

Safety data sheet Safety data sheet

acc. to Safe Work Australia - Code of Practice



Bouin´s fixative , ready-to-use, for histology

article number: **6482**
Version: **GHS 3.0 en**
Replaces version of: 2022-06-09
Version: (GHS 2)

date of compilation: 2018-11-27
Revision: 2023-03-01

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

1.1 Product identifier

Identification of the substance **Bouin´s fixative , ready-to-use, for histology**
Article number 6482

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

Relevant identified uses: Laboratory and analytical use
Laboratory chemical
Uses advised against: Do not use for products which come into direct contact with the skin. Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household).

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone:+49 (0) 721 - 56 06 0

Telefax: +49 (0) 721 - 56 06 149

e-mail: sicherheit@carlroth.de

Website: www.carlroth.de

Competent person responsible for the safety data sheet: :Department Health, Safety and Environment

e-mail (competent person): **sicherheit@carlroth.de**

1.4 Emergency telephone number

| Name | Street | Postal code/city | Telephone | Website |
|------------------------------------------------------|-----------------|--------------------|-----------|---------|
| NSW Poisons Information Centre Childrens Hospital | Hawkesbury Road | 2145 Westmead, NSW | 131126 | |

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

| Section | Hazard class | Category | Hazard class and category | Hazard statement |
|---------|-----------------------------------|----------|---------------------------|------------------|
| 2.6 | Flammable liquid | 4 | Flam. Liq. 4 | H227 |
| 3.10 | Acute toxicity (oral) | 4 | Acute Tox. 4 | H302 |
| 3.1D | Acute toxicity (dermal) | 4 | Acute Tox. 4 | H312 |
| 3.2 | Skin corrosion/irritation | 1C | Skin Corr. 1C | H314 |
| 3.3 | Serious eye damage/eye irritation | 1 | Eye Dam. 1 | H318 |

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| Section | Hazard class | Cat-egory | Hazard class and category | Hazard statement |
|---------|---------------------------------------------------------------------------------|-----------|---------------------------|------------------|
| 3.4S | Skin sensitisation | 1 | Skin Sens. 1 | H317 |
| 3.5 | Germ cell mutagenicity | 2 | Muta. 2 | H341 |
| 3.6 | Carcinogenicity | 1B | Carc. 1B | H350 |
| 3.8 | Specific target organ toxicity - single exposure | 2 | STOT SE 2 | H371 |
| 3.8R | Specific target organ toxicity - single exposure (respiratory tract irritation) | 3 | STOT SE 3 | H335 |

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis. Immediate effects can be expected after short-term exposure. The product is combustible and can be ignited by potential ignition sources.

2.2 Label elements

Labelling

Signal word

Danger

Pictograms

GHS05, GHS07,
GHS08



Hazard statements

H227 Combustible liquid
H302+H312 Harmful if swallowed or in contact with skin
H314 Causes severe skin burns and eye damage
H317 May cause an allergic skin reaction
H335 May cause respiratory irritation
H341 Suspected of causing genetic defects
H350 May cause cancer
H371 May cause damage to organs (eye)

Precautionary statements

Precautionary statements - prevention

P260 Do not breathe dusts or mists
P280 Wear protective gloves/protective clothing

Precautionary statements - response

P302+P352 IF ON SKIN: Wash with plenty of soap and water
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P370+P378 In case of fire: Use sand, carbon dioxide or powder extinguisher for extinction

Precautionary statements - storage

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P403+P233 Store in a well-ventilated place. Keep container tightly closed

For professional users only

Hazardous ingredients for labelling: Formaldehyde ... %, Methanol, Picric acid, Acetic acid ... %

2.3 Other hazards

This material is combustible, but will not ignite readily.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.

SECTION 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

| Name of substance | Identifier | Wt% | Classification acc. to GHS | Pictograms | Notes |
|--------------------|----------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------------------|
| Formaldehyde ... % | CAS No 50-00-0 | 10 – < 15 | Acute Tox. 3 / H301 Acute Tox. 3 / H311 Acute Tox. 3 / H331 Skin Corr. 1C / H314 Eye Dam. 1 / H318 Skin Sens. 1 / H317 Muta. 2 / H341 Carc. 1B / H350 STOT SE 3 / H335 | | B D IARC: 1 RoC "Known" |
| Acetic acid ... % | CAS No 64-19-7 | 5 – < 10 | Flam. Liq. 3 / H226 Skin Corr. 1A / H314 Eye Dam. 1 / H318 | | B(a) |
| Methanol | CAS No 67-56-1 | 1 – < 5 | Flam. Liq. 2 / H225 Acute Tox. 3 / H301 Acute Tox. 3 / H311 Acute Tox. 3 / H331 STOT SE 1 / H370 | | |
| Picric acid | CAS No 88-89-1 | 1 – < 5 | Expl. 1.1 / H201 Acute Tox. 3 / H301 Acute Tox. 3 / H311 Acute Tox. 3 / H331 | | |

Notes

B(a): The classification refers to an aqueous solution

B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid ... %'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.

D: Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed in Part 3. However, such substances are sometimes placed on the market in a non-stabilised form. In this case, the supplier must state on the label the name of the substance followed by the words 'non-stabilised'.

IARC: 1: IARC group 1: carcinogenic to humans (International Agency for Research on Cancer)

RoC NTP-RoC: Known To Be A Human Carcinogen

"Known"

:

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For full text of abbreviations: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off immediately all contaminated clothing. Self-protection of the first aider.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

After contact with skin, wash immediately with plenty of water. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye.

Following ingestion

Rinse mouth immediately and drink plenty of water. Rinse mouth with water (only if the person is conscious). If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects). In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

4.2 Most important symptoms and effects, both acute and delayed

Corrosion, Gastric perforation, Vomiting, Risk of serious damage to eyes, Risk of blindness, Allergic reactions, Irritation, Cough, Dyspnoea, Headache, Vertigo, Dizziness

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings
water spray, alcohol resistant foam, dry extinguishing powder, BC-powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

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5.2 Special hazards arising from the substance or mixture

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours may form explosive mixtures with air. Ingredients of the mixture combustible. The product itself does not burn.

Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray. Avoidance of ignition sources.

6.2 Environmental precautions

Keep away from drains, surface and ground water. The product is an acid. Before discharge into sewage plants the product normally needs to be neutralised. Danger of explosion.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provision of sufficient ventilation. Handle and open container with care. Provision of sufficient ventilation. Avoid exposure. Clear contaminated areas thoroughly.

Measures to prevent fire as well as aerosol and dust generation



Keep away from sources of ignition - No smoking.

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Take precautionary measures against static discharge.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed.

Incompatible substances or mixtures

Observe hints for combined storage.

Protect against external exposure, such as

high temperatures, direct light irradiation, UV-radiation/sunlight

Consideration of other advice:

Ventilation requirements

Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

| Country | Name of agent | CAS No | Identifier | TWA [ppm] | TWA [mg/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | Notation | Source |
|---------|------------------------------------|---------|------------|-----------|--------------------------|------------|---------------------------|-----------------|--------------------------------|----------|--------|
| AU | formaldehyde | 50-00-0 | WES | 1 | 1.2 | 2 | 2.5 | | | | WES |
| AU | acetic acid | 64-19-7 | WES | 10 | 25 | 15 | 37 | | | | WES |
| AU | methyl alcohol (methanol) | 67-56-1 | WES | 200 | 262 | 250 | 328 | | | H | WES |
| AU | picric acid (2,4,6-trinitrophenol) | 88-89-1 | WES | | 0.1 | | | | | | WES |

Notation

| | |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ceiling-C | Ceiling value is a limit value above which exposure should not occur |
| H | Absorbed through the skin |
| STEL | Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified) |
| TWA | Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified) |

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| Relevant DNELs of components of the mixture | | | | | | |
|---------------------------------------------|---------|-----------|-------------------------|------------------------------------|-------------------|----------------------------|
| Name of substance | CAS No | End-point | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| Formaldehyde ... % | 50-00-0 | DNEL | 9 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Formaldehyde ... % | 50-00-0 | DNEL | 0.375 mg/m ³ | human, inhalatory | worker (industry) | chronic - local effects |
| Formaldehyde ... % | 50-00-0 | DNEL | 0.75 mg/m ³ | human, inhalatory | worker (industry) | acute - local effects |
| Formaldehyde ... % | 50-00-0 | DNEL | 240 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |
| Formaldehyde ... % | 50-00-0 | DNEL | 37 µg/cm ² | human, dermal | worker (industry) | chronic - local effects |
| Methanol | 67-56-1 | DNEL | 130 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Methanol | 67-56-1 | DNEL | 130 mg/m ³ | human, inhalatory | worker (industry) | acute - systemic effects |
| Methanol | 67-56-1 | DNEL | 130 mg/m ³ | human, inhalatory | worker (industry) | chronic - local effects |
| Methanol | 67-56-1 | DNEL | 130 mg/m ³ | human, inhalatory | worker (industry) | acute - local effects |
| Methanol | 67-56-1 | DNEL | 20 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |
| Methanol | 67-56-1 | DNEL | 20 mg/kg bw/day | human, dermal | worker (industry) | acute - systemic effects |

| Relevant PNECs of components of the mixture | | | | | | |
|---------------------------------------------|---------|-----------|-----------------|-----------------------|------------------------------|------------------------------|
| Name of substance | CAS No | End-point | Threshold level | Organism | Environmental compartment | Exposure time |
| Formaldehyde ... % | 50-00-0 | PNEC | 0.44 mg/l | aquatic organisms | freshwater | short-term (single instance) |
| Formaldehyde ... % | 50-00-0 | PNEC | 0.44 mg/l | aquatic organisms | marine water | short-term (single instance) |
| Formaldehyde ... % | 50-00-0 | PNEC | 0.19 mg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| Formaldehyde ... % | 50-00-0 | PNEC | 2.3 mg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| Formaldehyde ... % | 50-00-0 | PNEC | 2.3 mg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| Formaldehyde ... % | 50-00-0 | PNEC | 0.2 mg/kg | terrestrial organisms | soil | short-term (single instance) |
| Methanol | 67-56-1 | PNEC | 20.8 mg/l | aquatic organisms | freshwater | short-term (single instance) |
| Methanol | 67-56-1 | PNEC | 2.08 mg/l | aquatic organisms | marine water | short-term (single instance) |
| Methanol | 67-56-1 | PNEC | 100 mg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |

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| Relevant PNECs of components of the mixture | | | | | | |
|---------------------------------------------|---------|-----------|-----------------|-----------------------|---------------------------|------------------------------|
| Name of substance | CAS No | End-point | Threshold level | Organism | Environmental compartment | Exposure time |
| Methanol | 67-56-1 | PNEC | 77 mg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| Methanol | 67-56-1 | PNEC | 7.7 mg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| Methanol | 67-56-1 | PNEC | 100 mg/kg | terrestrial organisms | soil | short-term (single instance) |

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection. Wear face protection.

Skin protection



• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

Butyl caoutchouc (butyl rubber)

• material thickness

>0,4 mm

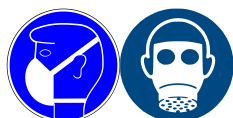
• breakthrough times of the glove material

>480 minutes (permeation: level 6)

• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection



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Respiratory protection necessary at: Aerosol or mist formation. Type: AX (gas filters and combined filters against low-boiling point organic compounds, colour code: Brown).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|----------------------------------------------------------|--------------------------------------------------|
| Physical state | liquid |
| Colour | yellow |
| Odour | like formaldehyde |
| Melting point/freezing point | not determined |
| Boiling point or initial boiling point and boiling range | >35 °C |
| Flammability | flammable liquid in accordance with GHS criteria |
| Lower and upper explosion limit | not determined |
| Flash point | not determined |
| Auto-ignition temperature | not determined |
| Decomposition temperature | not relevant |
| pH (value) | 1 – 2 (20 °C) |
| Kinematic viscosity | not determined |

Solubility(ies)

Water solubility miscible in any proportion

Partition coefficient

Partition coefficient n-octanol/water (log value): this information is not available

Vapour pressure not determined

Density and/or relative density

Density ~1 g/cm³ at 20 °C

Relative vapour density information on this property is not available

Particle characteristics not relevant (liquid)

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard classes: There is no additional information.

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Other safety characteristics:

Miscibility

completely miscible with water

SECTION 10: Stability and reactivity

10.1 Reactivity

The mixture contains reactive substance(s). Risk of ignition.

If heated

Risk of ignition.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Risk of explosion in case of drying up,

Violent reaction with: strong oxidiser, Permanganates, for example potassium permanganate, Peroxides, Nitric acid, Strong alkali, Hydrogen peroxide

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from heat. Direct light irradiation. UV-radiation/sunlight. Do not dry up the product.

10.5 Incompatible materials

different metals

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to GHS

Acute toxicity

Harmful if swallowed. Harmful in contact with skin.

GHS of the United Nations, annex 4. May be harmful if inhaled.

| Acute toxicity estimate (ATE) of components of the mixture | | | |
|------------------------------------------------------------|---------|--------------------|-----------|
| Name of substance | CAS No | Exposure route | ATE |
| Formaldehyde ... % | 50-00-0 | oral | 100 mg/kg |
| Formaldehyde ... % | 50-00-0 | dermal | 300 mg/kg |
| Formaldehyde ... % | 50-00-0 | inhalation: vapour | 3 mg/l/4h |
| Picric acid | 88-89-1 | oral | 200 mg/kg |
| Picric acid | 88-89-1 | dermal | 300 mg/kg |

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| Acute toxicity estimate (ATE) of components of the mixture | | | |
|------------------------------------------------------------|---------|-----------------------|-------------------------|
| Name of substance | CAS No | Exposure route | ATE |
| Picric acid | 88-89-1 | inhalation: dust/mist | 0.5 mg _i /4h |

| Acute toxicity of components of the mixture | | | | | |
|---------------------------------------------|---------|--------------------|----------|-------------------------|---------|
| Name of substance | CAS No | Exposure route | Endpoint | Value | Species |
| Acetic acid ... % | 64-19-7 | oral | LD50 | 3,310 mg/kg | rat |
| Picric acid | 88-89-1 | oral | LD50 | 200 mg/kg | rat |
| Methanol | 67-56-1 | inhalation: vapour | LC50 | 131 mg _i /4h | rat |
| Methanol | 67-56-1 | oral | LD50 | 5,628 mg/kg | rat |
| Methanol | 67-56-1 | oral | LDLo | 143 mg/kg | human |
| Methanol | 67-56-1 | dermal | LD50 | 15,800 mg/kg | rabbit |

Skin corrosion/irritation

Causes severe skin burns and eye damage.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

Suspected of causing genetic defects.

Carcinogenicity

May cause cancer.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

May cause damage to organs (eye). May cause respiratory irritation.

| Hazard category | Target organ | Exposure route |
|-----------------|--------------|----------------|
| 2 | eye | if exposed |

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects)

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- **If in eyes**

causes burns, Causes serious eye damage, risk of blindness

- **If inhaled**

Irritation to respiratory tract, cough, Dyspnoea

- **If on skin**

causes severe burns, causes poorly healing wounds, May produce an allergic reaction, pruritis, localised redness

- **Other information**

none

11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.

SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic life.

| Aquatic toxicity (acute) of components of the mixture | | | | | |
|-------------------------------------------------------|---------|----------|-------------|-----------------------|---------------|
| Name of substance | CAS No | Endpoint | Value | Species | Exposure time |
| Formaldehyde ... % | 50-00-0 | LC50 | 6.7 mg/l | fish | 96 h |
| Formaldehyde ... % | 50-00-0 | EC50 | 5.8 mg/l | aquatic invertebrates | 48 h |
| Formaldehyde ... % | 50-00-0 | ErC50 | 4.89 mg/l | algae | 72 h |
| Acetic acid ... % | 64-19-7 | LC50 | >300.8 mg/l | fish | 96 h |
| Acetic acid ... % | 64-19-7 | EC50 | >300.8 mg/l | aquatic invertebrates | 48 h |
| Acetic acid ... % | 64-19-7 | ErC50 | >300.8 mg/l | algae | 72 h |
| Methanol | 67-56-1 | LC50 | 15,400 mg/l | fish | 96 h |
| Methanol | 67-56-1 | ErC50 | 22,000 mg/l | algae | 96 h |

| Aquatic toxicity (chronic) of components of the mixture | | | | | |
|---------------------------------------------------------|---------|----------|---------|----------------|---------------|
| Name of substance | CAS No | Endpoint | Value | Species | Exposure time |
| Formaldehyde ... % | 50-00-0 | EC50 | 19 mg/l | microorganisms | 3 h |

12.2 Persistence and degradability

| Degradability of components of the mixture | | | | | | |
|--------------------------------------------|---------|----------------|------------------|------|--------|--------|
| Name of substance | CAS No | Process | Degradation rate | Time | Method | Source |
| Formaldehyde ... % | 50-00-0 | DOC removal | 99 % | 28 d | | ECHA |
| Acetic acid ... % | 64-19-7 | biotic/abiotic | 99 % | 30 d | | |

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| Degradability of components of the mixture | | | | | | |
|--------------------------------------------|---------|------------------|------------------|------|--------|--------|
| Name of substance | CAS No | Process | Degradation rate | Time | Method | Source |
| Methanol | 67-56-1 | biotic/abiotic | 99 % | 30 d | | |
| Methanol | 67-56-1 | oxygen depletion | 69 % | 5 d | | ECHA |

12.3 Bioaccumulative potential

Data are not available.

| Bioaccumulative potential of components of the mixture | | | | |
|--------------------------------------------------------|---------|------|----------------------------|----------|
| Name of substance | CAS No | BCF | Log KOW | BOD5/COD |
| Acetic acid ... % | 64-19-7 | 3.16 | -0.17 (pH value: 7, 25 °C) | |
| Picric acid | 88-89-1 | | 1.33 | |
| Methanol | 67-56-1 | | -0.77 | |

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

Relevant provisions relating to waste(Basel Convention)

Properties of waste which render it hazardous

H8 Corrosives
H11 Toxic (Delayed or chronic)

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

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SECTION 14: Transport information

14.1 UN number

| | |
|----------------|------------|
| UN RTDG | UN 3265 |
| IMDG-Code | UN 3265 |
| ICAO-TI | UN 3265 |

14.2 UN proper shipping name

| | |
|----------------------------------------|-------------------------------------------|
| UN RTDG | CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. |
| IMDG-Code | CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. |
| ICAO-TI | Corrosive liquid, acidic, organic, n.o.s. |
| Technical name (hazardous ingredients) | Formaldehyde ... %, Acetic acid ... % |

14.3 Transport hazard class(es)

| | |
|----------------|---|
| UN RTDG | 8 |
| IMDG-Code | 8 |
| ICAO-TI | 8 |

14.4 Packing group

| | |
|----------------|-----|
| UN RTDG | III |
| IMDG-Code | III |
| ICAO-TI | III |

14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

There is no additional information.

14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Transport information National regulations Additional information (UN RTDG)

| | |
|-------------------------------------------------------------------------------------|---------------------|
| UN number | 3265 |
| Class | 8 |
| Packing group | III |
| Danger label(s) | 8 |
|  | |
| Special provisions (SP) | 223, 274 UN RTDG |
| Excepted quantities (EQ) | E1 UN RTDG |



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| | |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Limited quantities (LQ) | 5 L UN RTDG |
| Emergency Action Code | 2X |
| International Maritime Dangerous Goods Code (IMDG) - Additional information | |
| Proper shipping name | CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. |
| Particulars in the shipper's declaration | UN3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., (contains: Formaldehyde ... %, Acetic acid ... %), 8, III |
| Marine pollutant | - |
| Danger label(s) | 8 |
|  | |
| Special provisions (SP) | 223, 274 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 L |
| EmS | F-A, S-B |
| Stowage category | A |
| Segregation group | 1 - Acids |
| International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information | |
| Proper shipping name | Corrosive liquid, acidic, organic, n.o.s. |
| Particulars in the shipper's declaration | UN3265, Corrosive liquid, acidic, organic, n.o.s., (contains: Formaldehyde ... %, Acetic acid ... %), 8, III |
| Danger label(s) | 8 |
|  | |
| Special provisions (SP) | A3 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 1 L |

SECTION 15: Regulatory information

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

There is no additional information.

National regulations(Australia)

Australian Inventory of Chemical Substances(AICS)

All ingredients are listed or exempt from listing.

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

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National inventories

| Country | Inventory | Status |
|---------|------------|----------------------------------------|
| AU | AIIC | all ingredients are listed |
| CA | DSL | all ingredients are listed |
| CN | IECSC | all ingredients are listed |
| EU | ECSI | all ingredients are listed |
| EU | REACH Reg. | all ingredients are listed |
| JP | CSCL-ENCS | all ingredients are listed |
| JP | ISHA-ENCS | not all ingredients are listed |
| KR | KECI | all ingredients are listed |
| MX | INSQ | all ingredients are listed |
| NZ | NZIoC | all ingredients are listed |
| PH | PICCS | all ingredients are listed |
| TR | CICR | not all ingredients are listed |
| TW | TCSI | all ingredients are listed |
| US | TSCA | all ingredients are listed as "ACTIVE" |

Legend

| | |
|------------|-------------------------------------------------------------------------|
| AIIC | Australian Inventory of Industrial Chemicals |
| CICR | Chemical Inventory and Control Regulation |
| CSCL-ENCS | List of Existing and New Chemical Substances (CSCL-ENCS) |
| DSL | Domestic Substances List (DSL) |
| ECSI | EC Substance Inventory (EINECS, ELINCS, NLP) |
| IECSC | Inventory of Existing Chemical Substances Produced or Imported in China |
| INSQ | National Inventory of Chemical Substances |
| ISHA-ENCS | Inventory of Existing and New Chemical Substances (ISHA-ENCS) |
| KECI | Korea Existing Chemicals Inventory |
| NZIoC | New Zealand Inventory of Chemicals |
| PICCS | Philippine Inventory of Chemicals and Chemical Substances (PICCS) |
| REACH Reg. | REACH registered substances |
| TCSI | Taiwan Chemical Substance Inventory |
| TSCA | Toxic Substance Control Act |

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2.1 | | Classification acc. to GHS: change in the listing (table) | yes |
| 2.1 | The most important adverse physicochemical, human health and environmental effects: Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis. The product is combustible and can be ignited by potential ignition sources. | The most important adverse physicochemical, human health and environmental effects: Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis. Immediate effects can be expected after short-term exposure. The product is combustible and can be ignited by potential ignition sources. | yes |

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| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------|
| 2.2 | | Hazard statements: change in the listing (table) | yes |
| 2.2 | | Precautionary statements - prevention: change in the listing (table) | yes |
| 2.2 | Hazardous ingredients for labelling: Formaldehyde ... %, Acetic acid ... %, Picric acid | Hazardous ingredients for labelling: Formaldehyde ... %, Methanol, Picric acid, Acetic acid ... % | yes |
| 2.3 | | Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$. | yes |
| 14.1 | UN number: not subject to transport regulations | UN number | yes |
| 14.1 | | UN RTDG: UN 3265 | yes |
| 14.1 | | IMDG-Code: UN 3265 | yes |
| 14.1 | | ICAO-TI: UN 3265 | yes |
| 14.2 | UN proper shipping name: not assigned | UN proper shipping name | yes |
| 14.2 | | UN RTDG: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. | yes |
| 14.2 | | IMDG-Code: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. | yes |
| 14.2 | | ICAO-TI: Corrosive liquid, acidic, organic, n.o.s. | yes |
| 14.2 | | Technical name (hazardous ingredients): Formaldehyde ... %, Acetic acid ... % | yes |
| 14.3 | Transport hazard class(es): not assigned | Transport hazard class(es) | yes |
| 14.3 | | UN RTDG: 8 | yes |
| 14.3 | | IMDG-Code: 8 | yes |
| 14.3 | | ICAO-TI: 8 | yes |
| 14.4 | Packing group: not assigned | Packing group | yes |
| 14.4 | | UN RTDG: III | yes |
| 14.4 | | IMDG-Code: III | yes |
| 14.4 | | ICAO-TI: III | yes |
| 14.8 | Transport informationNational regulationsAdditional information(UN RTDG): Not subject to transport regulations. UN RTDG | Transport informationNational regulationsAdditional information(UN RTDG) | yes |

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| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 14.8 | | UN number: 3265 | yes |
| 14.8 | | Class: 8 | yes |
| 14.8 | | Packing group: III | yes |
| 14.8 | | Danger label(s): 8 | yes |
| 14.8 | | Danger label(s): change in the listing (table) | yes |
| 14.8 | | Special provisions (SP): 223, 274 UN RTDG | yes |
| 14.8 | | Excepted quantities (EQ): E1 UN RTDG | yes |
| 14.8 | | Limited quantities (LQ): 5 L UN RTDG | yes |
| 14.8 | | Emergency Action Code: 2X | yes |
| 14.8 | International Maritime Dangerous Goods Code (IMDG) - Additional information: Not subject to IMDG. | International Maritime Dangerous Goods Code (IMDG) - Additional information | yes |
| 14.8 | | Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. | yes |
| 14.8 | | Particulars in the shipper's declaration: UN3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., (contains: Formaldehyde ... %, Acetic acid ... %), 8, III | yes |
| 14.8 | | Marine pollutant: - | yes |
| 14.8 | | Danger label(s): 8 | yes |
| 14.8 | | Danger label(s): change in the listing (table) | yes |
| 14.8 | | Special provisions (SP): 223, 274 | yes |
| 14.8 | | Excepted quantities (EQ): E1 | yes |
| 14.8 | | Limited quantities (LQ): 5 L | yes |
| 14.8 | | EmS: F-A, S-B | yes |
| 14.8 | | Stowage category: A | yes |
| 14.8 | | Segregation group: 1 - Acids | yes |

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| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 14.8 | International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information: Not subject to ICAO-IATA. | International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information | yes |
| 14.8 | | Proper shipping name: Corrosive liquid, acidic, organic, n.o.s. | yes |
| 14.8 | | Particulars in the shipper's declaration: UN3265, Corrosive liquid, acidic, organic, n.o.s., (contains: Formaldehyde ... %, Acetic acid ... %), 8, III | yes |
| 14.8 | | Danger label(s): 8 | yes |
| 14.8 | | Danger label(s): change in the listing (table) | yes |
| 14.8 | | Special provisions (SP): A3 | yes |
| 14.8 | | Excepted quantities (EQ): E1 | yes |
| 14.8 | | Limited quantities (LQ): 1 L | yes |
| 15.1 | | National inventories: change in the listing (table) | yes |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acute Tox. | Acute toxicity |
| ATE | Acute Toxicity Estimate |
| BCF | Bioconcentration factor |
| BOD | Biochemical Oxygen Demand |
| Carc. | Carcinogenicity |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| Ceiling-C | Ceiling value |
| COD | Chemical oxygen demand |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| ErC50 | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |
| Expl. | Explosive material |

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| Abbr. | Descriptions of used abbreviations |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye Dam. | Seriously damaging to the eye |
| Eye Irrit. | Irritant to the eye |
| Flam. Liq. | Flammable liquid |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| ICAO-TI | Technical instructions for the safe transport of dangerous goods by air |
| IMDG | International Maritime Dangerous Goods Code |
| IMDG-Code | International Maritime Dangerous Goods Code |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| log KOW | n-Octanol/water |
| Muta. | Germ cell mutagenicity |
| NLP | No-Longer Polymer |
| NTP-RoC | National Toxicology Program: Report on Carcinogens |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| ppm | Parts per million |
| Skin Corr. | Corrosive to skin |
| Skin Irrit. | Irritant to skin |
| Skin Sens. | Skin sensitisation |
| STEL | Short-term exposure limit |
| STOT SE | Specific target organ toxicity - single exposure |
| TWA | Time-weighted average |
| UN RTDG | UN Recommendations on the Transport of Dangerous Good |
| Unst. Expl. | Unstable explosive material |
| vPvB | Very Persistent and very Bioaccumulative |
| WES | Safe Work Australia: Workplace exposure standards for airborne contaminants |

Key literature references and sources for data

Safe Work Australia's Code of Practice for Labelling of Workplace Hazardous Chemicals (under WHS Regulations).

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

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Classification procedure

Physical and chemical properties. The classification is based on tested mixture.

Health hazards. Environmental hazards. The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|------|------------------------------------------|
| H201 | Explosive; mass explosion hazard. |
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H227 | Combustible liquid. |
| H301 | Toxic if swallowed. |
| H302 | Harmful if swallowed. |
| H311 | Toxic in contact with skin. |
| H312 | Harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H331 | Toxic if inhaled. |
| H335 | May cause respiratory irritation. |
| H341 | Suspected of causing genetic defects. |
| H350 | May cause cancer. |
| H370 | Causes damage to organs (eye). |
| H371 | May cause damage to organs (eye). |

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.