SAFETY DATA SHEET

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

1.1 Product identifiers

<table>
<thead>
<tr>
<th>Product name</th>
<th>Formaldehyde solution, 36.5-38%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Number</td>
<td>F8775</td>
</tr>
<tr>
<td>Brand</td>
<td>Sigma</td>
</tr>
</tbody>
</table>

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                | Sigma-Aldrich Inc.               |
|                       | 3050 SPRUCE ST                  |
|                       | ST. LOUIS MO 63103              |
|                       | UNITED STATES                   |
| Telephone             | +1 314 771-5765                 |
| Fax                   | +1 800 325-5052                 |

1.4 Emergency telephone

Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

- Flammable liquids (Category 3), H226
- Acute toxicity, Oral (Category 3), H301
- Acute toxicity, Inhalation (Category 2), H330
- Acute toxicity, Dermal (Category 3), H311
- Skin corrosion (Category 1B), H314
- Serious eye damage (Category 1), H318
- Skin sensitization (Category 1), H317
- Germ cell mutagenicity (Category 2), H341
- Carcinogenicity (Category 1B), H350
- Specific target organ toxicity - single exposure (Category 1), Eyes, Central nervous system, H370
- Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Short-term (acute) aquatic hazard (Category 2), H401

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 **GHS Label elements, including precautionary statements**

**Pictogram**

<table>
<thead>
<tr>
<th>Signal Word</th>
<th>Hazard statement(s)</th>
<th>Precautionary statement(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danger</td>
<td>Flammable liquid and vapor.</td>
<td>Obtain special instructions before use.</td>
</tr>
<tr>
<td>H226</td>
<td>Toxic if swallowed or in contact with skin.</td>
<td>Do not handle until all safety precautions have been read and understood.</td>
</tr>
<tr>
<td>H301 + H311</td>
<td>Causes severe skin burns and eye damage.</td>
<td>Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.</td>
</tr>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction.</td>
<td>Keep container tightly closed.</td>
</tr>
<tr>
<td>H330</td>
<td>Fatal if inhaled.</td>
<td>Ground/bond container and receiving equipment.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
<td>Use explosion-proof electrical/ ventilating/ lighting/ equipment.</td>
</tr>
<tr>
<td>H341</td>
<td>Suspected of causing genetic defects.</td>
<td>Use only non-sparking tools.</td>
</tr>
<tr>
<td>H350</td>
<td>May cause cancer.</td>
<td>Take precautionary measures against static discharge.</td>
</tr>
<tr>
<td>H370</td>
<td>Causes damage to organs (Eyes, Central nervous system).</td>
<td>Do not breathe mist or vapors.</td>
</tr>
<tr>
<td>H401</td>
<td>Toxic to aquatic life.</td>
<td>Wash skin thoroughly after handling.</td>
</tr>
</tbody>
</table>

**Precautionary statement(s)**

- P201
  - Obtain special instructions before use.
- P202
  - Do not handle until all safety precautions have been read and understood.
- P210
  - Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
- P233
  - Keep container tightly closed.
- P240
  - Ground/bond container and receiving equipment.
- P241
  - Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- P242
  - Use only non-sparking tools.
- P243
  - Take precautionary measures against static discharge.
- P260
  - Do not eat, drink or smoke when using this product.
- P264
  - Wash skin thoroughly after handling.
- P270
  - Use only outdoors or in a well-ventilated area.
- P271
  - Contaminated work clothing must not be allowed out of the workplace.
- P273
  - Avoid release to the environment.
- P280
  - Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P284
  - Wear respiratory protection.
- P301 + P310 + P330
  - IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
- P301 + P330 + P331
  - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353
  - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P304 + P340 + P310
  - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
- P305 + P351 + P338 + P310
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
- P307 + P311
  - IF exposed: Call a POISON CENTER or doctor/ physician.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.2 Mixtures

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>formaldehyde</strong></td>
<td>Flam. Liq. 4; Acute Tox. 3; Acute Tox. 2; Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; Skin Sens. 1; Muta. 2; Carc. 1B; STOT SE 3; Aquatic Acute 2; H227, H301, H330, H311, H314, H318, H317, H341, H350, H335, H401</td>
<td>&gt;= 30 - &lt; 50 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>50-00-0</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>200-001-8</td>
<td></td>
</tr>
<tr>
<td>Index-No.</td>
<td>605-001-00-5</td>
<td></td>
</tr>
<tr>
<td>Registration number</td>
<td>01-2119488953-20-XXXX</td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301, H311, H370</td>
<td>&gt;= 10 - &lt; 20 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>67-56-1</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>200-659-6</td>
<td></td>
</tr>
<tr>
<td>Index-No.</td>
<td>603-001-00-X</td>
<td></td>
</tr>
<tr>
<td>Registration number</td>
<td>01-2119433307-44-XXXX</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.
SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

In case of eye contact
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed
After swallowing: fresh air. Make victim drink ethanol (e.g. 1 drinking glass of a 40% alcoholic beverage). Call a doctor immediately (mention methanol ingestion). Only in exceptional cases, if no medical care is available within one hour, induce vomiting (only in fully conscious persons) and make victim drink ethanol again (approx. 0.3 ml of a 40% alcoholic beverage/kg body weight/hour). Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Mixture with combustible ingredients.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at elevated temperatures.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
5.4 Further information
Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Advice on safe handling
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Storage conditions
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

Storage stability
Recommended storage temperature
15 - 25 °C

Storage class
Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Ingredients with workplace control parameters**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>formaldehyde</td>
<td>50-00-0</td>
<td>TWA</td>
<td>0.1 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>0.3 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.016 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>0.1 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>0.75 ppm</td>
<td>OSHA Specifically Regulated Chemicals/Carcinogens</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>2 ppm</td>
<td>OSHA Specifically Regulated Chemicals/Carcinogens</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>0.75 ppm</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>2 ppm</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.016 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>0.1 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>TWA</td>
<td>200 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>250 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

Remarks:
- Dermal Sensitization
- Respiratory sensitization
- Confirmed human carcinogen

**Methanol**
- Danger of cutaneous absorption

**Formaldehyde**
- Dermal Sensitization
- Respiratory sensitization
- Confirmed human carcinogen

**TWA**
- USA. NIOSH Recommended Exposure Limits
- Potential Occupational Carcinogen

**PEL**
- OSHA Specifically Regulated Chemicals/Carcinogens
- California permissible exposure limits for chemical contaminants (Title 8, Article 107)
<table>
<thead>
<tr>
<th>Parameters</th>
<th>Value</th>
<th>Biological specimen</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>200 ppm</td>
<td>USA, NIOSH Recommended Exposure Limits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>260 mg/m³</td>
<td>USA, NIOSH Recommended Exposure Limits</td>
<td></td>
</tr>
<tr>
<td>Potential for dermal absorption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TWA</td>
<td>200 ppm</td>
<td>USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>260 mg/m³</td>
<td>USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
<td></td>
</tr>
<tr>
<td>Potential for dermal absorption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEL</td>
<td>200 ppm</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>260 mg/m³</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
<td></td>
</tr>
<tr>
<td>Skin notation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>1,000 ppm</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
<td></td>
</tr>
<tr>
<td>Skin notation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEL</td>
<td>250 ppm</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>325 mg/m³</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
<td></td>
</tr>
<tr>
<td>Skin notation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TWA</td>
<td>200 ppm</td>
<td>USA, Table Z-1-A Limits for Air Contaminants (1989 vacated values)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>260 mg/m³</td>
<td>USA, Table Z-1-A Limits for Air Contaminants (1989 vacated values)</td>
<td></td>
</tr>
<tr>
<td>Skin notation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEL</td>
<td>250 ppm</td>
<td>USA, Table Z-1-A Limits for Air Contaminants (1989 vacated values)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>325 mg/m³</td>
<td>USA, Table Z-1-A Limits for Air Contaminants (1989 vacated values)</td>
<td></td>
</tr>
<tr>
<td>Skin notation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Biological occupational exposure limits**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Parameters</th>
<th>Value</th>
<th>Biological specimen</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>Methanol</td>
<td>15 mg/l</td>
<td>Urine</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
</tbody>
</table>

**Remarks**: End of shift (As soon as possible after exposure ceases)

### 8.2 Exposure controls

**Appropriate engineering controls**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles.
**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.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 480 min
Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 60 min
Material tested: Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**
 Flame retardant antistatic protective clothing.

**Respiratory protection**
Recommended Filter type: Filter type ABEK
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented. required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**
Do not let product enter drains. Risk of explosion.

---

**SECTION 9: Physical and chemical properties**

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Form: liquid</td>
</tr>
<tr>
<td></td>
<td>Color: clear</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Odor Threshold</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>No data available</td>
</tr>
</tbody>
</table>
e) Melting point/freezing point: No data available
f) Initial boiling point and boiling range: No data available
g) Flash point: 56.11 °C (133.00 °F) - closed cup
h) Evaporation rate: No data available
i) Flammability (solid, gas): No data available
j) Upper/lower flammability or explosive limits:
   - Upper explosion limit: 73 % (V)
   - Lower explosion limit: 7 % (V)
k) Vapor pressure: 69 hPa at 37 °C (99 °F)
l) Vapor density: 1.04 - (Air = 1.0)
m) Density:
   - 1.09 g/cm³ at 20 °C (68 °F)
   - Relative density: 1.0920 °C
n) Water solubility: soluble
o) Partition coefficient: n-octanol/water: No data available
p) Autoignition temperature: No data available
q) Decomposition temperature: No data available
r) Viscosity: No data available
s) Explosive properties: Not classified as explosive.
t) Oxidizing properties: none

9.2 Other safety information
   Relative vapor density: 1.04 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity
Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heating.
10.5 **Incompatible materials**  
Strong oxidizing agents

10.6 **Hazardous decomposition products**  
In the event of fire: see section 5

---

**SECTION 11: Toxicological information**

11.1 **Information on toxicological effects**

**Mixture**

**Acute toxicity**
Oral: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Inhalation: No data available  
Dermal: No data available

**Skin corrosion/irritation**
Skin - Rabbit  
Result: Corrosive after 3 minutes to 1 hour of exposure - 20 h  
(OECD Test Guideline 404)  
Remarks: Mixture causes burns.

**Serious eye damage/eye irritation**
Eyes - Rabbit  
Result: Corrosive - 7 d  
(OECD Test Guideline 405)  
Remarks: Mixture causes serious eye damage.  
Risk of blindness!

**Respiratory or skin sensitization**
Maximization Test - Guinea pig  
Result: Causes sensitization.  
May cause allergic skin reaction.  
(OECD Test Guideline 406)  
Mixture may cause an allergic skin reaction.

**Germ cell mutagenicity**
Evidence of genetic defects.

**Carcinogenicity**
Possible carcinogen.

IARC: 1 - Group 1: Carcinogenic to humans (formaldehyde)
NTP: Known - Known to be human carcinogen (formaldehyde)
OSHA: OSHA specifically regulated carcinogen (formaldehyde)

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
Mixture causes damage to organs. - Eyes, Central nervous system  
Mixture may cause respiratory irritation.
11.2 Additional Information

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Other dangerous properties cannot be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

Liver - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

Components

formaldehyde

**Acute toxicity**

LD50 Oral - Rat - 100 mg/kg
Remarks: (Lit.)

LC50 Inhalation - Rat - male and female - 4 h - < 0.57 mg/l - vapor
(OECD Test Guideline 403)

LD50 Dermal - Rabbit - 270 mg/kg
Remarks: (RTECS)
No data available

**Skin corrosion/irritation**

Skin - Rabbit
Result: Causes burns. - 20 h
(OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Remarks: Causes serious eye damage.

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse
Result: positive
(OECD Test Guideline 429)

**Germ cell mutagenicity**

Suspected of causing genetic defects.

**Carcinogenicity**

Presumed to have carcinogenic potential for humans

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

May cause respiratory irritation.
Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Methanol

Acute toxicity
Acute toxicity estimate Oral - 100.1 mg/kg
(Expert judgment)
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Symptoms: Nausea, Vomiting
Acute toxicity estimate Inhalation - 4 h - 3.1 mg/l - vapor
(Expert judgment)
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Symptoms: Irritation symptoms in the respiratory tract.
Acute toxicity estimate Dermal - 300.1 mg/kg
(Expert judgment)
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
Remarks: (ECHA)
Remarks: Drying-out effect resulting in rough and chapped skin.

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
Remarks: (ECHA)

Respiratory or skin sensitization
Sensitisation test: - Guinea pig
Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity
Based on available data the classification criteria are not met.
Test Type: Ames test
Test system: Salmonella typhimurium
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung cells
Result: negative
Method: OECD Test Guideline 474
Species: Mouse - male and female - Bone marrow
Result: negative

Carcinogenicity
Did not show carcinogenic effects in animal experiments.
Reproductive toxicity
Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
Causes damage to organs. - Eyes, Central nervous system
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Acute oral toxicity - Nausea, Vomiting
Acute inhalation toxicity - Irritation symptoms in the respiratory tract.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

SECTION 12: Ecological information

12.1 Toxicity
Mixture
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
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
No data available

12.7 Other adverse effects
No data available

Components
formaldehyde
Toxicity to fish
static test LC50 - Morone saxatilis - 6.7 mg/l - 96 h
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates
static test EC50 - Daphnia pulex (Water flea) - 5.8 mg/l - 48 h
(OECD Test Guideline 202)

Toxicity to algae
static test EC50 - Desmodesmus subspicatus (green algae) - 4.89 mg/l - 72 h
(OECD Test Guideline 201)

Toxicity to bacteria
static test EC50 - activated sludge - 19 mg/l - 3 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

<table>
<thead>
<tr>
<th>Substance</th>
<th>Test Method</th>
<th>NOEC/EC50/LC50</th>
<th>Endpoint</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>semi-static test NOEC - Daphnia magna (Water flea) - &gt;= 6.4 mg/l - 21 d</td>
<td>(OECD Test Guideline 211)</td>
<td>Toxicity to fish</td>
<td></td>
</tr>
<tr>
<td></td>
<td>semi-static test EC50 - Daphnia magna (Water flea) - 18,260 mg/l - 96 h</td>
<td>(OECD Test Guideline 202)</td>
<td>Toxicity to daphnia and other aquatic invertebrates</td>
<td></td>
</tr>
<tr>
<td></td>
<td>static test ErC50 - Pseudokirchneriella subcapitata (green algae) - ca. 22,000.0 mg/l - 96 h</td>
<td>(OECD Test Guideline 201)</td>
<td>Toxicity to algae</td>
<td></td>
</tr>
<tr>
<td></td>
<td>static test IC50 - activated sludge - &gt; 1,000 mg/l - 3 h</td>
<td>(OECD Test Guideline 209)</td>
<td>Toxicity to bacteria</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOEC - Oryzias latipes (Orange-red killifish) - 7,900 mg/l - 200 h</td>
<td>(External MSDS)</td>
<td>Toxicity to fish(Chronic toxicity)</td>
<td></td>
</tr>
</tbody>
</table>

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

**Product**

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

**SECTION 14: Transport information**

**DOT (US)**

- UN number: 1198  
- Class: 3 (8)  
- Packing group: III  
- Reportable Quantity (RQ): 259 lbs  
- Poison Inhalation Hazard: No

**IMDG**

- UN number: 1198  
- Class: 3 (8)  
- Packing group: III  
- EMS-No: F-E, S-C

**IATA**

Sigma - F8775  

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada
**SECTION 15: Regulatory information**

**SARA 302 Components**
- formaldehyde
  - CAS-No.: 50-00-0
  - Revision Date: 2008-11-03

**SARA 313 Components**
The following components are subject to reporting levels established by SARA Title III, Section 313:
- formaldehyde
  - CAS-No.: 50-00-0
  - Revision Date: 2008-11-03
- Methanol
  - CAS-No.: 67-56-1
  - Revision Date: 2007-07-01

**SARA 311/312 Hazards**
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**
- water
  - CAS-No.: 7732-18-5
  - Revision Date: 2008-11-03
- formaldehyde
  - CAS-No.: 50-00-0
  - Revision Date: 2008-11-03
- Methanol
  - CAS-No.: 67-56-1
  - Revision Date: 2007-07-01

**Pennsylvania Right To Know Components**
- formaldehyde
  - CAS-No.: 50-00-0
  - Revision Date: 2008-11-03
- Methanol
  - CAS-No.: 67-56-1
  - Revision Date: 2007-07-01

**California Prop. 65 Components**
- , which is/are known to the State of California to cause cancer, and
  - formaldehyde
    - CAS-No.: 50-00-0
    - Revision Date: 2007-09-28
- , which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.Methanol
  - Methanol
    - CAS-No.: 67-56-1
    - Revision Date: 2012-03-16
SECTION 16: Other information

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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