

**VERVIT S.r.l.****RESINA 420**Revision nr: 2
Issuing date: 10.04.19
Revision date: 08.05.2025

Safety Data Sheet

according to COMMISSION REGULATION (EU) 2020/878

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier: RESINA 420**Other means of identification:** Not relevant**1.2 Relevant identified uses of the substance or mixture and uses advised against:**

Adhesive based on modified polyvinyl acetate homopolymer in aqueous dispersion

1.3 Details of the supplier of the safety data sheet:**VERVIT s.r.l.**

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- Centro antiveleni dell'Azienda ospedaliera universitaria integrata (AOUI) di Verona sede di Borgo Trento, piazzale Aristide Stefani 1, Verona - CAP: 37126 - Tel. 800011858

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

The product is not classified as hazardous pursuant to the provisions of Regulation (EC) 1272/2008 (CLP) (and subsequent amendments and additions). However, since the product contains hazardous substances in concentrations sufficient to be declared in section 3, a safety data sheet compliant with the provisions of Regulation (EU) 2020/878, as amended, is required.

Any additional information regarding health and/or environmental risks is provided in sections 11 and 12 of this sheet.

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Hazard labeling according to Regulation (EC) 1272/2008 (CLP) and subsequent amendments and additions.

Hazard statements: - - -**Precautionary statements: - - -****P261 Avoid breathing dust.****Additional information: - - -****2.3 Other hazards:**

Product in powder form: possibility of inhalation and contact with mucous membranes and skin; furthermore, it contains traces of formaldehyde (see Section 3), and therefore this substance should be taken into account.

The substances contained do not meet the criteria for PBT (non-PBT) and vPvB (non-vPvB) substances in accordance with Annex XIII of Regulation (EC) No. 1907/2006.

According to available information, none of the components in the mixture have endocrine-disrupting properties.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substance:**

Irrelevant information

3.2 Mixture:

Identification	Chemical Name/Classification		%
CAS: 9011-05-6 EC: --- Index: ----	Urea, formaldehyde polymer (hereinafter abbreviated as "UF Polymer")		70 ÷ 90
	Regulation 1272/2008	not dangerous	
CAS: ---- EC: --- Index: ----	Excipients, fillers, catalysts		10 ÷ 30
	Regulation 1272/2008	not dangerous	
CAS: 50-00-0 EC: --- Index: 605-001-00-5 n. Reg. 01-2119488953-20-XXXX	Formaldehyde ...%		< 0,02 (1)
	Regulation 1272/2008	Carcinogen, category 1B H350; Mutagen, category 2 H341; Acute Tox. 3 (oral) H301 Acute Tox. 3 (skin contact) H311 Acute Tox. 2 (inhalation)* H330 Skin Corrosion/Irritation*, category 1B H314 Skin Sensitivity, category 1A* H317	
	Specific concentration limits:	Skin Corr. 1B – H314: C > 25 % Skin Irrit. 2 – H315: 5 % < C < 25%, Eye Irrit. 2 – H319: 5 % < C < 25 %, STOT SE 3 – H335: C > 5 %, Skin Sens. 1A - H317: C > 0.2%	

* Self-classifications exceeding the harmonized classification resulting from the substance registration dossier (2017).

(1) Value measured according to EN 1243 on aqueous dispersion 50:50.

See Section 16 for the full text of the H-phrases.

SECTION 4. FIRST AID MEASURES**4.1 Description of first aid measures:**

General notes:

Remove contaminated clothing. If there is a risk of unconsciousness, place the victim in the recovery position

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and remove them from the accident site.

If inhaled:

Remove the victim from the contaminated area and keep them in a well-ventilated area. Seek medical attention if necessary.

In case of skin contact:

Remove contaminated clothing. Wash the contaminated areas thoroughly with running water.

In case of eye contact:

Remove any contact lenses. Immediately flush the affected eyes with running water for at least 15 minutes, keeping the eyelids open; consult an ophthalmologist if necessary.

If swallowed:

Rinse mouth immediately several times with water. If swallowed and the victim is conscious, drink plenty of water; seek medical attention if necessary.

First Responder Self-Protection:

Rescuers must ensure their own safety.

Note to Physician

Treatment: There is no specific treatment.

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

Eye contact: Possible redness of the conjunctiva.

Skin contact: Possible redness of the skin.

Ingestion: No known harmful effects.

Inhalation: No known harmful effects.

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

See Section 4.1.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media:

SUITABLE EXTINGUISHING MEDIA

Fires can be extinguished with water spray, dry powder extinguishers, carbon dioxide, or foam; if circumstances permit, avoid using water to avoid dispersing the product.

UNSUITABLE EXTINGUISHING MEDIA

None in particular.

5.2 Special hazards arising from the substance or mixture:

The product is not flammable.

When involved in a fire and heated, the product decomposes and may emit toxic fumes of nitrogen oxides, carbon monoxide and carbon dioxide, hydrogen cyanide, and formaldehyde.

Avoid breathing fumes.

5.3 Advice for firefighters:

Remove containers near the fire.

Involved personnel must use full-face masks or self-contained breathing apparatus and wear appropriate clothing.

If contaminated with the product, water used to extinguish the fire must be sent to suitable purification plants.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel

In the event of a spill, all non-emergency personnel must be removed from the affected area. Alert emergency personnel and, if applicable, the fire department. If immediate intervention is required, follow the directions and instructions provided by the designated personnel.

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6.1.2 For non-emergency personnel

Ventilate the spill area, extinguish any open flames, and isolate any ignition sources.

Avoid raising dust during intervention.

Prevent contact with skin and eyes by wearing suitable clothing.

Protect the respiratory tract (see Section 8.2.2).

6.2 Environmental precautions:

Prevent the product from dispersing into the environment and flowing into drains, surface water, and groundwater.

6.3 Methods and material for containment and cleaning up:**6.3.1 For containment:**

In case of spills, vacuum and collect spilled dust, avoiding stirring it.

6.3.2 For cleanup:

Clean thoroughly with sawdust or sand.

6.3.3 Other information:

Water may be used only after removing all product and cleaning the affected area.

6.4 Reference to other sections:

Any information regarding personal protection and disposal is given in section 13.

SECTION 7. HANDLING AND STORAGE**7.1 Precautions for Safe Handling:**

Ensure good ventilation of storage and handling areas.

Loading, unloading, and handling operations must be performed by properly trained personnel. Use caution when cutting and emptying the bag, avoiding raising dust; this operation should be carried out in a confined space with effective extraction.

Verify that equipment is connected to an effective grounding line.

To minimize exposure, it may be helpful to wear respiratory protection, gloves, goggles, and barrier creams.

Avoid contact with skin and mucous membranes and use appropriate personal protective equipment (see Section 8.2.2). In case of spills, ventilate the area, vacuum, and collect spilled dust. Do not use water (see Section 6).

Do not eat, drink, or smoke during handling.

Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities:

They don't present any particular storage problems: in their

original packaging and in a cool, dry place, they can be stored without altering their characteristics for approximately six months. For best preservation, maintain a temperature between 20 and 25°C.

7.3 Specific end uses:

The mixtures in question are intended for the wood industry (see Section 1.2). No other specific information is available.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**8.1 Control parameters:**

Regulatory references:

	Substance	Limit	Value	Reference
National	Formaldehyde	8 h	0,6 ppm	Legislative Decree 11/02/2021, implementation of Directives (EU) 2019/130 and (EU) 2019/983
		15 min	0,3 ppm	
Community		8 h	0,6 ppm	Directive (EU) 2019/983 of the European Parliament and of the Council of 5 June 2019
		15 min	0,3 ppm	

DNEL (Derived No Effect Level) for Formaldehyde:**Workers**

Inhalation: Long-term systemic effects 9 mg/m³
Acute systemic effects == no risk identified
Long-term local effects 0.375 mg/m³ (= 0.3 ppm)
Acute local effects 0.75 mg/m³ (= 0.6 ppm)

Skin: Long-term systemic effects 240 mg/kg bw/day
Acute systemic effects == no risk identified.
Long-term local effects 37 µg/cm²
Acute local effects == no risk identified.

Eyes: Local effects == medium risk; threshold not derived.

Consumers

Inhalation: Long-term systemic effects 3.2 mg/m³
Acute systemic effects == no risk identified
Long-term local effects 0.1 mg/m³
Acute local effects == no risk identified.

Skin: Long-term systemic effects 102 mg/kg bw/day
Acute systemic effects == no risk identified.
Long-term local effects 12 µg/cm²
Acute local effects == no risk identified.

Oral: Long-term systemic effects 4.1 mg/kg bw/day
Acute systemic effects == no risk identified.

Eye: Local effects == medium risk; threshold not derived.

PNECs (Predicted No Effect Concentrations) for Formaldehyde:

Freshwater 0.44 mg/L
Marine water 0.44 mg/L
Water (occasional release) 4.44 mg/L
Microorganisms in wastewater treatment systems 0.19 mg/L
Sediment (freshwater) 2.3 mg/kg (sediment dw)
Sediment (marine water) 2.3 mg/kg (sediment dw)
Soil (agricultural) 0.20 mg/kg (soil dw)
Air = no hazard identified

Information on monitoring procedures

FORMALDEHYDE concentrations in workplaces must be measured at both the environmental and personal levels.

Environmental measurement

- Sampling with a passive dosimeter and analysis according to EPA method TO11-A: "Determination of formaldehyde in ambient air using an absorbent cartridge followed by HPLC analysis."
- ISO 16000-4:2011; Indoor air Determination of formaldehyde -- Diffusive sampling method

Personal measurement**Long-term sampling**

- Sampling with a passive dosimeter and analysis according to EPA method TO11-A
- ISO 16000-4:2011; Indoor air Determination of formaldehyde -- Diffusive sampling method

Short-term sampling

- Sampling with an active collection device and analysis according to EPA method TO11-A.
- ISO 16000-3:2011; Indoor air - Part 3: Determination of formaldehyde and other carbonyl

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compounds - Active sampling method.

Other reference standards

- EN ISO 16000-2:2006; Indoor air - Part 2: Sampling strategy for formaldehyde.
- UNI EN 689 - Guidance for the assessment of inhalation exposure to chemical compounds for the purpose of comparison with limit values and measurement strategy.
- <https://www.formacare.eu/best-practice/>

8.2 Exposure controls:**8.2.1 Appropriate engineering controls**

Storage and handling areas must be well ventilated; provide adequate localized extraction at potential formaldehyde emission points.

8.2.2 Individual protection measures, such as personal protective equipment**HAND/SKIN PROTECTION**

Chemical-resistant protective gloves compliant with EN 374.

Materials suitable for direct and prolonged contact (recommended: protection index 6, corresponding to > 480 minutes of permeation time according to EN 374):

Butyl rubber, thickness 0.7 mm

Nitrile rubber (NBR), thickness 0.4 mm

Follow the glove manufacturer's instructions regarding dwell time.

(ii) Other

Wear protective clothing that provides complete skin protection and safety footwear (e.g., compliant with EN 14605).

EYE/FACE PROTECTION

Use splash goggles or a face shield compliant with EN 166. Avoid contact lenses.

RESPIRATORY PROTECTION

The use of respiratory protection is necessary if the technical measures adopted are not sufficient to limit worker exposure to the threshold values considered. The protection offered by masks is, however, limited.

If the concentration of formaldehyde in the environment exceeds the TLV, use half-face or full-face masks with filters for inorganic vapors (type B = gray) and dust (type P2 = white) compliant with UNI EN 14387. If other types of gases or vapors and/or gases or vapors with particles (aerosols, fumes, mists, etc.) are present, combined filters are required.

If the formaldehyde concentration in the air exceeds the filter limit or the oxygen concentration is less than 17%, use open-circuit compressed air self-contained breathing apparatus (ref. UNI EN 137 standard) or a fresh air-supplied respirator (ref. UNI EN 138 standard). For the correct choice of respiratory protective device, refer to UNI EN 529 standard.

Thermal Hazards

There are no known thermal hazards related to the mixture or its contents.

General protection and hygiene measures: Do not smoke or consume food or beverages in handling and processing areas. Remove contaminated clothing immediately.

Keep emergency showers and eyewash bottles available in the workplace.

Wash hands before consuming food or beverages.

ENVIRONMENTAL EXPOSURE CONTROLS.

Formaldehyde is not classified as Hazardous to the Environment; however, handling must be done in confined areas protected by containment systems to prevent spills and localized extraction systems connected to suitable abatement systems.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties:**

For complete information, see the product data sheet.

Physical state:

Powder

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Color:	White or pigmented
Odor:	Slightly pungent; odor threshold (formaldehyde) < 0.1 ppm (Berglund B., Höglund A., Esfandabad H.S. 2012)
Melting point/freezing point:	N.A. (decomposes before melting)
Boiling point or initial boiling point and boiling range:	N.A. (solid mixtures)
Flammability:	Non-flammable
Lower and upper explosive limits:	N.A. (solid mixtures)
Flash point:	N.A. (solid mixtures)
Autoignition temperature:	N.A. (solid mixtures)
Decomposition temperature:	Decomposes at temperatures above 250°C
pH (1:1 dispersion in water at 20°C):	5.0 ÷ 6.5
Kinematic viscosity:	N.A. (solid mixtures)
Solubility:	Dispersible in water, partially soluble in DMF and dioxane
Partition coefficient:	n-octanol/water (Log Kow): N.A. (mixtures)
Vapor pressure:	N.A. (solid mixtures)
Density and/or relative density:	0.5 ÷ 0.6 kg/dm ³ at 20°C in bulk
Relative vapor density:	N.A. (solid mixtures)
Particle characteristics:	> 95% w/w is < 300 microns

9.2 Other information:

9.2.1 Information on physical hazard classes

Explosives:	N.A.
Flammable gases:	N.A.
Aerosols:	N.A.
Oxidizing gases:	N.A.
Gases under pressure:	N.A.
Flammable liquids:	N.A.
Flammable solids:	Non-flammable
Self-reactive substances and mixtures:	Non-self-reactive mixtures
Pyrophoric liquids:	N.A.
Pyrophoric solids:	Do not have pyrophoric properties
Self-heating substances and mixtures:	Are not self-heating mixtures
Substances and mixtures that emit flammable gases in contact with water:	Do not emit flammable gases in contact with water
Oxidizing liquids:	N.A.
Oxidizing solids: Non-oxidizing	
Organic peroxides:	Do not contain organic peroxides
Substances or mixtures corrosive to metals:	Avoid contact with iron and carbon steel (see Section 10.5)
Desensitizing explosives:	N.A.

9.2.2 Other safety features

Mechanical sensitivity:	N.A.
Self-accelerating polymerization temperature:	They polymerize completely when mixed with water, and the reaction is enhanced by heat (see Section 10.1).
Formation of explosive dust/air mixtures:	Lower explosion limit: approximately 90 mg/L ù (experimental data)
Acid/alkaline reserve:	They do not have extreme pH (< 2 or > 11.5).
Evaporation rate:	N.A. (solid mixtures)
Miscibility:	They are in powder form; when dispersed in water, they can be mixed with various aqueous solutions, but it is recommended to first test their compatibility on a small scale.
Conductivity:	N.A.
Corrosivity:	See above
Gas group:	N.A.
Oxidation/reduction potential:	N.A.

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Photocatalytic Properties: N/A**Additional Information**Autoignition Temperature: Approximately 450°C (experimental data, dust/air cloud).
Ignition Temperature of Dust Layer: > 400°C (experimental data).**SECTION 10. STABILITY AND REACTIVITY'****10.1 Reactivity:**

They are produced in powder form and do not react while in a dry solid state; in the presence of water, the mixture begins to harden until it forms a single solid block, with the possible release of small amounts of formaldehyde. The reaction is promoted by heat.

10.2 Chemical stability:

They are stable if handled and stored according to good practices (see sections 7.1; 7.2). They decompose at temperatures > 250 °C.

10.3 Possibility of dangerous reactions:

No dangerous reactions are known.

10.4 Conditions to avoid:

are formulations containing adhesives and catalysts; avoid exposure to water (humidity) and heat sources (see Section 7.2).

10.5 Materials to avoid:

Avoid contact with carbon steel and aluminum, alkalis, and oxidizers. Handle in stainless steel or polyethylene/polypropylene containers.

10.6 Hazardous decomposition products:

They do not decompose when used for their intended purposes.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological information for mixtures is not available.

The toxicological information for the main components of the mixtures is provided below.

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:**Formaldehyde:**Acute oral toxicity

Species:	Male rat (Wistar)
Duration of exposure:	N/A
Results: LD50:	460 mg/kg Formaldehyde in 2-4% solution
Method:	Equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
Species:	Human
Duration of exposure:	N/A
Results:	Fatal dose: 60-90 ml Formaldehyde in 40% solution
Method:	N/A

Acute inhalation toxicity

Species:	Male/female rat (Wistar)
Exposure duration:	Single 4-hour body exposure
Results:	LC50 463 ppm (Formaldehyde gas)
Method:	OECD Guideline Method 403 (BASF 2015)

Acute dermal toxicity: No valid data available; formaldehyde, however, exhibits corrosive



properties at concentrations above 25%.

SKIN CORROSION/IRRITATION.

Aqueous formaldehyde solutions at concentrations less than 1% do not show skin corrosion or irritation.

SERIOUS EYE DAMAGE/IRRITATION.

Ocular corrosive effects are not expected at formaldehyde concentrations less than 1%.

RESPIRATORY OR SKIN SENSITIZATION.

There is sufficient evidence for the sensitizing properties of formaldehyde in the guinea pig maximization test (GPMT), the Buehler test in guinea pigs, and the mouse local lymph node assay (LLNA). Formaldehyde is also a skin allergen in humans. Although rare, anaphylaxis has been documented in clinical cases.

Animal studies do not indicate that formaldehyde can induce respiratory sensitization. A very limited number of case reports have been published on formaldehyde-related asthma, but these data do not provide sufficient evidence that formaldehyde should be considered a risk factor for respiratory tract sensitization.

GERM CELL MUTAGENICITY.

In vitro genotoxicity

The chromosomal mutagenic activity of formaldehyde (and, to a much lesser extent, gene mutations) is well documented in in vitro studies, and numerous studies on other endpoints have suggested further evidence of formaldehyde's genotoxicity in vitro.

In vivo genotoxicity

Available data in experimental animals have demonstrated the genotoxic activity of formaldehyde at the site of first contact after oral exposure. Studies on local mutagenic effects in humans have suggested an increase in micronucleus frequencies in nasal and buccal cells, but a final conclusion is not yet possible. The mechanism of clastogenicity may be related to DNA protein cross-links and their repair. DNA-protein cross-linking has been demonstrated at the site of initial contact after inhalation exposure in rats and monkeys.

Systemic genotoxic effects in humans

Using a weight-of-evidence approach, it is concluded that there is insufficient evidence for systemic genotoxic effects in humans.

CARCINOGENICITY.

Formaldehyde has local carcinogenic activity in experimental animals; there is evidence of a threshold effect for tumors involving cytotoxicity and regenerative cell proliferation as the mode of action.

There is no evidence of local or systemic carcinogenic effects after oral exposure in rats. In dermal initiation/promotion studies, formaldehyde did not initiate or promote skin tumorigenesis in mice. There is clear evidence from chronic inhalation studies in rats that formaldehyde causes tumors in the nasal cavity.

REPRODUCTIVE TOXICITY.

In a two-year study of formaldehyde in drinking water administered to rats, comparable to OECD Guideline 453 (Til et al., 1989, Section Repeated Dose Toxicity: Oral), no adverse effects on reproductive organs were recorded even at a high dose of 109 mg/kg body weight/day in females and 82 mg/kg body weight/day in males, doses that induced local effects in the stomach.

Formaldehyde has not demonstrated teratogenic effects in mice. No data exist in humans.

Effects on Fertility

Formaldehyde is not expected to reach the reproductive organs, and there is no evidence of effects on fertility and gonads in experimental animals after long-term oral exposure or inhalation. Toxicokinetic data (see final summary of the toxicokinetics discussion) suggested only local effects at the site of entry.

Developmental Toxicity

There is no evidence of adverse effects of formaldehyde on embryonic and fetal development at dose levels that induce local maternal effects and a secondary decrease in body weight and growth.

SPECIFIC TARGET ORGAN TOXICITY (STOT) - SINGLE EXPOSURE.

See SECTION 8: DNELs.

SPECIFIC TARGET ORGAN TOXICITY (STOT) - REPEATED EXPOSURE.

Repeated dermal exposure:

Repeated dermal toxicity studies are not available in accordance with current guidelines. According to column 2 of section 8.6.1 of Annex VIII of the REACH Regulation, it is not necessary to conduct the study as exposure to formaldehyde via inhalation is considered the primary route of exposure.

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There is evidence that formaldehyde induces toxic effects only at the contact site after oral, dermal, or inhalation exposure.

Toxicity is not evident at remote sites, so general signs of toxicity occur only secondary to these local lesions. Despite some recent studies describing effects after inhalation of formaldehyde far from the site of entry, this assessment is still confirmed after comparing these studies with highly valid pivotal guidance studies.

In chronic drinking water studies in rats, local effects were induced in the forestomach and stomach. The NOAEC is 0.020-0.026% formaldehyde in drinking water. The NOAEL for systemic effects is 82 mg/kg body weight/day in males and 109 mg/kg body weight/day in females.

Value used for CSA (oral - systemic effects):

(NOAEL): (82 mg/kg body weight/day).

Value used for CSA (inhalation - systemic effects): (NOAEC): (1.2 mg/m³).

ASPIRATION HAZARD.

Not hazardous.

UF Polymer:

According to available information, the polymer is considered NON-HAZARDOUS.

11.2 Information on Other Hazards

11.2.1. Endocrine-Disrupting Properties

There are no known adverse health effects caused by endocrine-disrupting properties for the constituent substances.

Neurotoxicity (Formaldehyde)

Effects on the hypothalamus, pituitary gland, and adrenal glands, as well as neuroimmunological effects, were observed in mice at low exposure levels (≥ 0.1 ppm formaldehyde) in inhalation studies; the relevance of these findings to humans is questionable.

Immunotoxicity (Formaldehyde)

Conflicting results are available regarding the effects of formaldehyde enhancement on the immune response to allergens in clinical inhalation studies in volunteers. However, more weight should be given to the study with more rigorous exposures, which indicates that formaldehyde does not increase lung dysfunction in asthmatics.

SECTION 12. ECOLOGICAL INFORMATION

The product contains traces of free formaldehyde; handle according to good working practices, avoiding release to soil and waterways (see Sections 6; 7; 13; 14).

Ecological information for the mixture is not available; the ecological information for the main components of the mixture is provided below.

12.1 Toxicity:

Fish

Formaldehyde

LC50 (96 h) = 6.18 mg/L (Reardon, 1990).

LC50 (6 d) embryos of *Danio rerio* 6.9 mg/L (Meinelt et al., 2005)

NOEC (28 d) *Oryzias latipes* ≥ 48 mg/L (Johnsson et al., 1993).

UF polymer Available data do not justify classification.

Crustaceans

Formaldehyde

EC50 (48 h) = 5.8 mg/L "*Daphnia pulex*" (Tisler & Zagorc-Koncan, 1997)

NOEC (21 d) *Daphnia magna* > 6.4 mg/L (SGS, 2008).

UF polymer Available data do not justify classification.

Algae/aquatic plants

Formaldehyde

EC50 (72h) *Desmodesmus subspicatus* 4.89 mg/L (Eisentraeger et al., 2003). No NOEC is provided in the study.

UF polymer: Available data do not justify classification.

Other organisms

Formaldehyde: No relevant information available.

UF polymer: Available data do not justify classification.

12.2 Persistence and degradability:

Abiotic Degradation

Formaldehyde

Based on the structural properties, hydrolysis is not expected/likely.

No other relevant information is available.

UF Polymer

Based on the structural properties, partial hydrolysis with the formation of formaldehyde and urea can be expected.

No other relevant information is available.

Physical and Photochemical Elimination

Formaldehyde

When released into the atmosphere, formaldehyde can be degraded by direct or indirect phototransformation. The reaction with the hydroxyl radical is considered the most important photooxidation process.

The atmospheric half-life of formaldehyde, based on the hydroxyl radical reaction rate constants, is estimated to be 1.7 days.

UF Polymer Data not available.

Biodegradation

Formaldehyde

The substance is biodegradable (according to OECD criteria).

BOD/ThO = 91% (14d); TOC = 97% MITI-I-Test (OECD 301 C)

ThOD = 90% (28d) Closed-Bottle-Test (OECD 301 D) (Gerike P, Gode P 1990).

UF polymer Data not available.

12.3 Bioaccumulative potential:

n-octanol/water partition coefficient (log Kow)

Formaldehyde The low log Pow value measured (0.35 at 20°C) indicates the low bioaccumulation potential of formaldehyde. This is confirmed by the results of tests conducted on several fish species and on a shrimp species in which no bioaccumulation of formaldehyde was observed.

UF Polymer: Data not available.

Bioconcentration factor (BCF)

Formaldehyde: Not expected to accumulate in aquatic organisms. BCF_{fish}=0.396.

Accumulation in organisms is not expected to occur. BCF=0.396.

UF Polymer: Data not available.

12.4 Mobility in soil:

Known or estimated distribution by environmental compartment

Formaldehyde: Based on the log Koc calculated for formaldehyde (log Koc = 1.202), the substance is not expected to adsorb to a significant extent to suspended solids and sediments. When dissolved in water, the substance does not evaporate significantly into the air (Henry's Law constant < 1 Pa m³ mol⁻¹). Using simple fugacity-based environmental models, the primary medium of environmental distribution will be water (Mackay Level I calculation; BASF SE, 2008).

UF Polymer: Data not available.

Surface Tension

Formaldehyde: The study does not need to be conducted because, based on the structure, surface activity is not expected or cannot be predicted.

UF Polymer: Data not available.

Adsorption/Desorption

Formaldehyde: From data reported in the literature, the log Koc values obtained in various tests suggest that formaldehyde has moderate to high mobility in soil.

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UF polymer. Data not available.

12.5 Results of PBT and vPvB assessment:

Formaldehyde: Considering all available data on biotic and abiotic degradation, bioaccumulation, and toxicity, it can be concluded that the substance does not meet the PBT (non-PBT) and vPvB (non-vPvB) criteria.

UF Polymer: Data not available.

12.6 Endocrine disrupting properties

Formaldehyde: This substance does not have endocrine-disrupting properties in non-target organisms as it does not meet the criteria in Section B of Regulation (EU) 2017/2100.

UF Polymer: This substance does not have endocrine-disrupting properties in non-target organisms as it does not meet the criteria in Section B of Regulation (EU) 2017/2100.

12.7. Other adverse effects

Formaldehyde: No other known adverse environmental effects.

UF Polymer: No other known adverse environmental effects.

Legislative Decree No. 152 of 03/04/06, Table 3, Annex 5 to Part III, maximum permitted concentration for discharge into sewers: 1 mg/L of formaldehyde.

SECTION 13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods:**

Disposal must take place in an authorized facility and in compliance with current legislation.

Incineration is recommended.

The recommended EWC codes are 080410 or 080409*; these codes are assigned following classification analyses (Regulation (EU) 1357/2014 of 18 December 2014 and Commission Decision No. 955/2014 of 18 December 2014).

Packaging, if properly decontaminated, is disposed of using the EWC code for the packaging material itself.

Contaminated packaging must be disposed of using the same code assigned to the product.

SECTION 14. TRANSPORT INFORMATION

The product is not considered dangerous according to the current regulations regarding the transport of dangerous goods by road (ADR), rail (RID), sea (IMDG Code), and air (IATA).

14.1 UN number

Not applicable.

14.2 UN proper shipping name

Not applicable.

14.3 Transport hazard class(es)

Not applicable.

14.4 Packing group

Not applicable.

14.5 Environmental hazards

Not applicable.

14.6 Special precautions for user

Not applicable.

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14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Information not relevant

SECTION 15. REGULATORY ORDER**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:**

Regulation (EC) 1907/2006 and Regulation (EU) 675/2018 – Restrictions under Annex XVII

Formaldehyde:

Point 28: May not be placed on the market or used for supply to the general public: as a substance or in mixtures at a concentration greater than or equal to 0.1%.

Point 72: May not be placed on the market in:

- a) clothing or related accessories;
- b) textile articles other than clothing which, under normal or reasonably foreseeable conditions of use, come into contact with the skin to a similar extent as clothing; c) footwear. (...)

Point 75: May not be placed on the market in mixtures intended for tattooing purposes. (...)

Regulation (EC) 1907/2006 and subsequent amendments, Article 59 – Candidate List

The product does not contain SVHC substances in concentrations $\geq 0.1\%$.

Regulation (EC) No. 1907/2006 and subsequent amendments – Annex XIV Authorization

The product does not contain substances subject to authorization.

Regulation (EC) No. 1272/2008 and subsequent amendments

Regulation (EU) No. 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals

The substances contained are not subject to authorization.

Regulation (EU) No. 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

The substances contained are not subject to authorization.

Regulation (EU) 2020/878 of 18/06/2020 amending Annex II of the REACH Regulation

Directive 2012/18/EU of 4 July 2012 (Seveso III Directive)

Not applicable.

Legislative Decree 81/2008 - Consolidated Law on Health and Safety at Work, as amended.

Workers exposed to formaldehyde must undergo health surveillance in accordance with Article 41 of Legislative Decree 81 of 9 April 2008 if the assessment pursuant to Article 236 of the same decree has identified a health risk.

This is not an exhaustive list.

15.2 Chemical safety assessment:

A chemical safety assessment has not been carried out for the mixture and the substances it contains.

SECTION 16. OTHER INFORMATION

Text of hazard (H) statements cited in sections 2-3 of the sheet:

H301 Toxic if swallowed

H311 Toxic in contact with skin

H314 Causes severe skin burns and eye damage

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H317 May cause an allergic skin reaction
H330 Fatal if inhaled
H341 Suspected of causing genetic defects
H350 May cause cancer

LEGEND:

- ADR: European Agreement concerning the Carriage of Dangerous Goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- EC50: Effective concentration (required to induce a 50% effect) of a test population
- CE NUMBER: Identifier number in ESIS (European Archive of Existing Substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of Classification and Labeling of Chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulations
- IC50: Immobilization Concentration of 50% of the Test Population
- IMDG: International Maritime Code for Dangerous Goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identification number in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent, Bioaccumulative and Toxic according to REACH
- PEC: Predicted Environmental Concentration
- PEL: Predicted Exposure Level
- PNEC: Predicted No Effect Concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the International Carriage of Dangerous Goods by Train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic compound
- vPvB: Very persistent and very bioaccumulative according to REACH
- WGK: Water hazard class (Germany).

GENERAL BIBLIOGRAPHY:

1. Regulation (EU) 1907/2006 of the European Parliament (REACH)
2. Regulation (EU) 1272/2008 of the European Parliament (CLP)
3. Regulation (EU) 790/2009 of the European Parliament (I Atp. CLP)
4. Regulation (EU) 453/2010 of the European Parliament
5. Regulation (EU) 286/2011 of the European Parliament (II Atp. CLP)
6. Regulation (EU) 618/2012 of the European Parliament (III Atp. CLP)
7. Regulation (EU) 487/2013 of the European Parliament (IV Atp. CLP)
8. Regulation (EU) 944/2013 of the European Parliament (V Atp. CLP)
9. Regulation (EU) 605/2014 of the European Parliament (VI Atp. CLP)
10. Regulation (EU) 2015/1221 of the European Parliament (VII Atp. CLP)
11. Regulation (EU) 2016/918 of the European Parliament (VIII Atp. CLP)
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
16. Regulation (EU) 2019/521 (XII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)
22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)
23. Delegated Regulation (EU) 2023/707
24. Delegated Regulation (EU) 2023/1434 (XIX Atp. CLP)

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25. Delegated Regulation (EU) 2023/1435 (XX Atp. CLP)

- The Merck Index - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials - 7, 1989 Edition
- IFA GESTIS Website
- ECHA Agency Website
- Database of SDS templates for chemical substances - Ministry of Health and Istituto Superiore di Sanità

This product must be stored, handled, and used according to good industrial hygiene practices. The data recorded in this safety data sheet reflect current knowledge, describe the product, and should not be construed as a sales specification. The application of this information does not preclude compliance with current legal regulations. The use of this data and the conditions of use of the product are the sole responsibility of the user.