

SAFETY DATA SHEET

Safety data sheet according to (EC) No. 1907/2006

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

1.1. Product identifier:

BiopSafe® Formaldehyde solution 4%

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

For laboratory, research and analytical purposes. Restricted to professional users.

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

Biopsafe ApS

Carolinevej 2, 1. tv Phone: +45 31 32 94 10

DK-2900 Hellerup

Responsible person for the safety data sheet (e-mail): lone@biopsafe.com

1.4. Emergency telephone number:

NHS (England or Wales): Dial 111 or 0845 4647 NHS 24 (Scotland): Dial 111

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture:

Carcinogenic, sensitizing fluid with long-term effects. Suspected of causing genetic defects.

CLP (1272/2008): Acute Tox. 4;H302+H332 Skin Sens. 1;H317 Muta. 2;H341 Carc. 1B;H350

2.2. Label elements:



DANGER

Contain: Formaldehyde; methanol
H302+H332: Harmful if swallowed or if inhaled.
H317: May cause an allergic skin reaction.
H341: Suspected of causing genetic defects.
H350: May cause cancer.
P201: Obtain special instructions before use.
P280: Wear protective gloves/eye protection/face protection.
P260: Do not mist/vapours.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P304+P340+P312: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P308+P313: IF exposed or concerned: Get medical advice/attention.
Restricted to professional users.

2.3. Other hazards:

PBT/vPvB: No ingredients are PBT/vPvB, according to the criteria in REACH Annex XIII.

Endocrine disrupting properties: The substances are not identified as having endocrine disrupting properties in accordance with the criteria set out in Regulation 2017/2100 or Regulation 2018/605.

SECTION 3: Composition/information on ingredients

3.2. Mixtures:

% w/w	Substance name	CAS-no.	EC-no.	Index-no.	REACH reg.-no.	Classification	Note
~ 4	Formaldehyde	50-00-0	200-001-8	605-001-00-5	-	Acute Tox. 3;H301+H311+H331 1 Skin Corr. 1B;H314 Skin Sens. 1;H317 Muta. 2;H341 Carc. 1B;H350	
<2.5	Methanol	67-56-1	200-659-6	603-001-00-X	-	Flam. Liq. 2;H225 Acute Tox. 3;H301+H311+H331 STOT SE 1;H370	2

- 1) SCL (Specific Concentration limits) for classification (harmonized): Eye Irrit. 2;H319: $5\% \leq C < 25\%$;
STOT SE 3;H335: $C \geq 5\%$; Skin Corr. 1B;H314: $C \geq 25\%$; Skin Irrit. 2;H315: $5\% \leq C < 25\%$; Skin Sens. 1;H317: $C \geq 0.2\%$.
ATE (oral) = 100 mg/kg; ATE (dermal) = 270 mg/kg; ATE (inhalation, vapour) = 0,57 mg/l
- 2) SCL (Specific Concentration limits) for classification (harmonized): STOT SE 1;H370: $C \geq 10\%$;
STOT SE 2;H371: $3\% \leq C < 10\%$. ATE (oral) = 100 mg/kg; ATE (dermal) = 300 mg/kg; ATE (inhalation, vapour) = 3 mg/l

Wording of hazard statements - see section 16.

SECTION 4: First-aid measures

4.1. Description of first aid measures:

- Inhalation:** Move the affected person to fresh air. **Mild cases:** Keep at rest. If needed: get medical attention.
Severe cases: Place the person in recovery position and keep warm. If respiration has stopped, administer artificial respiration. Seek medical advice immediately.
- Skin contact:** Remove contaminated clothing and wash skin with water and mild soap. In case of rash, wound, or other skin irritation: Seek medical advice.
- Eye contact:** Immediately flush with water or physiological salt water for at least 15 minutes, holding eye lids open, remember to remove contact lenses, if any. If irritation persists: Seek medical attention; continue to flush on the way.
- Ingestion:** Rinse mouth and drink plenty of water. **Do not induce vomiting.** If vomiting occurs keep head down to avoid vomit in the lungs. Call a physician or ambulance immediately.
- Burns:** Flush with water until pain ceases. Remove cloth that isn't burnt to the skin. If needed seek medical attention, continue to flush on the way.

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

Irritation of the lungs, skin and eyes. Inhalation may cause headaches, nausea, dizziness, drowsiness, visual disturbances, vomiting and in greater amounts, possibly unconsciousness and blindness. Organic solvents can cause damage to the liver, kidneys and central nervous system (including brain damage). May cause cancer and are suspected of causing genetic defects. Sensitization.

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

In case of unconsciousness: Immediately seek medical advice. Show this safety data sheet to a physician or emergency ward.

SECTION 5: Firefighting measures

5.1. Extinguishing media:

Use water spray (never water jet), dry chemical, foam or carbon dioxide.

5.2. Special hazards arising from the substance or mixture:

Do not inhale smoke fumes. In case of fire, the product may form hazardous decomposition products: Oxides of carbon.

5.3. Advice for firefighters:

Wear self-contained breathing apparatus when generation of smoke is vigorous.

BiopSafe® Formaldehyde solution 4%

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment – see section 8. Remove sources of ignition. Avoid further spreading. Ventilate area of leak or spill.

6.2. Environmental precautions:

Do not empty into drains – see section 12. Inform appropriate authorities in accordance with local regulations.

6.3. Methods and material for containment and cleaning up:

Sweep up and place in a suitable container. Flush area of spill with plenty of water. Further handling of spillage - see section 13.

6.4. Reference to other sections:

See references above.

SECTION 7: Handling and storage

7.1. Precautions for safe handling:

AVOID ALL CONTACT! Take off immediately all contaminated clothing. Wash contaminated skin with water and mild soap. Warn laundry staff about the chemical's hazardous properties. Required access to Emergency shower, water and eye wash fountain. Avoid breathing vapours. Provide adequate ventilation. Good personal hygiene is necessary. After use, wash with plenty of soap and water. Do not eat, drink, smoke or store food, beverages and tobacco when there is a risk of contamination by carcinogens. May cause fainting fit. Great caution is advised when driving vehicles or operating machines.

7.2. Conditions for safe storage, including any incompatibilities:

Store in a tightly closed original container and a well-ventilated area. Storage must be in compliance with all regulatory requirements pertaining to flammable liquids. Keep locked up and out of reach of unauthorized personnel and separated from food, feed, drugs etc.

7.3. Specific end use(s):

See section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters:

Occupational exposure limits (EH40/ed.2020): 8-hour TWA	15-min STEL	Comments
Formaldehyde	2 ppm = 2.5 mg/m ³	Carc
Methanol	250 ppm = 333 mg/m ³	Sk

Sk = Can be absorbed through the skin

DNEL/PNEC: No CSR.

8.2. Exposure controls:

Appropriate engineering controls: Provide adequate ventilation.

Personal protective equipment:

Inhalation: In case of in-adequate ventilated working areas: Use an approved mask (EN140) with a gasfilter type Ax+ formaldehyde (brown/olive green – organic vapours and formaldehyde. Particle filter P2 must be used as prefilter. The filters have a limited lifetime and must be changed. Read the instructions.

Skin: Wear protective gloves (EN374) of butyl rubber. Data about the breakthrough time are not available. Replacing the glove after use is therefore strongly recommended.

Eyes: Wear tight fitting safety goggles (EN166) when there is risk of contact.

Environmental exposure controls: None particular.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties:

Physical state:	Liquid
Colour:	Colourless
Odour:	Characteristic
Melting point/freezing point (°C):	0
Boiling point or initial boiling point and boiling range (°C):	100
Flammability (solid, gas):	Not relevant
Lower and upper explosion limit (vol-%):	Not determined
Flash point (°C):	60-<93
Auto-ignition temperature (°C):	Not determined
Decomposition temperature (°C):	Not determined
pH:	Not determined

SECTION 9: Physical and chemical properties (continued)

Kinematic viscosity (mm ² /s, 40°C):	Not determined
Solubility:	Partly miscible
Partition coefficient n-octanol/water (log value):	Not determined
Vapour pressure (hPa, 20°C):	23
Density and/or relative density:	1.02
Relative vapour density:	Not determined
Particle characteristics:	Not determined
9.2. Other information:	VOC: 4.81%

SECTION 10: Stability and reactivity

10.1. Reactivity:

No data available.

10.2. Chemical stability:

Stable under normal conditions (see section 7).

10.3. Possibility of hazardous reactions:

None known.

10.4. Conditions to avoid:

Avoid excessive heating. Keep away from sources of ignition, sparks and embers.

10.5. Incompatible materials:

Reacts violently with oxidising materials, magnesium carbonate, metals and metal alloys as well as acids (contact with hydrochloric acid may cause formation of the carcinogen bis(chloro methyl)-ether. Contact with alkali metals can initiate polymerization to paraformaldehyde.

10.6. Hazardous decomposition products:

When heated to high temperatures (decomposition) toxic fumes are emitted: Oxides of carbon.

SECTION 11: Toxicological information

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

Acute toxicity: Acute Tox. 4;H302+H332 Harmful if swallowed or if inhaled.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

Respiratory or skin sensitization: Skin Sens. 1;H317 May cause an allergic skin reaction.

Germ cell mutagenicity: Muta. 2;H341 Suspected of causing genetic defects.

Carcinogenicity: Carc. 1B;H350 May cause cancer.

Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure: Based on available data, the classification criteria are not met.

STOT-repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

SECTION 11: Toxicological information (continued)

Hazard class	Data	Test	Data source
Acute toxicity:			
Inhalation	LC ₅₀ (rat) = 0.578 mg/l/4H (Formaldehyde)	No info	IUCLID
	LC ₅₀ (rat) = 83.9 mg/l/4H (Methanol)	No info	IUCLID
Dermal	LD ₅₀ (rabbit) = 270 mg/kg (Formaldehyde)	No info	RTECS
	LD ₅₀ (rat) = 12800 mg/kg (Methanol)	No info	IUCLID
Oral	LD ₅₀ (rat) = 100 mg/kg (Formaldehyde)	No info	RTECS
	LD ₅₀ (rat) = 5300 mg/kg (Methanol)	No info	IUCLID
Corrosion/irritation:	Severe skin- and eye irritation, rabbit, (Formaldehyde)	No info	IUCLID
	No skin irritation, rabbit (Methanol)	OECD 404	IUCLID
	Moderate eye irritation, rabbit (Methanol)	Draize	IUCLID
Sensitization:	Skin sensitization, guinea pig (Formaldehyde)	Buehler	IUCLID
CMR:	TD _{Lo} (oral, rat) = 109000 mg/kg/2Y (continuous): "Carcinogenic" (Formaldehyde)	No info	RTECS
	Genotoxicity, in vivo test, rodent (Formaldehyde)	Micronucleus assay etc	IUCLID
	TD _{Lo} (oral, female rat) = 186 mg/kg 1-21D after conception: "Effects on new-born" (Formaldehyde)	No info	IUCLID
	TC _{Lo} (inhalation, male rat) = 35 µg/m ³ /8H 60D before mating "Paternal effects" (Formaldehyde)	No info	IUCLID

Information on likely routes of exposure: Inhalation, skin and ingestion.

Symptoms:

- Inhalation:** Vapours may cause irritation to the airways. High vapour concentrations may cause water in the lungs (pulmonary oedema). Symptoms (shortness of breath) may occur several hours after exposure.
- Skin:** May cause irritation, redness and drying of skin. Methanol and formaldehyde may be absorbed through the skin and by extensive skin contact cause symptoms like those mentioned under "Inhalation".
- Eyes:** Splashes and vapours may cause irritation with redness, pain and blurred vision.
- Ingestion:** Irritation of mouth, throat and stomach with symptoms like discomfort, nausea, vomiting, pain and diarrhoea. Methanol may be absorbed through the gastrointestinal tract and cause severe poisoning.
- Chronic effects:** Formaldehyde is by the Danish labour inspection considered to be a highly potent carcinogen. Excess incidence of cancer of the nose and upper airways, leukaemia and brain cancer mortality has been detected in people who have worked with formaldehyde. Formaldehyde may cause allergic skin reactions with symptoms like redness, swelling and itching in susceptible people. Prolonged or frequent exposure to vapours of volatile organic compounds may result in damage on liver, kidneys, blood or central nervous system (including brain damage). Lab tests have shown that formaldehyde may cause damage to the genes.

11.2. Information on other hazards: None known.

SECTION 12: Ecological information**12.1. Toxicity:**

Akvatisk	Data	Test (Media)	Reference
Fish	LC ₅₀ (Pimephales promelas, 96h) = >10000 mg/l (Methanol)	No info	No info
	LC ₅₀ (Morone saxatilis, 96h) = 6.7 mg/l (Formaldehyde)	Static (FW)	IUCLID
Crustacean	EC ₅₀ (Ceriodaphnia dubia, 48h) = 11 mg/l (Methanol)	No info (FW)	ICULID
	LC ₅₀ (Daphnia magna, 48h) = 2 mg/l (Formaldehyde)	No info (FW)	IUCLID
Algae	IC ₅₀ (Pseudokirchneriella sub. 96h) = 15300 mg/l (Methanol)	No info (FW)	EPA Ecotox
	EC ₅₀ (Pseudokirchneriella sub. 48h) = 4.2 mg/l (Formaldehyde)	No info (FW)	EPA ecotox

12.2. Persistence and degradability:

Methanol and formaldehyde are readily biodegradable (OECD 301).

12.3. Bioaccumulative potential:

Methanol and formaldehyde: Log K_{ow} <1 (no significant bioaccumulative effect).

12.4. Mobility in soil:

Methanol and formaldehyde: K_{oc} < 10 (high to very high mobility in soil environments is expected).

12.5. Results of PBT and vPvB assessment:

No ingredients are PBT/vPvB, according to the criteria in REACH Annex XIII.

12.6. Endocrine disrupting properties:

None known.

12.7. Other adverse effects:

Formaldehyde is damaging to protozoans and is a disinfectant.

SECTION 13: Disposal considerations

13.1. Waste treatment methods:

The chemical is to be considered as hazardous waste. To municipal collection point or waste disposal facility.

EWC-code:

16 05 06 Residues

15 02 02 Absorbent contaminated with product

SECTION 14: Transport information

Not hazardous for transportation (ADR/RID/IMDG/IATA)

14.1. UN number or ID number: None.

14.2. UN proper shipping name: None.

14.3. Transport hazard class(es): None.

14.4. Packing group: None.

14.5. Environmental hazards: No.

14.6. Special precautions for user: None.

14.7. Maritime transport in bulk according to IMO instruments: Not relevant.

SECTION 15: Regulatory information

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

Must not be used by persons under 18 years of age.

The employer shall assess the working conditions and, if there is any risk to the safety or health and any effects on the pregnancy or breastfeeding of workers, take the necessary measures to adjust the working conditions (Directive 92/85/EEC).

15.2. Chemical safety assessment:

No CSR.

SECTION 16: Other information

Hazard statements mentioned in section 3:

H225:	Highly flammable liquid and vapour.
H301+H311+H331:	Toxic if swallowed, in contact with skin or if inhaled.
H314:	Causes severe skin burns and eye damage.
H317:	May cause an allergic skin reaction.
H341:	Suspected of causing genetic defects.
H350:	May cause cancer.
H370:	Causes damage to organs.

Abbreviations:

CMR = Carcinogenicity, mutagenicity and reproductive toxicity.

CSR = Chemical Safety Report

DNEL = Derived No-Effect Level

EC₅₀ = Effect Concentration 50%

FW = Fresh Water

LC₅₀ = Lethal Concentration 50%

LD₅₀ = Lethal Dose 50%

PBT = Persistent, Bioaccumulative, Toxic

PNEC = Predicted No-Effect Concentration

vPvB = very Persistent, very Bioaccumulative

Literature:

ECHA = REACH Registration Dossier from ECHA's website.

EPA Ecotox = US Environmental Protection Agency

IUCLID = International Uniform Chemical Database Information

RTECS = Register of Toxic Effects of Chemical Substances

Training advice:

No special training is required. However, the user should be well instructed in the execution of his/her task, be familiar with this Safety Data Sheet and have normal training in the use of personal protective equipment.

Changes since the previous edition:

1, 2, 3, 9, 11, 12 & 14

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