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

## 1.1. Product identifier

Formaldehydi solutio (35%)

Item No. 07430000

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

## Use of the substance/preparation

Chemical for synthesis

## 1.3. Details of the supplier of the safety data sheet

### Address/Manufacturer

Hänseler AG
Industriestrasse 35
9100 Herisau

| | |
|---|---|
| Telephone no. | 0041 (0)71 353 58 58 |
| E-mail address of person responsible for this SDS | sdb@haenseler.ch |

## 1.4. Emergency telephone number

Switzerland :145 / Abroad +41 (0)44 251 51 51

# SECTION 2: Hazards identification ***

## 2.1. Classification of the substance or mixture

### Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

| | |
|---|---|
| Acute Tox. 3 | H301 |
| Acute Tox. 3 | H311 |
| Acute Tox. 2 | H330 |
| Skin Corr. 1B | H314 |
| Eye Dam. 1 | H318 |
| Skin Sens. 1 | H317 |
| Muta. 2 | H341 |
| Carc. 1B | H350 |
| STOT SE 1 | H370 |
| STOT SE 3 | H335 |

The product is classified and labelled in accordance with Regulation (EC) No 1272/2008
For explanation of abbreviations see section 16.

## 2.2. Label elements

### Labelling according to regulation (EC) No 1272/2008

### Hazard pictograms

### Signal word

Danger

### Hazard statements ***

| | |
|---|---|
| H330 | Fatal if inhaled. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |
| H341 | Suspected of causing genetic defects. |
| H350 | May cause cancer. |
| H370 | Causes damage to organs. |
| H335 | May cause respiratory irritation. |
| EUH071 | Corrosive to the respiratory tract. |
| H301+H311 | Toxic if swallowed or in contact with skin. |

### Precautionary statements ***

| | |
|---|---|
| P201 | Obtain special instructions before use. |
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P284 | [In case of inadequate ventilation] wear respiratory protection. |
| P301+P310 | IF SWALLOWED: Immediately call a POISON CENTER or doctor. |
| P304+P340 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| 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. |
| P321 | Specific treatment (see ... on this label). |

### Hazardous component(s) to be indicated on label (Regulation (EC) No. 1272/2008)

contains *** methanol; formaldehyde …%

### Supplemental information

### Further supplemental information

Restricted to professional users

### Other information

Not for supply to the general public in Switzerland

## 2.3. Other hazards

The product contains no PBT substances. The product contains no vPvB substances. This product does not contain a substance that has endocrine disrupting properties with respect to human. The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

# SECTION 3: Composition/information on ingredients ***

### Hazardous ingredients ***

**formaldehyde …%**

| | | | | | |
|---|---|---|---|---|---|
| CAS No. | 50-00-0 | | | | |
| EINECS no. | 200-001-8 | | | | |
| Concentration | >= | 33 | < | 50 | % |

Classification (Regulation (EC) No. 1272/2008)

| | |
|---|---|
| Acute Tox. 3 | H301 |
| Acute Tox. 3 | H311 |
| Acute Tox. 2 | H330 |
| Skin Corr. 1B | H314 |
| Skin Sens. 1 | H317 |
| Muta. 2 | H341 |
| Carc. 1B | H350 |
| Eye Dam. 1 | H318 |

Concentration limits (Regulation (EC) No. 1272/2008)

| | | | |
|---|---|---|---|
| Eye Irrit. 2 | H319 | >= 5 < 25 % | |
| Skin Corr. 1B | H314 | >= 25 % | |
| Skin Irrit. 2 | H315 | >= 5 < 25 % | |
| Skin Sens. 1 | H317 | >= 0.2 % | |
| STOT SE 3 | H335 | >= 5 % | |

| | | | |
|---|---|---|---|
| ATE | oral | 100 | mg/kg |
| ATE | dermal | 270 | mg/kg |
| cATpE | inhalative, Dust/Mist | 0.05 | mg/l |
| cATpE | inhalative, Vapors | 0.5 | mg/l |

Additional remarks:

CLP Regulation (EC) No 1272/2008, Annex VI, Note B, D

**methanol**

CAS No. 67-56-1

EINECS no. 200-659-6

Registration no. 01-2119433307-44-XXXX

Concentration >= 15 < 25 %

Classification (Regulation (EC) No. 1272/2008)

| | |
|---|---|
| Flam. Liq. 2 | H225 |
| Acute Tox. 3 | H301 |
| Acute Tox. 3 | H311 |
| Acute Tox. 3 | H331 |
| STOT SE 1 | H370 |

Concentration limits (Regulation (EC) No. 1272/2008)

| | | |
|---|---|---|
| STOT SE 1 | H370 | >= 10 % |
| STOT SE 2 | H371 | >= 3 < 10 % |

| | | | |
|---|---|---|---|
| ATE | oral | 143 | mg/kg |
| cATpE | dermal | 300 | mg/kg |
| cATpE | inhalative, Dust/Mist | 0.5 | mg/l |

# SECTION 4: First aid measures

## 4.1. Description of first aid measures

### General information

Remove affected person from danger area, lay him down. Remove contaminated clothing immediately and dispose of safely. Keep warm, calm and covered up. Adhere to personal protective measures when giving first aid

### After inhalation

Remove the casualty into fresh air and keep him calm. Summon a doctor immediately. Irregular breathing/no breathing: artificial respiration. If the patient is likely to become unconscious, place and transport in stable sideways position. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator.

### After skin contact

Wash immediately with plenty of water for several minutes. Cover wounds with sterile dressing. Take medical treatment.

### After eye contact

Separate eyelids, wash the eyes thoroughly with water (15 min.). Seek medical advice immediately. Shield unaffected eye.

### After ingestion

Summon a doctor immediately. Rinse out mouth and give plenty of water to drink. Turn a vomiting person lying on his back onto his side. Induce the patient to vomit of his own accord only if fully conscious.

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

The following symptoms may occur: Headache, Gastrointestinal complaints, Unconsciousness, Shortness of breath, Irritation of mucosa, Chemical burn, Irritating to respiratory system. Causes very strong irritations of the eyes, skin and mucous membranes. Danger of blindness.

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

#### Hints for the physician / treatment

Symptomatic treatment (decontamination, vital functions), no specific antidote known.

#### Hints for the physician / hazards

Risk of stomach perforation

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

Carbon dioxide, Dry powder, Water spray jet, Extinguish greater fire with water spray or alcohol-resistant foam.

#### Non suitable extinguishing media

Full water jet

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

In the event of a fire, toxic and combustible gases can be formed. Can build mixtures of gas and air which are capable of explosion. Carbon monoxide (CO); Carbon dioxide (CO2); Vapours heavier than air.

### 5.3. Advice for firefighters

#### Special protective equipment for fire-fighting

Use self-contained breathing apparatus. Wear full protective suit.

#### Other information

Cool endangered containers with water spray jet. Fire residues and contaminated fire-fighting water must be disposed of in accordance with the local regulations. Heating leads to an increase in pressure - risk of bursting. Do not discharge into surface waters/groundwater.

## SECTION 6: Accidental release measures

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

Wear protective equipment. Keep away unprotected persons. Ensure supply of fresh air. Avoid contact with eyes and skin. Do not inhale vapours. Respiratory protection

### 6.2. Environmental precautions

Dilute with lot of water. Do not discharge into the drains/surface waters/groundwater. Advise water authority if spillage has entered water course or drainage system.

### 6.3. Methods and material for containment and cleaning up

Pick up with absorbent material (eg sand, kieselgur, acid binder, universal binder). When picked up, treat material as prescribed under Section 13 "Disposal". Ensure adequate ventilation.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Advice on safe handling

Provide good ventilation of working area (local exhaust ventilation if necessary). Provide good room ventilation even at ground level (vapours are heavier than air). Handle and open container with care. Avoid formation of aerosols. Keep limited supplies at workplace. If workplace limits are exceeded, a respiratory protection approved for this particular job must be worn. Keep container tightly closed. Avoid

contact with skin, eyes and clothing. Avoid inhalation of vapour and spray mist.

### Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Vapours can form an explosive mixture with air. Take action to prevent static discharges. Use explosion-proof equipment/fittings and non-sparking tools. Risk of explosion if the liquid enters the drains. Hold breathing apparatus.

## 7.2. Conditions for safe storage, including any incompatibilities

### Recommended storage temperature

| | | | |
|---|---|---|---|
| Value | 20 | 30 | °C |

### Requirements for storage rooms and vessels

explosion proof. Provide solvent-resistant and impermeable floor. Use stainless steel containers. Use polyethylene or polypropylene containers. Use glass containers. Do not use steel containers. Do not use aluminium containers.

### Hints on storage assembly

Do not store with oxidizing agents. Do not store with acids. Do not store with alkalies.

### Storage classes

| | | |
|---|---|---|
| Storage category (Switzerland) | 6.1 | Toxic substances |
| Storage class according to TRGS 510 | 6.1A | Combustible substances of acute toxicity categories 1 and 2 / very toxic hazardous substances |

### Further information on storage conditions

Keep container tightly closed. Keep container in a well-ventilated place. Protect from light. Keep under lock and key or accessible only to specialists or people who are authorized. Keep away from sources of ignition.

# SECTION 8: Exposure controls/personal protection ***

## 8.1. Control parameters

### Exposure limit values ***

**methanol**

| | | | | |
|---|---|---|---|---|
| List | SUVA | | | |
| Type | MAK | | | |
| Value | 260 | mg/m³ | 200 | ppm(V) |
| Short term exposure limit | 520 | mg/m³ | 400 | ppm(V) |

Skin resorption / sensibilisation: H; Pregnancy group: S; Remarks: H B SSc; ZNS; INRS NIOSH

**formaldehyde …%**

| | | | | |
|---|---|---|---|---|
| List | SUVA | | | |
| Type | MAK | | | |
| Value | 0,37 | mg/m³ | 0,3 | ppm(V) |
| Short term exposure limit | 0,74 | mg/m³ | 0,6 | ppm(V) |

Pregnancy group: S; Remarks: S C1#B SSc; Auge; HSE NIOSH DFG OSHA

### Derived No/Minimal Effect Levels (DNEL/DMEL)

**methanol**

| | | |
|---|---|---|
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Worker | |
| Duration of exposure | Acute | |
| Route of exposure | dermal | |
| Mode of action | Systemic effects | |
| Concentration | 20 | mg/kg/d |
| | | |
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Worker | |

| | | |
|---|---|---|
| Duration of exposure | Acute | |
| Route of exposure | inhalative | |
| Mode of action | Systemic effects | |
| Concentration | 130 | mg/m³ |

| | | |
|---|---|---|
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Worker | |
| Duration of exposure | Acute | |
| Route of exposure | inhalative | |
| Mode of action | Local effects | |
| Concentration | 130 | mg/m³ |

| | | |
|---|---|---|
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Worker | |
| Duration of exposure | Long term | |
| Route of exposure | dermal | |
| Mode of action | Systemic effects | |
| Concentration | 20 | mg/kg/d |

| | | |
|---|---|---|
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Worker | |
| Duration of exposure | Long term | |
| Route of exposure | inhalative | |
| Mode of action | Systemic effects | |
| Concentration | 130 | mg/m³ |

| | | |
|---|---|---|
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Worker | |
| Duration of exposure | Long term | |
| Route of exposure | inhalative | |
| Mode of action | Local effects | |
| Concentration | 130 | mg/m³ |

| | | |
|---|---|---|
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Consumer | |
| Duration of exposure | Acute | |
| Route of exposure | dermal | |
| Mode of action | Systemic effects | |
| Concentration | 4 | mg/kg/d |

| | | |
|---|---|---|
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Consumer | |
| Duration of exposure | Acute | |
| Route of exposure | inhalative | |
| Mode of action | Systemic effects | |
| Concentration | 26 | mg/m³ |

| | | |
|---|---|---|
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Consumer | |
| Duration of exposure | Acute | |
| Route of exposure | oral | |
| Mode of action | Systemic effects | |
| Concentration | 4 | mg/kg/d |

| | | |
|---|---|---|
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Consumer | |
| Duration of exposure | Long term | |

| | | |
|---|---|---|
| Route of exposure | inhalative | |
| Mode of action | Local effects | |
| Concentration | 26 | mg/m³ |
| | | |
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Consumer | |
| Duration of exposure | Long term | |
| Route of exposure | oral | |
| Mode of action | Systemic effects | |
| Concentration | 4 | mg/kg/d |
| | | |
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Consumer | |
| Duration of exposure | Long term | |
| Route of exposure | inhalative | |
| Mode of action | Systemic effects | |
| Concentration | 26 | mg/m³ |
| | | |
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Consumer | |
| Duration of exposure | Long term | |
| Route of exposure | dermal | |
| Mode of action | Systemic effects | |
| Concentration | 4 | mg/kg/d |
| | | |
| Type of value | Derived No Effect Level (DNEL) | |
| Reference group | Consumer | |
| Duration of exposure | Acute | |
| Route of exposure | inhalative | |
| Mode of action | Local effects | |
| Concentration | 26 | mg/m³ |

**formaldehyde …%**

| | | |
|---|---|---|
| Reference group | Worker | |
| Duration of exposure | Long term | |
| Route of exposure | inhalative | |
| Mode of action | Systemic effects | |
| Concentration | 9 | mg/m³ |
| | | |
| Reference group | Worker | |
| Duration of exposure | Long term | |
| Route of exposure | inhalative | |
| Mode of action | Local effects | |
| Concentration | 0.375 | mg/m³ |
| | | |
| Reference group | Worker | |
| Duration of exposure | Acute | |
| Route of exposure | inhalative | |
| Mode of action | Local effects | |
| Concentration | 0.75 | mg/m³ |
| | | |
| Reference group | Worker | |
| Duration of exposure | Long term | |
| Route of exposure | dermal | |
| Mode of action | Systemic effects | |
| Concentration | 240 | mg/kg/d |

| | | |
|---|---|---|
| Reference group | Worker | |
| Duration of exposure | Long term | |
| Route of exposure | dermal | |
| Mode of action | Local effects | |
| Concentration | 0.037 | mg/cm² |
| | | |
| Reference group | Consumer | |
| Duration of exposure | Long term | |
| Route of exposure | inhalative | |
| Mode of action | Systemic effects | |
| Concentration | 3.2 | mg/m³ |
| | | |
| Reference group | Consumer | |
| Duration of exposure | Long term | |
| Route of exposure | inhalative | |
| Mode of action | Local effects | |
| Concentration | 0.1 | mg/m³ |
| | | |
| Reference group | Consumer | |
| Duration of exposure | Long term | |
| Route of exposure | dermal | |
| Mode of action | Systemic effects | |
| Concentration | 102 | mg/kg/d |
| | | |
| Reference group | Consumer | |
| Duration of exposure | Long term | |
| Route of exposure | dermal | |
| Mode of action | Local effects | |
| Concentration | 0.012 | mg/cm² |
| | | |
| Reference group | Consumer | |
| Duration of exposure | Long term | |
| Route of exposure | oral | |
| Mode of action | Systemic effects | |
| Concentration | 4.1 | mg/kg/d |

## Predicted No Effect Concentration (PNEC)

**methanol**

| | | |
|---|---|---|
| Type of value | PNEC | |
| Type | Freshwater | |
| Concentration | 20 | mg/l |
| | | |
| Type of value | PNEC | |
| Type | Saltwater | |
| Concentration | 2.08 | mg/l |
| | | |
| Type of value | PNEC | |
| Type | Sediment | |
| Concentration | 570.4 | mg/kg |
| | | |
| Type of value | PNEC | |
| Type | Soil | |
| Concentration | 100 | mg/kg |
| | | |
| Type of value | PNEC | |

| | | |
|---|---|---|
| Type | Sewage treatment plant (STP) | |
| Concentration | 100 | mg/l |
| Conditions | Intermittend | |
| Concentration | 1540 | mg/l |
| Type | Marine sediment | |
| Concentration | 7.7 | mg/kg |

**formaldehyde …%**

| | | |
|---|---|---|
| Type | Water | |
| Concentration | 0.44 | mg/l |
| Type | Saltwater | |
| Concentration | 0.44 | mg/l |
| Type | Sewage treatment plant (STP) | |
| Concentration | 0.19 | mg/l |
| Type | Freshwater sediment | |
| Concentration | 2.3 | mg/l |
| Type | Marine sediment | |
| Concentration | 2.3 | mg/l |
| Type | Soil | |
| Concentration | 0.2 | mg/kg |

## 8.2. Exposure controls

### General protective and hygiene measures

Keep away from food-stuffs, beverages and feed-stocks. Store work clothing separately. Wash hands before breaks and after work. Avoid contact with skin and eyes. Hold eye wash fountain available. At work do not eat, drink, smoke or take drugs. Remove contaminated, soaked clothing immediately and dispose of safely.

### Respiratory protection

necessary; combination filter B-P3; Respiratory protection according to EN141; If vapours occur, use filter type A (= against vapours of organic compounds) according to EN 14387.

### Hand protection ***

Gloves (solvent-resistant)

| | | | |
|---|---|---|---|
| Appropriate Material | Butyl rubber - Butyl | | |
| Material thickness | | 0.5 | mm |
| Breakthrough time | >= | 8 | h |

Hand protection must comply with EN 374.

Gloves (solvent-resistant)

| | | | |
|---|---|---|---|
| Appropriate Material | Fluoro carbon rubber - FKM | | |
| Material thickness | | 0.4 | mm |
| Breakthrough time | >= | 4 | h |

### Eye protection

Tightly fitting safety glasses; Do not wear contact lenses; Eye protection must comply with EN 166.

### Body protection

Solvent-resistant protective clothing; Impermeable protective clothing; antistatic boots

# SECTION 9: Physical and chemical properties

## 9.1. Information on basic physical and chemical properties

**Physical state** liquid
**Colour** colourless
**Odour** pungent

**Melting point**

| | | | |
|---|---|---|---|
| Value | < | -15 | °C |

**Boiling point or initial boiling point and boiling range**

| | | | |
|---|---|---|---|
| Value | appr. | 97 | °C |

**Flammability**

Not self inflammable

**Upper and lower explosive limits**

| | | |
|---|---|---|
| Lower explosion limit | 7 | %(V) |
| Upper explosion limit | 72 | %(V) |

**Flash point**

| | | | | |
|---|---|---|---|---|
| Value | 66 | to | 73 | °C |

**Ignition temperature**

| | |
|---|---|
| Remarks | No data available |

**pH value**

| | | | | |
|---|---|---|---|---|
| Value | 3.5 | to | 4.5 | |
| Concentration/H2O | 100 | % | | |
| Temperature | 20 | °C | | |

**Viscosity**

**dynamic**

| | | | | |
|---|---|---|---|---|
| Value | 1.8 | to | 2.5 | mPa.s |
| Temperature | 25 | °C | | |
| Method | DIN 51562 | | | |

**Solubility(ies)**

organic solvents

| | | | |
|---|---|---|---|
| Value | 49.0 | | % |

**Partition coefficient n-octanol/water (log value)**

| | |
|---|---|
| log Pow | 0.35 |

**Vapour pressure**

| | | | |
|---|---|---|---|
| Value | 1 | | hPa |
| Temperature | 20 | °C | |

**Density and/or relative density**

| | | | | |
|---|---|---|---|---|
| Value | 1.08 | to | 1.10 | g/cm³ |
| Temperature | 20 | °C | | |

## 9.2. Other information

**Solubility in water**

| | |
|---|---|
| Remarks | Completely miscible |

**Other information**

Forms esplosive mixture with air are possible.

# SECTION 10: Stability and reactivity

## 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability
No decomposition if stored and applied as directed.

### 10.3. Possibility of hazardous reactions
Vapours can form an explosive mixture with air. Oxidising agents

### 10.4. Conditions to avoid
Keep away from sources of heat and ignition. Sparks

### 10.5. Incompatible materials
Oxidising agents, strong acids, Bases, peroxides, hydrogen peroxide (H2O2)

### 10.6. Hazardous decomposition products
Flammable gases/vapours, Carbon dioxide, Carbon monoxide, Formaldehyde

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

**Acute oral toxicity**

| | | |
|---|---|---|
| ATE | 206.2302 | mg/kg |
| Method | calculated value (Regulation (EC) No. 1272/2008) | |

**Acute oral toxicity (Components)**

**methanol**

| | | |
|---|---|---|
| Species | Human | |
| LDLo | 143 | mg/kg |
| Source | RTECS | |

**formaldehyde …%**

| | | |
|---|---|---|
| Species | rat | |
| cATpE | 100 | mg/kg |

**Acute dermal toxicity**

| | | |
|---|---|---|
| ATE | 524.2718 | mg/kg |
| Method | calculated value (Regulation (EC) No. 1272/2008) | |

**Acute dermal toxicity (Components)**

**methanol**

| | | |
|---|---|---|
| Species | rabbit | |
| LD50 | 17100 | mg/kg |

**formaldehyde …%**

| | | |
|---|---|---|
| Species | rabbit | |
| LD50 | 270 | mg/kg |

**Acute inhalational toxicity**

| | | |
|---|---|---|
| ATE | 1.3158 | mg/l |
| Administration/Form | Vapors | |
| Method | calculated value (Regulation (EC) No. 1272/2008) | |
| ATE | 0.1266 | mg/l |
| Administration/Form | Dust/Mist | |
| Method | calculated value (Regulation (EC) No. 1272/2008) | |

**Acute inhalative toxicity (Components)**

**methanol**

| | | |
|---|---|---|
| Species | rat | |
| LC50 | 131.25 | mg/l |

| | | | |
|---|---|---|---|
| Duration of exposure | 4 | h | |
| Administration/Form | Vapors | | |
| Source | ECHA | | |

**formaldehyde …%**

| | | | |
|---|---|---|---|
| cATpE | 100 | | ppm(V) |
| Duration of exposure | 4 | h | |
| Administration/Form | Gases | | |

**formaldehyde …%**

| | | | |
|---|---|---|---|
| Species | rat | | |
| NOAEL | 6 | | ppm(V) |
| Duration of exposure | 28 | d | |

**formaldehyde …%**

| | | | |
|---|---|---|---|
| Species | rat | | |
| LOAEL | 10 | | ppm(V) |
| Duration of exposure | 28 | d | |

## Skin corrosion/irritation

Remarks Corrosive action on the skin and mucous membrane.

## Skin corrosion/irritation (Components)

**methanol**

| | |
|---|---|
| Species | rabbit |
| Remarks | No effect of irritation known. |
| Source | ECHA |

**methanol**

Remarks Repeated and prolonged skin contact may lead to defatting and irritation of the skin.

**formaldehyde …%**

| | |
|---|---|
| Species | rabbit |
| evaluation | corrosive |
| Method | OECD 404 |

## Serious eye damage/irritation

evaluation strongly corrosive

## Serious eye damage/irritation (Components)

**methanol**

| | |
|---|---|
| Species | rabbit |
| Method | OECD 405 |
| Remarks | None |

**formaldehyde …%**

| | |
|---|---|
| Species | rabbit |
| evaluation | irritant - risk of serious damage to eyes |

## Sensitization

Remarks May cause sensitization by skin contact.

## Sensitization (Components)

**methanol**

| | |
|---|---|
| Species | guinea pig |
| Method | OECD 406 |
| Remarks | No sensitation effect known. |
| Source | Maximierungstest (GMPT) |

**formaldehyde …%**

| | |
|---|---|
| Route of exposure | dermal |
| Species | mouse |
| evaluation | sensitizing |

| | |
|---|---|
| Method | OECD 429 |

## Subacute, subchronic, chronic toxicity

| | |
|---|---|
| Remarks | Suspicion about carcinogenic effect. |
| Remarks | Chronic exposure causes damage of respiratoy organs. |
| Remarks | Repeated absorption/exposure may cause disorder of the kidneys. |

## Subacute, subchronic, chronic toxicity (Components)

**methanol**

| | |
|---|---|
| Remarks | No data available. |

## Mutagenicity (Components)

**methanol**

| | |
|---|---|
| Species | Salmonella typhimurium |
| evaluation | No mutagenicity in the Ames-test. |
| Method | OECD 471 |
| Remarks | negative |

**methanol**

| | |
|---|---|
| Remarks | negative on animals |

**formaldehyde …%**

| | |
|---|---|
| evaluation | Information on genotoxicity in vivo available. |
| Method | Ames test |
| Remarks | positive |

## Reproduction toxicity (Components)

**methanol**

| | |
|---|---|
| Species | Rats (male/female) |
| Dose | 1.33 mg/l |
| evaluation | No negative effects |

**formaldehyde …%**

| | |
|---|---|
| Route of exposure | inhalative |
| Species | rat |
| evaluation | No negative effects |

## Carcinogenicity (Components)

**methanol**

| | |
|---|---|
| Remarks | No data available |

**formaldehyde …%**

| | |
|---|---|
| Route of exposure | inhalative |
| Species | rat |
| Duration of exposure | 28 Months |
| evaluation | Definitely confirmed as causing cancer in the experiment on test animals. |

## Specific Target Organ Toxicity (STOT) (Components)

**methanol**

**Single exposure**

| | |
|---|---|
| evaluation | Causes damage to organs.<br>Route of exposure oral<br>Organs: Eyes |
| Species | Human |

**methanol**

| | |
|---|---|
| | Route of exposure inhalative |
| Species | rat |
| NOAEL | 0.13 mg/l |
| Duration of exposure | 365 d |
| Method | OECD 453 |

**methanol**

| | | |
|---|---|---|
| | Route of exposure inhalative | |
| Species | Rats (male/female) | |
| LOAEL | 1.3 | mg/l |
| Duration of exposure | 365 | d |
| Method | OECD 453 | |
| Source | Merck KGaA Safety Data Sheet | |

**formaldehyde …%**

**Single exposure**

evaluation: May cause respiratory irritation.

**formaldehyde …%**

**Repeated exposure**

Remarks: None

### 11.2 Information on other hazards

#### Endocrine disrupting properties with respect to humans

The product does not contain a substance that has endocrine disrupting properties with respect to humans.

#### Experience in practice

After Swallowing: burns in mouth, throat, oesophagus and gastrointetinal tract. Risk of perforation in the oesophagus and stomach.

## SECTION 12: Ecological information ***

### 12.1. Toxicity

#### Fish toxicity

| | | | |
|---|---|---|---|
| Reference substance | formaldehyde …% | | |
| Species | zebra fish (Brachydanio rerio) | | |
| LC50 | 41 | | mg/l |
| Duration of exposure | 96 | h | |
| Reference substance | methanol | | |
| Species | Bluegill (Lepomis macrochirus) | | |
| LC50 | 15400 | | mg/l |
| Duration of exposure | 96 | h | |
| Reference substance | formaldehyde …% | | |
| Species | Fathead minnow (Pimephales promelas) | | |
| LC50 | 24 | | mg/l |
| Duration of exposure | 96 | h | |

#### Fish toxicity (Components)

**methanol**

| | | | |
|---|---|---|---|
| Species | Bluegill (Lepomis macrochirus) | | |
| LC50 | 15400 | | mg/l |
| Duration of exposure | 96 | h | |
| Source | (EPA 600/3-75/009) | | |

**formaldehyde …%**

| | | | |
|---|---|---|---|
| Species | Morone saxatilis | | |
| LC50 | 6.7 | | mg/l |
| Duration of exposure | 96 | h | |

**formaldehyde …%**

| | | | |
|---|---|---|---|
| Species | Oryzias latipes | | |
| NOEC | >= 48 | | mg/l |
| Duration of exposure | 28 | d | |

### Daphnia toxicity

| | | | |
|---|---|---|---|
| Reference substance | formaldehyde …% | | |
| Species | Daphnia magna | | |
| EC50 | 2 | | mg/l |
| Duration of exposure | 48 | h | |
| Reference substance | methanol | | |
| Species | Daphnia magna | | |
| EC50 | > 10000 | | mg/l |
| Duration of exposure | 48 | h | |

### Daphnia toxicity (Components)

**methanol**

| | | | |
|---|---|---|---|
| Species | Daphnia magna | | |
| EC50 | > 10000 | | mg/l |
| Duration of exposure | 48 | h | |
| Source | IUCLID | | |

**methanol**

| | | | |
|---|---|---|---|
| Species | Daphnia magna | | |
| EC50 | 18260 | | mg/l |
| Duration of exposure | 96 | h | |
| Method | OECD 201 | | |

**formaldehyde …%**

| | | | |
|---|---|---|---|
| Species | Daphnia pulex | | |
| EC50 | 5.8 | | mg/l |
| Duration of exposure | 48 | h | |
| Method | OECD 201 | | |

**formaldehyde …%**

| | | | |
|---|---|---|---|
| Species | Daphnia magna | | |
| | >= 6.4 | | mg/l |
| Duration of exposure | 21 | d | |
| Method | OECD 211 | | |

### Algae toxicity

| | | | |
|---|---|---|---|
| Reference substance | formaldehyde …% | | |
| Species | Scenedesmus quadricauda | | |
| IC5 | 2.5 | | mg/l |
| Duration of exposure | 8 | d | |

### Algae toxicity (Components)

**methanol**

| | | | |
|---|---|---|---|
| Species | Raphidocelis subcapitata | | |
| EC50 | 22000 | | mg/l |
| Duration of exposure | 96 | h | |
| Method | OECD 201 | | |

**formaldehyde …%**

| | | | |
|---|---|---|---|
| Species | Desmodesmus subspicatus | | |
| EC50 | 4.89 | | mg/l |
| Duration of exposure | 72 | h | |
| Method | OECD 201 | | |

### Bacteria toxicity

| | | | |
|---|---|---|---|
| Reference substance | formaldehyde …% | | |
| Species | Pseudomonas putida | | |
| EC0 | 14 | | mg/l |
| Duration of exposure | 16 | h | |

### Bacteria toxicity (Components)

**methanol**

| | | | | |
|---|---|---|---|---|
| Species | activated sludge | | | |
| IC50 | > | 1000 | | mg/l |
| Duration of exposure | | 3 | h | |
| Method | OECD 209 | | | |

**methanol**

| | | | | |
|---|---|---|---|---|
| Species | activated sludge | | | |
| EC50 | | 20000 | | mg/l |
| Duration of exposure | | 15 | h | |

**methanol**

| | | | | |
|---|---|---|---|---|
| Species | activated sludge | | | |
| IC50 | | 1000 | | mg/l |
| Duration of exposure | | 24 | h | |

**formaldehyde …%**

| | | | | |
|---|---|---|---|---|
| EC50 | | 34.1 | | mg/l |
| Duration of exposure | | 120 | h | |

## 12.2. Persistence and degradability

### Biodegradability

| | | | | |
|---|---|---|---|---|
| Value | | 97 | | % |
| Duration of test | | 5 | d | |
| evaluation | Readily biodegradable | | | |

### Biodegradability (Components)

**formaldehyde …%**

| | | | | |
|---|---|---|---|---|
| Value | | 91 | | % |
| Duration of test | | 14 | d | |
| evaluation | Readily biodegradable | | | |
| Method | OECD 301C | | | |
| Remarks | Test conducted with a similar formulation. | | | |

**methanol**

| | | | | |
|---|---|---|---|---|
| Value | | 91 | | % |
| Duration of test | | 14 | d | |
| evaluation | Readily biodegradable | | | |
| Method | OECD 301C | | | |

### Ready degradability (Components)

**methanol**

| | | | | |
|---|---|---|---|---|
| Value | | 99 | | % |
| Duration of test | | 30 | d | |
| Method | OECD 301D | | | |
| Source | Merck KGaA Safety Data Sheet | | | |

### Chemical oxygen demand (COD) (Components)

**methanol**

| | | | | |
|---|---|---|---|---|
| Value | | 1420 | | mg/g |
| Source | IUCLID | | | |

### Biochemical oxygen demand (BOD5) (Components)

**methanol**

| | | | | | |
|---|---|---|---|---|---|
| Value | | 600 | to | 1120 | mg/g |
| Source | IUCLID | | | | |

## 12.3. Bioaccumulative potential

### Partition coefficient n-octanol/water (log value)

| | |
|---|---|
| log Pow | 0.35 |

### Octanol/water partition coefficient (log Pow) (Components)

**methanol**

log Pow -0.77

### Bioconcentration factor (BCF) (Components)

**methanol**

BCF 1.0

## 12.4. Mobility in soil

### Mobility in soil (Components)

**methanol**

Will not adsorb on soil.

## 12.5. Results of PBT and vPvB assessment

### Results of PBT and vPvB assessment ***

The product contains no PBT substances
The product contains no vPvB substances.

## 12.6 Endocrine disrupting properties

### Endocrine disrupting properties with respect to the envrionment

The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

## 12.7. Other adverse effects

### General information / ecology

Harmful to aquatic organisms. Do not allow it to reach ground water, water bodies or sewage system. Hazard for drinking water supplies. Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

# SECTION 13: Disposal considerations

## 13.1. Waste treatment methods

### Disposal recommendations for the product

EWC waste code No not dispose with rubbish.
EWC waste code Should not be released into the sanitary sewer system.
In accordance with regulations for special waste, must be taken, to an authorised special waste incineration plant.

### Disposal recommendations for packaging

Disposal in compliance with local and national regulations.

# SECTION 14: Transport information ***

| | Land transport ADR/RID *** | Marine transport IMDG/GGVSee *** | Air transport ICAO/IATA *** |
|---|---|---|---|
| Tunnel restriction code | E | | |
| **14.1. UN number** | 2209 | 2209 | 2209 |
| **14.2. UN proper shipping name** | FORMALDEHYDE SOLUTION (methanol) | FORMALDEHYDE SOLUTION (methanol) | FORMALDEHYDE SOLUTION (methanol) |
| **14.3. Transport hazard class(es)** | 8 | 8 | 8 |
| Label |  |  |  |
| **14.4. Packing group** | III | III | III |
| Limited Quantity | 5 l | | |
| Transport category | 3 | | |

# SECTION 15: Regulatory information

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

### Water Hazard Class (Germany)

| | |
|---|---|
| Water Hazard Class (Germany) | WGK 3 |
| Remarks | Derivation of WGK according to Annex 1 No. 5.2 AwSV |

## 15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

# SECTION 16: Other information

### Hazard statements listed in Chapter 3

| | |
|---|---|
| H225 | Highly flammable liquid and vapour. |
| 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. |
| H318 | Causes serious eye damage. |
| H330 | Fatal if inhaled. |
| H331 | Toxic if inhaled. |
| H335 | May cause respiratory irritation. |
| H341 | Suspected of causing genetic defects. |
| H350 | May cause cancer. |
| H370 | Causes damage to organs. |

### CLP categories listed in Chapter 3

| | |
|---|---|
| Acute Tox. 2 | Acute toxicity, Category 2 |

| | |
|---|---|
| Acute Tox. 3 | Acute toxicity, Category 3 |
| Carc. 1B | Carcinogenicity, Category 1B |
| Eye Dam. 1 | Serious eye damage, Category 1 |
| Flam. Liq. 2 | Flammable liquid, Category 2 |
| Muta. 2 | Germ cell mutagenicity, Category 2 |
| Skin Corr. 1B | Skin corrosion, Category 1B |
| Skin Sens. 1 | Skin sensitization, Category 1 |
| STOT SE 1 | Specific target organ toxicity - single exposure, Category 1 |
| STOT SE 3 | Specific target organ toxicity - single exposure, Category 3 |

## Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: ***
This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.