

Safety Data Sheet

acc. to OSHA HCS

Printing date 12/20/2022

Reviewed on 12/20/2022

1 Identification

- **Product identifier**
- **Trade name:** Glutaraldehyde 50 % solution in water
- **Article number:** 23116
- **Application of the substance / the mixture:** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de
- **Information department:** Product Safety department Tel.: +49 6221 13840-35
- **Emergency telephone number:**
Medical Emergency Information in case of poisoning:
Poison Information Center Mainz - Phone: +49 (0) 6131 19240
(advisory service in German or English language)

SERVA
■ serving scientists ■

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06

Acute Toxicity - Oral 3

H301 Toxic if swallowed.

Acute Toxicity - Inhalation 3

H331 Toxic if inhaled.



GHS08

Sensitization - Respiratory 1

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS05

Skin Corrosion 1B

H314 Causes severe skin burns and eye damage.



GHS07

Sensitization - Skin 1

H317 May cause an allergic skin reaction.

Specific Target Organ Toxicity - Single Exposure 3 H335 May cause respiratory irritation.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:** GHS05, GHS06, GHS07, GHS08

- **Signal word:** Danger

- **Hazard-determining components of labeling:**

glutaral

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· **Hazard statements:**

- Toxic if swallowed or if inhaled.
- Causes severe skin burns and eye damage.
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- May cause an allergic skin reaction.
- May cause respiratory irritation.

· **Precautionary statements**

- Avoid release to the environment.
- Wear protective gloves/protective clothing/eye protection/face protection.
- If swallowed: Immediately call a poison center/doctor.
- If on skin: Wash with plenty of soap and water.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = *3
Fire = 0
Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment:**

- **PBT:** PBT - assessment not available.
- **vPvB:** vPvB - assessment not available.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** aqueous solution

· **Dangerous components:**

111-30-8	glutaral	30-50%
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· **Additional information:**

the product contains no further substances which shall be indicated according to REACH-Regulation (Regulation (EC) No. 1907/2006).

For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

· **Description of first aid measures**

· **General information:**

- Immediately remove any clothing soiled by the product.
- Remove breathing apparatus only after contaminated clothing have been completely removed.
- In case of irregular breathing or respiratory arrest provide artificial respiration.

· **After inhalation:** Provide fresh air. Call for doctor immediately.

· **After skin contact:**

Immediate wash with copious amounts of water and soap; rinse thoroughly; seek medical advice.

· **After eye contact:**

Rinse opened eye for several minutes under running water. Remove present contact lenses, if easy to do, and continue rinsing. Consult ophthalmologist immediately.

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- **After swallowing:**
Wash out mouth. Call a doctor immediately.
Do not induce vomiting - risk of chemical burns!
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂ extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
Formation of dangerous gases or vapours is possible in case of fire.
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting media in accordance with official regulations.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Ensure adequate ventilation
Avoid contact with the eyes and skin.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up**
Dispose contaminated material as waste according to item 13.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Protective Action Criteria for Chemicals**

· PAC-1:		
111-30-8	glutaral	0.2 ppm
· PAC-2:		
111-30-8	glutaral	1 ppm
· PAC-3:		
111-30-8	glutaral	5 ppm

- **Reference to other sections**

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling:**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.

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Keep respiratory protective device available.

- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store at +2 to +8 °C
Store only in the original receptacle.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:**
Store under lock and key and with access restricted to technical experts or their assistants only.
Keep receptacle tightly sealed and store in dry conditions.
- **Specific end use(s):** No further relevant information available.

8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

111-30-8 glutaral (30-50%)

REL Ceiling limit value: 0.8 mg/m³, 0.2 ppm

See Pocket Guide App. C

TLV Ceiling limit value: 0.05 ppm

DSEN;RSEN ;activated or inactivated, A4

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**

- **Additional information about design of technical systems:** No further data; see item 7.

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Store protective clothing separately.

Immediately remove all soiled and contaminated clothing.

Avoid contact with the eyes and skin.

Wash hands before breaks and at the end of work.

- **Breathing equipment:**

Short term filter device:

Filter A/P3

- **Protection of hands:**

Neoprene gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Protective gloves

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material:**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**

Neoprene gloves

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Nitrile rubber, NBR

- **Eye protection:** Tightly sealed goggles
- **Body protection:** Protective work clothing

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information:

- | | |
|---|--------------------------|
| · Color: | Colorless |
| · Odor: | Unpleasant |
| · Odor threshold: | no information available |
| · Melting point/Melting range: | no information available |
| · Boiling point/Boiling range: | no information available |
| · Flammability (solid, gaseous): | no information available |
| · Explosion limits: | |
| · Lower: | no information available |
| · Upper: | no information available |
| · Flash point: | no information available |
| · Decomposition temperature: | no information available |
| · pH-value: | no information available |
| · Viscosity: | |
| · Kinematic viscosity: | no information available |
| · Dynamic viscosity: | no information available |
| · Solubility in / Miscibility with: | |
| · Water: | Fully miscible. |
| · Partition coefficient (n-octanol/water): | no information available |
| · Vapor pressure: | no information available |
| · Density: | no information available |
| · Relative density: | no information available |

· Other information

- | | |
|--|--------------------------|
| · Appearance: | |
| · Form: | Solution |
| · Important information on protection of health and environment, and on safety: | |
| · Danger of explosion: | no information available |
| · VOC %: | |
| · VOC content: | 0.00 % |

10 Stability and reactivity

- **Reactivity:** No further relevant informations available
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** Vapours can form flammable and explosive mixtures with air.
- **Conditions to avoid:** high temperatures
- **Incompatible materials:**
Avoid contact with:
Oxidizers, acids, bases
Amines
- **Hazardous decomposition products:** In case of fire: See Section 5

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11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Toxic if swallowed or if inhaled.

- **LD/LC50 values that are relevant for classification:**

111-30-8 glutaral

Oral	LD50	77 mg/kg (rat)
Inhalative	LC50/4h	0.28-0.39 mg/l (rat)
	LC50/96h	12.2 mg/l (trout)

- **on the skin:** Causes severe skin burns and eye damage.
- **Sensitization:**
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
- **Specific target organ toxicity - single exposure:** May cause respiratory irritation.
- **Other information (about experimental toxicology)**
Glutaraldehyde is identified as a substance of very high concern in accordance with Article 57(f) of Regulation (EC) 1907/2006 (REACH) because it is a substance with respiratory sensitising properties for which there is scientific evidence of probable serious effects to human health which gives rise to an equivalent level of concern to those substances listed in points (a) to (e) of Article 57 of the REACH regulation. (ECHA SVHC Support Document - Glutaral, CAS-No. 111-30-8; page 4)
- **Additional toxicological information:**
- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity:**
- **Aquatic toxicity:** very toxic to aquatic life.
- **Persistence and degradability:** No further relevant information available.
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:**
- **Additional ecological information:**
- **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Water hazard class 3 (Self-assessment): extremely hazardous for water

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Disposal must be made according to official regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

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- **Uncleaned packagings:**
- **Recommendation:**
Disposal of uncleaned packagings must be made according to official regulations in the same manner as the product.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, ADR, IMDG, IATA 	UN2927
<ul style="list-style-type: none"> · UN proper shipping name · DOT · ADR · IMDG, IATA 	<p>Toxic liquids, corrosive, organic, n.o.s. (glutaral solution) 2927 TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S. (glutaral solution), ENVIRONMENTALLY HAZARDOUS TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S. (glutaral solution)</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>6.1 Toxic substances 6.1, 8</p>
<ul style="list-style-type: none"> · ADR 	<div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p>6.1 Toxic substances 6.1+8</p>
<ul style="list-style-type: none"> · IMDG 	<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>6.1 Toxic substances 6.1/8</p>
<ul style="list-style-type: none"> · IATA 	<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>6.1 Toxic substances 6.1 (8)</p>
<ul style="list-style-type: none"> · Packing group · DOT, ADR, IMDG, IATA 	II
<ul style="list-style-type: none"> · Environmental hazards 	Product contains environmentally hazardous substances: glutaral

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· Marine pollutant:	Yes
· Special marking (ADR):	Symbol (fish and tree)
· Special precautions for user	Warning: Toxic substances
· Hazard identification number (Kemler code):	68
· EMS Number:	F-A,S-B
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ)	Code: E4 Maximum net quantity per inner packaging: 1 ml Maximum net quantity per outer packaging: 500 ml
· IMDG	
· Limited quantities (LQ)	100 ml
· Excepted quantities (EQ)	Code: E4 Maximum net quantity per inner packaging: 1 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 2927 TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S. (GLUTARAL SOLUTION), 6.1 (8), II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

None of the ingredients is listed.

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

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· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

111-30-8 | glutaral

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms** GHS05, GHS06, GHS07, GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**

glutaral

· **Hazard statements**

Toxic if swallowed or if inhaled.

Causes severe skin burns and eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

May cause respiratory irritation.

· **Precautionary statements**

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Immediately call a poison center/doctor.

If on skin: Wash with plenty of soap and water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Product safety department

· **Contact:** +49 6221 13840-35

· **Date of preparation / last revision** 12/20/2022

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

PBT: persistent, bioaccumulative, toxic substance (REACH)

vPvB: very persistent, very bioaccumulative substance (REACH)

REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

CLP: Regulation on classification, labelling and packaging of substances and mixtures

bw: body weight

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

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*vPvB: very Persistent and very Bioaccumulative**NIOSH: National Institute for Occupational Safety**OSHA: Occupational Safety & Health**TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**Acute Toxicity - Oral 3: Acute toxicity – Category 3**Skin Corrosion 1B: Skin corrosion/irritation – Category 1B**Sensitization - Respiratory 1: Respiratory sensitisation – Category 1**Sensitization - Skin 1: Skin sensitisation – Category 1**Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3*

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