

SAFETY DATA SHEET (SDS)

in accordance with Regulation (EC) No 1907/2006 (REACH), Annex II — Regulation (EU) 2020/878

Date: 21.07.2026 | Version: 16 | EN

Formaldehyde (~37% solution, formalin)

formaldehyde

CAS 50-00-0

CH₂O

EC 200-001-8



MOLAR MASS

30.03

LOGP

1.20
(pubchem)

HAZARD CLASSIFICATION (GHS / CLP)



Danger

H350 H341 H330 H302 H314 H317 H335

1. Identification of the substance/mixture and of the company/undertaking

1.1 Substance name	Formaldehyde (~37% solution, formalin)
1.1 IUPAC name	formaldehyde
1.1 CAS number	50-00-0
1.1 EC number	200-001-8
1.1 PubChem CID	712
1.1 InChIKey	WSFSSNUMVMOOMR-UHFFFAOYSA-N
1.1 SMILES	C=O
1.1 Molecular formula	CH ₂ O ^[7]
1.1 Molar mass	30.026 g/mol ^[7]
1.1 Exact mass	—

1.2 Uses

For laboratory and research purposes. Not for use in the production of food, medicines or cosmetics without appropriate authorisation.

1.3 Details of the supplier

Name	ADVANCED CHEMISTRY R&D SOLUTIONS
Address	ul. Juliana Przybosa 8, 21-400 Łuków, Poland
Tax ID (NIP)	
Tel.	
E-mail	
Website	

1.4 Emergency telephone number

Emergency telephone

+48 42 631 47 24

Toxicological Information Centre (CIT), Łódź — available 24/7

2. Hazards identification



Danger

Hazard statements (H) [3][4][11]

H350	May cause cancer
H341	Suspected of causing genetic defects
H330	Fatal if inhaled
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H335	May cause respiratory irritation

Precautionary statements (P) [3][4][11]

P201	Obtain special instructions before use
P260	Do not breathe dust/fume/gas/mist/vapours/spray
P264	Wash thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P271	Use only outdoors or in a well-ventilated area
P272	Contaminated work clothing should not be allowed out of the workplace
P280	Wear protective gloves/protective clothing/eye protection/face protection
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301+P330+P331	IF SWALLOWED: Rinse mouth; Do NOT induce vomiting
P302+P352	IF ON SKIN: Wash with plenty of water
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing; Rinse skin with water or shower
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes; Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313	IF exposed or concerned: Get medical advice/attention
P310	Immediately call a POISON CENTER or doctor/physician
P311	Call a POISON CENTER or doctor/physician
P330	Rinse mouth

P333+P313	If skin irritation or rash occurs: Get medical advice/attention
P363	Wash contaminated clothing before reuse
P403+P233	Store in a well-ventilated place: Keep container tightly closed
P405	Store locked up
P501	Dispose of contents/container to an approved waste collection point

NOTE: CMR substance — employment of pregnant and breastfeeding women in work harmful to health is prohibited (Polish Labour Code Art. 176 § 1; Council of Ministers Regulation of 3 April 2017, Journal of Laws 2017 item 796). ^{[17][18]}

3. Composition/information on ingredients

Substance type	solution (commercial form)
CAS Number	50-00-0
EC number	200-001-8
Molecular formula	CH ₂ O
Concentration	~37% (aqueous solution, formalin; usually 10–12% methanol as stabilizer)
Specyficzne stężenia graniczne / M-współczynnik (CLP Zał. VI Tab.3)	SCL: H314: C ≥ 25 %; H315: 5 % ≤ C < 25 %; H319: 5 % ≤ C < 25 %; H335: C ≥ 5 %; H317: C ≥ 0,2 % ^[3]

4. First aid measures



Inhalation

Move the affected person to fresh air. Keep at rest. Call a physician. Semi-sitting position. Give oxygen if available. If not breathing: artificial respiration (qualified personnel only). ^{[1][2][15]}

Skin contact

Remove contaminated clothing. Rinse skin with soap and water (min. 15 minutes). Call a physician immediately. ^{[1][2][15]}

Eye contact

Rinse eyes with running water (min. 15 minutes). Remove contact lenses if possible. If irritation persists — consult an ophthalmologist. ^{[1][2][15]}

Ingestion

Do NOT induce vomiting (unless directed by a physician). Rinse mouth with water. Never give anything by mouth to an unconscious person. Poison Centre Łódź: +48 42 631 47 24 (24/7). Emergency number: 112. ^{[1][2][15]}

Symptoms and effects

nausea, vomiting, diarrhoea; cough, shortness of breath, headache, dizziness; skin redness and irritation. ^{[3][11]}

Notes for physician

Requires verification

Emergency numbers: CIT Łódź: +48 42 631 47 24 (24/7) | Emergency: 112

5. Firefighting measures

Suitable extinguishing media	Adapt extinguishing media to surroundings. CO ₂ , dry powder, foam. [1] [2] [15]
Unsuitable extinguishing media	No specific restrictions. [1] [2] [15]
Specific hazards	Thermal decomposition products:CO, CO ₂ . [16]
Advice for firefighters	Use self-contained breathing apparatus (SCBA). Full protective suit. [1] [2] [15]
Flash point note	~50–85°C c.c. (formalin; depending on methanol-stabilizer content)
Auto-ignition temperature	424°C [8]

6. Accidental release measures

Personal precautions	Use personal protective equipment (see Section 8). Avoid breathing vapours. [1] [2] [15]
Environmental precautions	Prevent entry into sewers, groundwater and surface water. [1] [2] [15]
Methods for containment and cleaning up	Contain the spill with a barrier. Absorb with inert material (sand, vermiculite, diatomaceous earth). Collect into sealed, labelled containers. Do not release into drains. [1] [2] [15]
Related sections	8; 13

7. Handling and storage

Precautions	Work in a fume hood or with adequate ventilation. No eating, drinking or smoking in the work area. [1] [2] [15]
Storage temperature	Store at room temperature (15-25°C) or as indicated on the label. [1] [2] [15]
Humidity	Store in a dry place (<60% RH). [1] [2] [15]
Light	Protect from direct sunlight. [1] [2] [15]
Incompatible materials	Strong oxidizers. [16]

8. Exposure controls/personal protection

8.1 Control parameters

OEL — NDS (Poland)	NDS = 0.37 mg/m ³ (TWA) · NDSch = 0.74 mg/m ³ (STEL) — Polish MRPiPS Regulation (NDS/NDSch list) ^[21]
OEL (EU)	OEL-TWA: 0.3 ppm (0.37 mg/m ³) · OEL-STEL: 0.6 ppm (0.74 mg/m ³) — BOELV CMD 2004/37 (2019/983) ^[12]
DNEL	No data available.
PNEC	No data available.

8.2 Personal protective equipment (PPE) ^{[5][6][19]}



Chemical-resistant protective gloves
EN ISO 374-1:2016+A1:2018
nitrile (min. 0.11 mm)



Closed safety spectacles or goggles
EN ISO 16321-1:2022 / EN 166:2001



Respiratory protection
EN 137:2006
SCBA (self-contained breathing apparatus)



Face shield (splash risk)
EN ISO 16321-1:2022



Chemical-resistant protective clothing
EN 13034:2005+A1:2009 (typ 6) / EN 14126:2003 (bio)



Closed safety footwear with toe protection
EN ISO 20345:2022 (S2/S3)

9. Physical and chemical properties

Property (item 9.1)	Value	Source
Physical state	Liquid	
Colour	Nearly colorless gas [Note: Often used in an aqueous solution]. /Pure formaldehyde/ ^[7]	
Odour	Pungent, suffocating odor ^[7]	
pH (1% aqueous solution)	No data available.	
Melting point	approx. -15°C (~37% solution, methanol-stabilized)	Curated list (commercial form)
Boiling point	approx. 96–99°C (~37% solution, formalin)	Curated list (commercial form)
Flash point	~50–85°C c.c. (formalin; depending on methanol-stabilizer content)	
Flammability	No data available.	
Lower and upper explosion limit	No data available.	
Density (20°C)	1,09–1,11 g/cm ³ (~37% solution, 20°C)	Curated list (commercial form)
Vapour pressure	No data available.	
Relative vapour density	No data available.	
Kinematic viscosity	No data available.	

Property (item 9.1)	Value	Source
Auto-ignition temperature	424 °C ^[8]	
Decomposition temperature	Not applicable	
Water solubility (20 °C)	No data available.	
Particle characteristics	Not applicable (REACH 9.1(r))	
log Kow (XLogP3)	Not directly applicable for the commercial solution (formalin); XLogP3 of the formaldehyde molecule $\approx 0,35$ ^[7]	Curated list (commercial form)
Molar mass	30.026 g/mol ^[7]	
Molecular formula	CH ₂ O ^[7]	

10. Stability and reactivity

Reactivity	Stable under normal storage and handling conditions.
Chemical stability	Thermally stable under recommended conditions.
Hazardous reactions	No hazardous reactions known under normal conditions.
Conditions to avoid	High temperatures, direct sunlight, moisture.
Incompatible materials	Strong oxidizers.
Decomposition products	Thermal decomposition products: CO, CO ₂ .

11. Toxicological information

LD50 (oral)	100 mg/kg (rat) ^[9]
LD50 (dermal)	No data available.
LC50 (inhalation)	LC50 588 mg/m ³ (rat) ^{[10][11]}
Skin irritation	Category 1 (H314) — corrosive; sub-category (1A/1B/1C) per CLP Annex VI entry. ^{[3][11]}
Eye irritation	Serious eye damage — covered by the corrosive classification (H314; CLP Annex I 3.3.2.1). ^{[3][11]}
Sensitisation	Skin, Category 1 (H317): May cause an allergic skin reaction. ^{[3][11]}
Mutagenicity	Category 2 (harmonised classification, Annex VI to CLP).
Carcinogenicity	Category 1A/1B (harmonised classification, Annex VI to CLP).
IARC classification (carcinogenicity)	IARC Group 1 — carcinogenic to humans. ^[20]
Reproductive toxicity	Not classified (no harmonised classification in CLP Annex VI) ^{[3][11]}
STOT — single exposure	Category 3 (H335): May cause respiratory irritation. ^{[3][11]}
STOT — repeated exposure	Not classified (no harmonised classification in CLP Annex VI) ^{[3][11]}
Aspiration hazard	Not classified (no harmonised classification in CLP Annex VI) ^{[3][11]}

12. Ecological information

Aquatic toxicity	No data available.
Persistence / biodegradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
PBT/vPvB assessment	Insufficient data to assess PBT/vPvB.
Endocrine disrupting properties	No information.

13. Disposal considerations

Disposal method	Hand over for disposal to licensed contractors in accordance with national and local regulations. Do not discharge into sewers.
Waste code (EWC)	16 05 06* — Laboratory and analytical chemicals (e.g. chemical reagents) containing hazardous substances. Verification of the EWC code required. ^[14]
Packaging	Cleaned packaging may be recycled. Contaminated packaging must be treated as hazardous waste.

14. Transport information



Class 6.1 — Toxic substances



Class 8 — Corrosive substances

UN number	UN 2209 ^[13]
Proper shipping name	Formaldehyde solution (25-37%) ^[13]
Transport hazard class	8 ^[13]
Packing Group	III ^[13]
Environmental hazard	Not classified as environmentally hazardous for transport (no H400/H410/H411 in CLP Annex VI; no marine pollutant mark required) ^[3]
Special precautions	Handle as dangerous goods according to the assigned class (ADR/IMDG/IATA); apply the precautions appropriate to that class.
CN/HS code	CN/HS code: verification required in the Eurostat Combined Nomenclature.
Notes	Formaldehyde solution (formalin): with methanol (flash point <60°C) => UN1198 FORMALDEHYDE SOLUTION, FLAMMABLE, class 3, PG III; without flammability (≥60°C, ≥25% formaldehyde) => UN2209 class 8, PG III. Verify according to the flammability of the specific product.

15. Regulatory information

SVHC status	SVHC status not verified against the available dataset — check the current ECHA Candidate List; do not assume absence. ^[1]
REACH Annex XIV	Not verified against the ECHA Authorisation List — check REACH Annex XIV. ^[1]
REACH Annex XVII	Subject to REACH restriction Annex XVII (entry 77): Formaldehyde — restriction on emissions from articles (furniture, wood-based products); air concentration limit 0.062 mg/m ³ (0.05 ppm). Furthermore: Subject to general entries 28–30 of REACH Annex XVII (CMR substance cat. 1A/1B): sale to the general public prohibited — supply to professional users only. ^[1]
Verification date	2026-07-21

16. Other information

Legal status of classification: harmonised under CLP Annex VI — Reg. (EC) No 1272/2008 (as at the date of issue). Entries with an entry-into-force date after 21.07.2026 were omitted as future (not yet applicable). Acute-tox provenance: classification updated by Regulation (EU) 2024/2564 (22nd ATP to CLP, date of application 01.05.2026) — Acute Tox. 2 (H330, inhalation) + Acute Tox. 4 (H302, oral), Skin Sens. 1A. Previous minimum classification Acute Tox. 3* (H331/H311/H301) applied until 30.04.2026 — cards issued before this date may still contain it.

Data aggregated automatically from public reference databases (PubChem, ECHA, NIST and others).

Full text of H statements

H350	May cause cancer
H341	Suspected of causing genetic defects
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Full text of P statements

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P301+P330+P331	IF SWALLOWED: Rinse mouth; Do NOT induce vomiting
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P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes; Remove contact lenses, if present and easy to do. Continue rinsing
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P330	Rinse mouth
P333+P313	If skin irritation or rash occurs: Get medical advice/attention
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P501	Dispose of contents/container to an approved waste collection point

Abbreviations

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging (Reg. (EC) 1272/2008)
CMR	Carcinogenic, Mutagenic, toxic to Reproduction
DNEL	Derived No-Effect Level
EC	European Community number
EPI	Personal protective equipment
GHS	Globally Harmonized System
IATA	International Air Transport Association

IMDG	International Maritime Dangerous Goods Code
SDS	Safety Data Sheet
LC50	Lethal Concentration, 50%
LD50	Lethal Dose, 50%
NDS	Maximum admissible concentration (workplace, PL)
NDSCh	Short-term exposure limit (PL)
OEL	Occupational Exposure Limit
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Reg. (EC) 1907/2006)
STOT	Specific Target Organ Toxicity
SVHC	Substance of Very High Concern
TPSA	Topological Polar Surface Area
vPvB	very Persistent and very Bioaccumulative

Version history

v16 (21.07.2026) Based on ECHA harmonised classification (Annex VI to CLP, ATP 23).

References

- [1] EP and Council. Reg.(EC) No 1907/2006 (REACH). Art.31, Annex II. OJ EU L 396/2006. URL: <https://eur-lex.europa.eu/eli/reg/2006/1907/oj> Accessed: 2026-07-21.
- [2] European Commission. Reg.(EU) 2020/878 — amending Annex II REACH. OJ EU L 203/2020. From 01.01.2023. URL: <https://eur-lex.europa.eu/eli/reg/2020/878/oj> Accessed: 2026-07-21.
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External links

NIST: <https://webbook.nist.gov/cgi/cbook.cgi?ID=50-00-0>
 ChEMBL: https://www.ebi.ac.uk/chembl/compound_report_card/CHEMBL1255



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