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

- **Product identifier**: Glutaraldehyde 25% aq. soln.-vacuum distilled
- **Trade name**: Glutaraldehyde 25% aq. soln.-vacuum distilled [500ml]
- **Article number**: AGR1310
- **Relevant identified uses of the substance or mixture and uses advised against**: No further relevant information available.
- **Application of the substance / the preparation**: Universal fixative for electron microscopy.
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier**: Agar Scientific
    - Elektron Technology UK Ltd
    - Parsonage Lane
    - Stansted CM24 8GF
    - United Kingdom
    - sales@agarscientific.com
    - Tel: +44 (0) 1279 813 519
- **Further information obtainable from**: Technical Support
- **Emergency telephone number**: 24 hours: +44 (0)1856 407333

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
  - **GHS08 health hazard**
    - Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - **GHS05 corrosion**
    - Skin Corr. 1B H314 Causes severe skin burns and eye damage.
  - **GHS09 environment**
    - Aquatic Acute 1 H400 Very toxic to aquatic life.
  - **GHS07**
    - Acute Tox. 4 H302 Harmful if swallowed.
    - Acute Tox. 4 H332 Harmful if inhaled.
    - Skin Sens. 1 H317 May cause an allergic skin reaction.

(Contd. on page 2)
### Classification according to Directive 67/548/EEC or Directive 1999/45/EC
- **T; Toxic**
- **C; Corrosive**
- **Xn; Harmful**
- **Xn; Sensitising**
- **Xi; Irritant**
- **N; Dangerous for the environment**

### Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

### Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

### Label elements

- **Labelling according to EU guidelines:**
  The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

- **Code letter and hazard designation of product:**
  - T Toxic
  - N Dangerous for the environment

### Hazard-determining components of labelling:

- glutaraldehyde

### Risk phrases:

- **22** Harmful if swallowed.
- **23** Toxic by inhalation.
- **34** Causes burns.
- **37** Irritating to respiratory system.
- **42/43** May cause sensitisation by inhalation and skin contact.
- **50** Very toxic to aquatic organisms.

### Safety phrases:

- **1/2** Keep locked up and out of the reach of children.
- **23** Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
- **26** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- **29/56** Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

- CAS: 111-30-8
- EINECS: 203-856-5
- glutaraldehyde 25% aq. soln.-vacuum distilled [500ml]

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
63 In case of accident by inhalation: remove casualty to fresh air and keep at rest.
- Other hazards
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

4 First aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  Remove breathing equipment only after contaminated clothing have been completely removed.
  In case of irregular breathing or respiratory arrest provide artificial respiration.
  - After inhalation:
    Supply fresh air or oxygen; call for doctor.
    In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact:
    Immediately wash with water and soap and rinse thoroughly.
  - After eye contact:
    Rinse opened eye for several minutes under running water. Then consult a doctor.
  - After swallowing:
    Call for a doctor immediately.
    Drink plenty of water and provide fresh air. Call for a doctor immediately.
- Information for doctor:
  - 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 Firefighting measures

- Extinguishing media
- Suitable extinguishing agents:
  CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture
  No further relevant information available.
Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 09.08.2013
Revision: 09.08.2013

Trade name: Glutaraldehyde 25% aq. soln.-vacuum distilled [500ml]

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  - Wear protective equipment. Keep unprotected persons away.
  - Environmental precautions:
    - Do not allow product to reach sewage system or any water course.
    - Inform respective authorities in case of seepage into water course or sewage system.
    - Dilute with plenty of water.
    - Do not allow to enter sewers/surface or ground water.

- Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Use neutralizing agent.
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.

- 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

- Handling:
  - Precautions for safe handling
    - Ensure good ventilation/exhaustion at the workplace.
    - Open and handle receptacle with care.
    - Prevent formation of aerosols.
  - Information about fire - and explosion protection: Keep respiratory protective device available.

- Conditions for safe storage, including any incompatibilities

- Storage:
  - Requirements to be met by storerooms and receptacles: No special requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Keep container tightly sealed.

- Specific end use(s)
  - No further relevant information available.

8 Exposure controls/personal protection

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

- Control parameters

<table>
<thead>
<tr>
<th>Ingredients with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td>111-30-8 glutaral</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

- Additional information: The lists valid during the making were used as basis.
Trade name: Glutaraldehyde 25% aq. soln.-vacuum distilled [ 500ml ]

Store protective clothing separately. Avoid contact with the eyes and skin.

- **Respiratory protection:**
  In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

- **Protection of hands:**

  Protective gloves

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

  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. 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.

- **Eye protection:**

  Tightly sealed goggles

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### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

  - **General Information**
  - **Appearance:**
    - Form: Fluid
    - Colour: According to product specification
  - **Odour:** Characteristic
  - **Odour threshold:** Not determined.
  - **pH-value:** Not determined.

- **Change in condition**
  - Melting point/Melting range: Undetermined.
  - Boiling point/Boiling range: 101 °C

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:**
  - Decomposition temperature: Not determined.
  - Self-igniting: Product is not selfigniting.
  - Danger of explosion: Product does not present an explosion hazard.

- **Explosion limits:**
  - Lower: Not determined.
Trade name: Glutaraldehyde 25% aq. soln.-vacuum distilled [500ml]

Upper:

- Vapour pressure at 20 °C: Not determined.
- Vapour pressure at 20 °C: 23 hPa
- Density at 20 °C: 1.061 g/cm³
- Relative density: Not determined.
- Vapour density: Not determined.
- Evaporation rate: Not determined.
- Solubility in / Miscibility with water: Fully miscible.
- Partition coefficient (n-octanol/water): Not determined.
- Viscosity:
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- Solvent content:
  - Organic solvents: 0.0 %
  - Water: 75.0 %
  - VOC (EC): 0.00 %
- Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity
- Chemical stability
- Thermal decomposition / conditions to be avoided:
  - No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
- LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th>111-30-8 glutaral</th>
<th>134 mg/kg (rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>134 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>2560 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - on the skin: Caustic effect on skin and mucous membranes.
  - on the eye: Strong caustic effect.
- Sensitization:
  - Sensitization possible through inhalation.
  - Sensitization possible through skin contact.
- Additional toxicological information:
  - The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
    - Toxic
    - Harmful
    - Corrosive
    - Irritant
**Trade name:** Glutaraldehyde 25% aq. soln.-vacuum distilled [500ml]

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

### 12 Ecological information

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability:** No further relevant information available.
  - **Behaviour in environmental systems:**
    - **Bioaccumulative potential:** No further relevant information available.
    - **Mobility in soil:** No further relevant information available.
  - **Ecotoxicological effects:**
    - **Remark:** Very toxic for fish
  - **Additional ecological information:**
  - **General notes:**
    - Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
    - Do not allow product to reach ground water, water course or sewage system, even in small quantities.
    - Must not reach sewage water or drainage ditch undiluted or unneutralized.
    - Danger to drinking water if even extremely small quantities leak into the ground.
    - Also poisonous for fish and plankton in water bodies.
    - Very toxic for aquatic organisms

- **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.
  - **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation**
    - Must not be disposed together with household garbage. Do not allow product to reach sewage system.
  - **Uncleaned packaging:**
    - **Recommendation:** Disposal must be made according to official regulations.
    - **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

### 14 Transport information

- **UN-Number**
  - ADR, IMDG, IATA --
- **UN proper shipping name**
  - ADR, IMDG, IATA Not restricted for shipping purposes.
- **Transport hazard class(es)**
  - ADR, IMDG, IATA --
  - **Class** --
- **Packing group**
  - ADR, IMDG, IATA --
- **Environmental hazards:**
  - **Product contains environmentally hazardous substances:** glutaral
  - **Marine pollutant:** Yes

(Contd. on page 8)
15 Regulatory information

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

16 Other information

This information is based on our present knowledge and should assist the user with the safe handling of this material when properly applied. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Relevant phrases
  H301 Toxic if swallowed.
  H314 Causes severe skin burns and eye damage.
  H317 May cause an allergic skin reaction.
  H331 Toxic if inhaled.
  H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  H400 Very toxic to aquatic life.
  R23/25 Toxic by inhalation and if swallowed.
  R34 Causes burns.
  R42/43 May cause sensitisation by inhalation and skin contact.
  R50 Very toxic to aquatic organisms.

- Department issuing MSDS: Sales department
- Contact:
  sales@agarscientific.com
  Tel: +44 (0) 1279 813 519

- Abbreviations and acronyms:
  GHS: Globally Harmonized System of Classification and Labelling of Chemicals
  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)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent