

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifiers**

Product name : Formaldehyde solution

Product Number : F15587

Brand : Aldrich

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

Identified uses : Laboratory chemicals, Manufacture of substances

**1.3 Details of the supplier of the safety data sheet**Company : Sigma-Aldrich Company Ltd.  
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NEW ROAD, GILLINGHAM  
Dorset  
SP8 4XT  
UNITED KINGDOM

Telephone : +44 (0)1747 833000

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E-mail address : eurtechserv@sial.com

**1.4 Emergency telephone number**

Emergency Phone # : +44 (0)1747 833100

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**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]**

Acute toxicity, Oral (Category 3)

Acute toxicity, Inhalation (Category 3)

Acute toxicity, Dermal (Category 3)

Skin corrosion (Category 1B)

Skin sensitization (Category 1)

Carcinogenicity (Category 2)

Specific target organ toxicity - single exposure (Category 2)

Specific target organ toxicity - single exposure (Category 3)

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

Toxic by inhalation, in contact with skin and if swallowed. Causes burns. Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.

**2.2 Label elements****Labelling according Regulation (EC) No 1272/2008 [CLP]**

Pictogram



Signal word : Danger

Hazard statement(s)

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.  |
| H335                           | May cause respiratory irritation.  |
| H351                           | Suspected of causing cancer.   |
| H371                           | May cause damage to organs.  |
| Precautionary statement(s)     |  |
| P260                           | Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  |
| P280                           | Wear protective gloves/ protective clothing/ eye protection/ face protection.  |
| P301 + P310                    | IF SWALLOWED: 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. |
| P310                           | Immediately call a POISON CENTER or doctor/ physician.   |
| Supplemental Hazard Statements | none   |

**According to European Directive 67/548/EEC as amended.**

Hazard symbol(s)



|              |   |
|--------------|---|
| R-phrase(s)  |   |
| R23/24/25    | Toxic by inhalation, in contact with skin and if swallowed.   |
| R34          | Causes burns.   |
| R40          | Limited evidence of a carcinogenic effect.  |
| R68/20/21/22 | Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.   |
| R43          | May cause sensitization by skin contact.  |
| S-phrase(s)  |   |
| S26          | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.               |
| S36/37/39    | Wear suitable protective clothing, gloves and eye/face protection.  |
| S45          | In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). |

**2.3 Other hazards - none**

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.2 Mixtures**

|                  |   |                   |
|------------------|---|-------------------|
| Synonyms         | : | Formalin          |
| Formula          | : | CH <sub>2</sub> O |
| Molecular Weight | : | 30.03 g/mol       |

| Component  | Classification  | Concentration |
|--|---|---------------|
| <b>Formaldehyde</b>  |   |               |
| CAS-No. 50-00-0<br>EC-No. 200-001-8<br>Index-No. 605-001-00-5  | Acute Tox. 3; Skin Corr. 1B;<br>Skin Sens. 1; Carc. 2; H301 +<br>H311 + H331, H314, H317,<br>H351<br>T, Carc. Cat.3, R23/24/25 -<br>R34 - R40 - R43 | 25 - 50 %     |
| <b>Methanol</b>  |   |               |
| CAS-No. 67-56-1<br>EC-No. 200-659-6<br>Index-No. 603-001-00-X<br>Registration number 01-2119433307-44-XXXX | Flam. Liq. 2; Acute Tox. 3;<br>STOT SE 1; H225, H301 +<br>H311 + H331, H370<br>F, T, R11 - R23/24/25 -<br>R39/23/24/25                              | 3 - 10 %      |

#### **4. FIRST AID MEASURES**

##### **4.1 Description of first aid measures**

###### **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

###### **If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

###### **In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

###### **In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

###### **If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

##### **4.2 Most important symptoms and effects, both acute and delayed**

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

##### **4.3 Indication of any immediate medical attention and special treatment needed**

no data available

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#### **5. FIREFIGHTING MEASURES**

##### **5.1 Extinguishing media**

###### **Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### **5.2 Special hazards arising from the substance or mixture**

Carbon oxides

##### **5.3 Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

##### **5.4 Further information**

Use water spray to cool unopened containers.

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#### **6. ACCIDENTAL RELEASE MEASURES**

##### **6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

##### **6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

##### **6.3 Methods and materials for containment and cleaning up**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

##### **6.4 Reference to other sections**

For disposal see section 13.

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#### **7. HANDLING AND STORAGE**

##### **7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**7.2 Conditions for safe storage, including any incompatibilities**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**7.3 Specific end uses**

no data available

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters**

**Components with workplace control parameters**

| Component    | CAS-No. | Value   | Control parameters   | Basis   |
|--------------|---------|---|----------------------|---|
| Formaldehyde | 50-00-0 | STEL  | 2 ppm<br>2.5 mg/m3   | UK. EH40 WEL - Workplace Exposure Limits              |
|              | Remarks | HSC/E plans to review the limit values for this substance.  |                      |   |
|              |         | TWA   | 2 ppm<br>2.5 mg/m3   | UK. EH40 WEL - Workplace Exposure Limits              |
|              |         | HSC/E plans to review the limit values for this substance.  |                      |   |
| Methanol     | 67-56-1 | STEL  | 250 ppm<br>333 mg/m3 | UK. EH40 WEL - Workplace Exposure Limits              |
|              |         | Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity. |                      |   |
|              |         | TWA   | 200 ppm<br>266 mg/m3 | UK. EH40 WEL - Workplace Exposure Limits              |
|              |         | Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity. |                      |   |
|              |         | TWA   | 200 ppm<br>260 mg/m3 | Europe. Indicative occupational exposure limit values |
|              |         | Identifies the possibility of significant uptake through the skin<br>Indicative   |                      |   |

**8.2 Exposure controls**

**Appropriate engineering controls**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**Personal protective equipment**

**Eye/face protection**

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |   |   |
|---|---|
| a) Appearance                                   | Form: clear, liquid<br>Colour: colourless                       |
| b) Odour  | pungent   |
| c) Odour Threshold                              | no data available   |
| d) pH   | no data available   |
| e) Melting point/freezing point                 | no data available   |
| f) Initial boiling point and boiling range      | 100 °C  |
| g) Flash point                                  | 64 °C - closed cup  |
| h) Evaporation rate                             | 1   |
| i) Flammability (solid, gas)                    | no data available   |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 70 %(V)<br>Lower explosion limit: 7 %(V) |
| k) Vapour pressure                              | 53 hPa at 39 °C   |
| l) Vapour density                               | 1.04 - (Air = 1.0)  |
| m) Relative density                             | 1.09 g/mL at 25 °C  |
| n) Water solubility                             | completely soluble  |
| o) Partition coefficient: n-octanol/water       | log Pow: 0.35   |
| p) Autoignition temperature                     | no data available   |
| q) Decomposition temperature                    | no data available   |
| r) Viscosity                                    | no data available   |
| s) Explosive properties                         | no data available   |
| t) Oxidizing properties                         | no data available   |

### 9.2 Other safety information

no data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

no data available

Contains the following stabiliser(s):

Methanol (>=7 - <=8 %)

### 10.3 Possibility of hazardous reactions

no data available

#### 10.4 Conditions to avoid

Heat, flames and sparks.

#### 10.5 Incompatible materials

Strong oxidizing agents, Aniline, Phenol, Isocyanates, Acid anhydrides, Strong acids, Strong bases, Amines, Peroxides, Acid chlorides, Alkali metals, Reducing agents

#### 10.6 Hazardous decomposition products

Other decomposition products - no data available

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### 11. TOXICOLOGICAL INFORMATION

#### 11.1 Information on toxicological effects

##### Acute toxicity

no data available

##### Skin corrosion/irritation

no data available

##### Serious eye damage/eye irritation

no data available

##### Respiratory or skin sensitization

May cause allergic skin reaction.

##### Germ cell mutagenicity

no data available

##### Carcinogenicity

IARC: 1 - Group 1: Carcinogenic to humans (Formaldehyde)

##### Reproductive toxicity

no data available

##### Specific target organ toxicity - single exposure

no data available

##### Specific target organ toxicity - repeated exposure

no data available

##### Aspiration hazard

no data available

##### Potential health effects

###### Inhalation

Toxic if inhaled. Causes respiratory tract irritation.

###### Ingestion

Toxic if swallowed.

###### Skin

Toxic if absorbed through skin. Causes skin irritation.

###### Eyes

Causes eye burns.

##### Signs and Symptoms of Exposure

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

##### Additional Information

RTECS: Not available

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### 12. ECOLOGICAL INFORMATION

#### 12.1 Toxicity

no data available

#### 12.2 Persistence and degradability

no data available

#### 12.3 Bioaccumulative potential

no data available

- 12.4 Mobility in soil**  
no data available
- 12.5 Results of PBT and vPvB assessment**  
no data available
- 12.6 Other adverse effects**  
Harmful to aquatic life.

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**13. DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

**Product**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION**

**14.1 UN number**

ADR/RID: 2209

IMDG: 2209

IATA: 2209

**14.2 UN proper shipping name**

ADR/RID: FORMALDEHYDE SOLUTION

IMDG: FORMALDEHYDE SOLUTION

IATA: Formaldehyde solution

**14.3 Transport hazard class(es)**

ADR/RID: 8

IMDG: 8

IATA: 8

**14.4 Packaging group**

ADR/RID: III

IMDG: III

IATA: III

**14.5 Environmental hazards**

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

**14.6 Special precautions for user**

no data available

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**15. REGULATORY INFORMATION**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

no data available

**15.2 Chemical Safety Assessment**

no data available

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**16. OTHER INFORMATION**

**Text of H-code(s) and R-phrase(s) mentioned in Section 3**

|                    |  |
|--------------------|--|
| Acute Tox.         | Acute toxicity   |
| Carc.              | Carcinogenicity  |
| Flam. Liq.         | Flammable liquids                                      |
| H225               | Highly flammable liquid and vapour.                    |
| H301 + H311 + H331 | Toxic if swallowed, in contact with skin or if inhaled |
| H314               | Causes severe skin burns and eye damage.               |
| H317               | May cause an allergic skin reaction.                   |
| H351               | Suspected of causing cancer.                           |
| H370               | Causes damage to organs.                               |
| Skin Corr.         | Skin corrosion   |
| Skin Sens.         | Skin sensitization                                     |

|              |   |
|--------------|---|
| STOT SE      | Specific target organ toxicity - single exposure  |
| F            | Highly flammable  |
| R11          | Highly flammable.   |
| R23/24/25    | Toxic by inhalation, in contact with skin and if swallowed.   |
| R34          | Causes burns.   |
| T            | Toxic   |
| R39/23/24/25 | Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. |
| R40          | Limited evidence of a carcinogenic effect.  |
| R43          | May cause sensitization by skin contact.  |

**Further information**

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