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

- **Product identifier**
- **Trade name:** PARAFORMALDEHYDE 16% SOLUTION, EM GRADE
- **Article number:**
  - 15710, C004-1L, 15710-250, 15710-500, 15710-SP, 15710-S, 15710-SP-500, 15710-S-SP, 15710-100, 15710-SPECIAL, 15711
- **Relevant identified uses of the substance or mixture and uses advised against**
  - No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals

## Details of the supplier of the safety data sheet

- **Manufacturer/Supplier:** Electron Microscopy Sciences
  - 1560 Industry Road
  - USA-Hatfield, PA 19440
  - Tel: 215-412-8400  Fax: 215-412-8450
  - email: sgkck@aol.com
  - www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **Emergency telephone number:** ChemTrec 1-800-424-9300 Contract CCN7661 1-703-527-3887

# 2 Hazards identification

## Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muta. 2</td>
<td>H341 Suspected of causing genetic defects.</td>
</tr>
<tr>
<td>Carc. 1B</td>
<td>H350 May cause cancer.</td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td>H302 Harmful if swallowed.</td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td>H312 Harmful in contact with skin.</td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td>H332 Harmful if inhaled.</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>H315 Causes skin irritation.</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>H319 Causes serious eye irritation.</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
<td>H317 May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>Flam. Liq. 4</td>
<td>H227 Combustible liquid.</td>
</tr>
</tbody>
</table>

## Label elements

- **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).
- **Hazard pictograms**

![GHS07](https://example.com/ghs07.png)  ![GHS08](https://example.com/ghs08.png)

(Contd. on page 2)
Trade name: PARAFORMALDEHYDE 16% SOLUTION, EM GRADE

- **Signal word** Danger
- **Hazard-determining components of labelling:**
  - formaldehyde
- **Hazard statements**
  - Combustible liquid.
  - Harmful if swallowed, in contact with skin or if inhaled.
  - Causes skin irritation.
  - Causes serious eye irritation.
  - May cause an allergic skin reaction.
  - Suspected of causing genetic defects.
  - May cause cancer.
- **Precautionary statements**
  - If medical advice is needed, have product container or label at hand.
  - Keep out of reach of children.
  - Read label before use.
  - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - Avoid breathing dust/fume/gas/mist/vapours/spray.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - Store locked up.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Other hazards**
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.

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### 3 Composition/information on ingredients

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

#### Dangerous components:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-00-0 formaldehyde</td>
<td>10-25%</td>
</tr>
</tbody>
</table>

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

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### 4 First aid measures

- **Description of first aid measures**
- **General information:**
  - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - **After inhalation:**
    - Supply fresh air and to be sure call for a 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. If symptoms persist, consult a doctor.
  - **After swallowing:**
    - Call for a doctor immediately.
42. 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.
- Advice for firefighters
  - Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Not required.
- 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).
  - 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:
    - Protect from heat.
  - 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.
    - Protect from heat and direct sunlight.
  - 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
- Ingredients with limit values that require monitoring at the workplace:
  | 50-00-0 formaldehyde |
  | TLV Long-term value: 0,2 ppm |
  | Ceiling limit: 0,3 ppm |

- Additional information: The lists valid during the making were used as basis.
- Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. 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 breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.

    - Eye protection:

      Tightly sealed goggles

9 Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
  - Appearance:
    | Form: | Liquid |
    | Colour: | Colourless |
**Trade name: PARAFORMALDEHYDE 16% SOLUTION, EM GRADE**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour</td>
<td>Like aldehyde</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not determined.</td>
</tr>
<tr>
<td>pH-value at 20 °C</td>
<td>2.8</td>
</tr>
<tr>
<td>Change in condition</td>
<td></td>
</tr>
<tr>
<td>Melting point/Melting range</td>
<td>Undetermined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>&gt; 93 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>62 °C</td>
</tr>
<tr>
<td>Flammability (solid, gaseous)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>300 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Self-igniting</td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td>Danger of explosion</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Explosion limits</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>7.0 Vol %</td>
</tr>
<tr>
<td>Upper</td>
<td>73.0 Vol %</td>
</tr>
<tr>
<td>Vapour pressure at 20 °C</td>
<td>23 hPa</td>
</tr>
<tr>
<td>Density at 20 °C</td>
<td>1.04 g/cm³</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Solubility in / Miscibility with water</td>
<td>Fully miscible.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Solvent content</td>
<td></td>
</tr>
<tr>
<td>Organic solvents</td>
<td>16.4 %</td>
</tr>
<tr>
<td>Water</td>
<td>83.5 %</td>
</tr>
<tr>
<td>VOC (EC)</td>
<td>16.40 %</td>
</tr>
<tr>
<td>Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

---

**10 Stability and reactivity**

- **Reactivity**: No further relevant information available.
- **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 dangerous reactions known.
- **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>50-00-0 formaldehyde</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50 &gt;200 mg/kg (rat)</td>
</tr>
</tbody>
</table>

· Primary irritant effect:
  · Skin corrosion/irritation Irritant to skin and mucous membranes.
  · Serious eye damage/irritation Irritating effect.
  · Respiratory or skin sensitisation Sensitisation 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:
  Harmful
  Irritant
  Carcinogenic.

· CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
  Muta. 2, Carc. 1B

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.

· Additional ecological information:
  · General notes:
    Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Danger to drinking water if even small quantities leak into the ground.
  · 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
  - IMDG, IATA UN3334

- UN proper shipping name
  - IMDG, IATA Aviation regulated liquid, n.o.s.

- Transport hazard class(es)
  - ADR

- Label
  - IMDG
  - Class 9 Miscellaneous dangerous substances and articles.
  - IATA

- Class 9 Miscellaneous dangerous substances and articles.
- Label MISCELLANEOUS

- Environmental hazards:
  - Not applicable.

- Special precautions for user
  - Not applicable.

- Transport in bulk according to Annex II of Marpol and the IBC Code
  - Not applicable.

- Transport/Additional information:
  - IMDG
    - Limited quantities (LQ) -
    - Excepted quantities (EQ) Code: -

- UN "Model Regulation":
  - Void

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- GHS label elements The product is classified and labelled according to the Globally Harmonised System (GHS).
- Hazard pictograms

  ![GHS07](image)
  ![GHS08](image)

- Signal word Danger
- Hazard-determining components of labelling:
  formaldehyde
Hazard statements
Combustible liquid.
Harmful if swallowed, in contact with skin or if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
Suspected of causing genetic defects.
May cause cancer.

Precautionary statements
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Directive 2012/18/EU
Named dangerous substances - ANNEX I formaldehyde

Information about limitation of use:
Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

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

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.

Relevant phrases
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H341 Suspected of causing genetic defects.
H350 May cause cancer.

Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
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)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 4: Flammable liquids, Hazard Category 4
Acute Tox. 3: Acute toxicity, Hazard Category 3
Acute Tox. 4: Acute toxicity, Hazard Category 4
Trade name: PARAFORMALDEHYDE 16% Solution, EM Grade

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Mut. 2: Germ cell mutagenicity, Hazard Category 2
Carc. 1B: Carcinogenicity, Hazard Category 1B