20 (30 min): approx. 15 mg/l
The details of the toxic effect relate to the nominal concentration.

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Readily biodegradable (according to OECD criteria).

Elimination information

90 - 100 % DOC reduction (28 d) (OECD 301 A (new version)) (aerobic, activated sludge, domestic)

Assessment of stability in water

In contact with water the substance will hydrolyse slowly.

Information on Stability in Water (Hydrolysis)

$t_{1/2} > 1$ a (50 °C), (Directive 92/69/EEC, C.7, pH7)
In contact with water the substance will hydrolyse slowly.

Bioaccumulative potential

Assessment bioaccumulation potential

No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).

Bioaccumulation potential

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Mobility in soil

Assessment transport between environmental compartments

The substance will not evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is possible.

Additional information

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Sum parameter

Chemical oxygen demand (COD): 1,385 mg/g

Biochemical oxygen demand (BOD) Incubation period 5 d: 235 mg/g

Ratio BOD/COD: 63 %

Ratio BOD/COD: 78 %

Ratio BOD/COD: 86 %

Adsorbable organically-bound halogen (AOX):
This product contains no organically-bound halogen.

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

14. Transport Information

Land transport

USDOT

Hazard class:	8
Packing group:	II
ID number:	UN 2922
Hazard label:	8, 6.1, EHSM
Proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (contains GLUTARALDEHYDE)

Sea transport

IMDG

Hazard class:	8
Packing group:	II
ID number:	UN 2922
Hazard label:	8, 6.1, EHSM
Marine pollutant:	YES
Proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (contains GLUTARALDEHYDE)

Air transport

IATA/ICAO

Hazard class:	8
Packing group:	II

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ID number: UN 2922
Hazard label: 8, 6.1
Proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (contains GLUTARALDEHYDE)

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Acute;

State regulations

State RTK

MA, NJ, PA

CAS Number

111-30-8

Chemical name

glutaral

CA Prop. 65:

WARNING: THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

NFPA Hazard codes:

Health : 3 Fire: 1 Reactivity: 0 Special:

HMIS III rating

Health: 3 Flammability: 1 Physical hazard: 0

Assessment of the hazard classes according to UN GHS criteria (most recent version):

Skin Corr./Irrit.	1B	Skin corrosion/irritation
Aquatic Chronic	2	Hazardous to the aquatic environment - chronic
Aquatic Acute	1	Hazardous to the aquatic environment - acute
Acute Tox.	3 (oral)	Acute toxicity
Acute Tox.	3 (Inhalation - mist)	Acute toxicity
Resp. Sens.	1	Respiratory sensitization
Skin Sens.	1	Skin sensitization
Met. Corr.	1	Corrosive to metals
Acute Tox.	5 (dermal)	Acute toxicity

16. Other Information

SDS Prepared by:

BASF NA Product Regulations
SDS Prepared on: 2014/12/04

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our

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operations on society and the environment during production, storage, transport, use and disposal of our products.

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