

SAFETY DATA SHEET

Glycolic Acid - Commercial Grade



Version	Revision Date:	SDS Number:	Date of last issue: 11.08.2023
10.1	30.10.2023	2396437-00017	Date of first issue: 30.01.2018

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

1.1 Product identifier

Trade name : Glycolic Acid - Commercial Grade

SDS-Identcode : 130000052572

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

Use of the Sub-stance/Mixture : various

Recommended restrictions on use : Not applicable

1.3 Details of the supplier of the safety data sheet

Company : PureTech Scientific LLC (Appointed Only Representative:
Blue Frog Scientific EURL)
901 W. DuPont Ave
Belle, WV 25015 United States of America (USA)

Telephone : 1-877-215-5999

Telefax : 1-304-357-1364

E-mail address of person responsible for the SDS : sds-support@puretechscientific.com

1.4 Emergency telephone number

+1 760 476 3959 access code 336264

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin corrosion, Category 1	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Reproductive toxicity, Category 1B	H360FD: May damage fertility. May damage the unborn child.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.
H332 Harmful if inhaled.
H360FD May damage fertility. May damage the unborn child.

Supplemental Hazard Statements : EUH071 Corrosive to the respiratory tract.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P301 + P330 + P331 + P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/ doctor.
P303 + P361 + P353 + P310 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Hazardous components which must be listed on the label:

Glycolic acid
Methoxyacetic acid
Formic acid

Additional Labelling

EUH208 Contains Formaldehyde.
May produce an allergic reaction.

Restricted to professional users.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Glycolic acid	79-14-1 201-180-5 01-2119485579-17	Acute Tox. 4; H332 Skin Corr. 1B; H314 Eye Dam. 1; H318	$\geq 70 - < 90$
Methoxyacetic acid	625-45-6 210-894-6 607-312-00-1	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Repr. 1B; H360FD STOT SE 3; H335	$\geq 0,3 - < 1$
Formic acid	64-18-6 200-579-1 607-001-00-0	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 3; H331 Skin Corr. 1A; H314 Eye Dam. 1; H318	$\geq 0,1 - < 1$
Formaldehyde	50-00-0 200-001-8 605-001-00-5	Flam. Gas 1B; H221 Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 3; H311 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 Muta. 2; H341 Carc. 1B; H350 STOT SE 3; H335	$< 0,1$

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

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| If inhaled | : | If inhaled, remove to fresh air.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
Get medical attention immediately. |
| In case of skin contact | : | In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Get medical attention immediately.
Wash clothing before reuse.
Thoroughly clean shoes before reuse. |
| In case of eye contact | : | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention immediately. |
| If swallowed | : | If swallowed, DO NOT induce vomiting.
If vomiting occurs have person lean forward.
Call a physician or poison control centre immediately.
Rinse mouth thoroughly with water.
Never give anything by mouth to an unconscious person. |

4.2 Most important symptoms and effects, both acute and delayed

- | | | |
|-------|---|---|
| Risks | : | Causes serious eye damage.
Harmful if inhaled.
May damage fertility. May damage the unborn child.
Causes severe burns.
Corrosive to the respiratory tract.

Causes digestive tract burns. |
|-------|---|---|

4.3 Indication of any immediate medical attention and special treatment needed

- | | | |
|-----------|---|---|
| Treatment | : | Treat symptomatically and supportively. |
|-----------|---|---|
-

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | | |
|--------------------------------|---|--|
| Suitable extinguishing media | : | Water spray
Alcohol-resistant foam
Carbon dioxide (CO ₂)
Dry chemical |
| Unsuitable extinguishing media | : | None known. |

5.2 Special hazards arising from the substance or mixture

- | | | |
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| Specific hazards during fire-fighting | : | Exposure to combustion products may be a hazard to health. |
|---------------------------------------|---|--|

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Hazardous combustion products : Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

6.2 Environmental precautions

Environmental precautions : Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

- | | | |
|-------------------------|---|--|
| Technical measures | : | See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section. |
| Local/Total ventilation | : | If sufficient ventilation is unavailable, use with local exhaust ventilation. |
| Advice on safe handling | : | Do not get on skin or clothing.
Avoid breathing mist or vapours.
Do not swallow.
Do not get in eyes.
Wash skin thoroughly after handling.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Keep container tightly closed.
Take care to prevent spills, waste and minimize release to the environment.

Do not breathe decomposition products. |
| Hygiene measures | : | If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use. |

7.2 Conditions for safe storage, including any incompatibilities

- | | | |
|---|---|---|
| Requirements for storage areas and containers | : | Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations.

Reacts with many metals to liberate hydrogen gas which can form explosive mixtures with air. Hydrogen, a highly flammable gas, can accumulate to explosive concentrations inside drums, or any types of steel containers or tanks upon storage. |
| Advice on common storage | : | Do not store with the following product types:
Strong oxidizing agents
Self-reactive substances and mixtures
Organic peroxides
Explosives |
| Recommended storage temperature | : | < 50 °C |

7.3 Specific end use(s)

- | | | |
|-----------------|---|-------------------|
| Specific use(s) | : | No data available |
|-----------------|---|-------------------|

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Formic acid	64-18-6	TWA	5 ppm 9 mg/m ³	2006/15/EC
Formaldehyde	50-00-0	TWA	0,3 ppm 0,37 mg/m ³	2004/37/EC
		STEL	0,6 ppm 0,74 mg/m ³	2004/37/EC

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Carbon dioxide	124-38-9	TWA	5.000 ppm 9.000 mg/m ³	2006/15/EC

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Glycolic acid	Workers	Inhalation	Acute systemic effects	9,2 mg/m ³
	Workers	Inhalation	Acute local effects	9,2 mg/m ³
	Workers	Skin contact	Long-term systemic effects	57,69 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	10,56 mg/m ³
	Workers	Inhalation	Long-term local effects	1,53 mg/m ³
	Consumers	Inhalation	Acute systemic effects	2,3 mg/m ³
	Consumers	Skin contact	Long-term systemic effects	28,85 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	0,75 mg/kg bw/day
	Consumers	Inhalation	Acute local effects	2,3 mg/m ³
	Consumers	Inhalation	Long-term systemic effects	2,6 mg/m ³
Formic acid	Workers	Inhalation	Acute local effects	19 mg/m ³
	Workers	Inhalation	Long-term local effects	9,5 mg/m ³
	Consumers	Inhalation	Acute local effects	9,5 mg/m ³
	Consumers	Inhalation	Long-term local effects	3 mg/m ³
Formaldehyde	Workers	Inhalation	Long-term systemic effects	9 mg/m ³
	Workers	Inhalation	Long-term local effects	0,375 mg/m ³
	Workers	Inhalation	Acute local effects	0,75 mg/m ³

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	Workers	Skin contact	Long-term systemic effects	240 mg/kg bw/day
	Workers	Skin contact	Long-term local effects	0,037 mg/cm2
	Consumers	Inhalation	Long-term systemic effects	3,2 mg/m3
	Consumers	Inhalation	Long-term local effects	0,1 mg/m3
	Consumers	Skin contact	Long-term systemic effects	102 mg/kg bw/day
	Consumers	Skin contact	Long-term local effects	0,012 mg/cm2
	Consumers	Ingestion	Long-term systemic effects	4,1 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Glycolic acid	Fresh water	0,0312 mg/l
	Freshwater - intermittent	0,312 mg/l
	Marine water	0,0031 mg/l
	Marine sediment	0,0115 mg/kg dry weight (d.w.)
	Fresh water sediment	0,115 mg/kg dry weight (d.w.)
	Soil	0,007 mg/kg dry weight (d.w.)
	Sewage treatment plant	7 mg/l
Formic acid	Oral (Secondary Poisoning)	16,66 mg/kg food
	Fresh water	2 mg/l
	Marine water	0,2 mg/l
	Intermittent use/release	1 mg/l
	Sewage treatment plant	7,2 mg/l
	Fresh water sediment	13,4 mg/kg
	Marine sediment	1,34 mg/kg
Formaldehyde	Soil	1,5 mg/kg
	Fresh water	0,44 mg/l
	Freshwater - intermittent	4,44 mg/l
	Marine water	0,44 mg/l
	Sewage treatment plant	0,19 mg/l
	Fresh water sediment	2,3 mg/kg dry weight (d.w.)
	Marine sediment	2,3 mg/kg dry weight (d.w.)
	Soil	0,2 mg/kg dry weight (d.w.)

8.2 Exposure controls

Engineering measures

Processing may form hazardous compounds (see section 10).
Minimize workplace exposure concentrations.
If sufficient ventilation is unavailable, use with local exhaust ventilation.

Personal protective equipment

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| Eye/face protection | : | Wear the following personal protective equipment:
Chemical resistant goggles must be worn.
If splashes are likely to occur, wear:
Face-shield |
| Hand protection | : | |
| Material | : | Chloroprene |
| Break through time | : | > 480 min |
| Glove thickness | : | 0,6 mm |
| Remarks | : | Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday. |
| Skin and body protection | : | Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc). |
| Respiratory protection | : | If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection. |
| Filter type | : | Inorganic gas/vapour type (B) |

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | | |
|---|---|----------------------|
| Appearance | : | liquid |
| Colour | : | amber |
| Odour | : | mild, of burnt sugar |
| Odour Threshold | : | No data available |
| pH | : | 0,1 |
| Melting point/freezing point | : | 10 °C |
| Initial boiling point and boiling range | : | 112 °C (1.013 hPa) |
| Flash point | : | > 100 °C |
| Evaporation rate | : | No data available |
| Flammability (solid, gas) | : | Not applicable |

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Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	0,017 hPa (25 °C)
Relative vapour density	:	No data available
Density	:	1,25 g/cm ³ (26 °C)
Solubility(ies)	:	
Water solubility	:	> 300 g/l (for a component of this mixture) (22 °C)
Partition coefficient: n-octanol/water	:	log Pow: -1,11 (19 °C)
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, dynamic	:	6,149 mPa.s (23 °C)
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

Flammability (liquids)	:	No data available
Particle size	:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Can react with strong oxidizing agents. Hazardous decomposition products will be formed at elevated temperatures.
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10.4 Conditions to avoid

Conditions to avoid	:	None known.
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10.5 Incompatible materials

Materials to avoid : Oxidizing agents
Bases

10.6 Hazardous decomposition products

Thermal decomposition : Carbon dioxide

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Harmful if inhaled.

Product:

Acute inhalation toxicity : Acute toxicity estimate: 4,92 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Components:

Glycolic acid:

Acute oral toxicity : LD50 (Rat): 2.040 mg/kg
Method: US EPA Test Guideline OPP 81-1

Acute inhalation toxicity : LC50 (Rat): 3,6 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : Assessment: The substance or mixture has no acute dermal toxicity

Methoxyacetic acid:

Acute oral toxicity : LD50 (Rat): 1.000 mg/kg

Formic acid:

Acute oral toxicity : LD50 (Rat): 730 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 7,85 mg/l
Exposure time: 4 h

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Test atmosphere: vapour
Method: OECD Test Guideline 403
Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Remarks: Based on data from similar materials

Formaldehyde:

Acute oral toxicity : Acute toxicity estimate: 100 mg/kg
Method: Expert judgement

Acute inhalation toxicity : Acute toxicity estimate: 100 ppm
Exposure time: 4 h
Test atmosphere: gas
Method: Expert judgement

Acute dermal toxicity : LD50 (Rabbit): 270 mg/kg

Skin corrosion/irritation

Causes severe burns.

Components:

Glycolic acid:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Corrosive after 3 minutes to 1 hour of exposure

Methoxyacetic acid:

Species : Rabbit
Result : Corrosive after 3 minutes to 1 hour of exposure

Formic acid:

Result : Corrosive after 3 minutes or less of exposure
Remarks : Based on national or regional regulation.

Formaldehyde:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

Glycolic acid:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Irreversible effects on the eye

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Methoxyacetic acid:

Result	: Irreversible effects on the eye
Remarks	: Based on skin corrosivity.

Formic acid:

Result	: Irreversible effects on the eye
Remarks	: Based on skin corrosivity.

Formaldehyde:

Species	: Rabbit
Result	: Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Glycolic acid:

Test Type	: Buehler Test
Exposure routes	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

Formic acid:

Test Type	: Buehler Test
Exposure routes	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: negative

Formaldehyde:

Test Type	: Local lymph node assay (LLNA)
Exposure routes	: Skin contact
Species	: Mouse
Method	: OECD Test Guideline 429
Result	: positive

Assessment	: Probability or evidence of high skin sensitisation rate in humans
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Germ cell mutagenicity

Not classified based on available information.

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Components:

Glycolic acid:

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
- Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative
- Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative
- Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Ingestion
Method: OECD Test Guideline 474
Result: negative
- Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Methoxyacetic acid:

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
- Test Type: In vitro mammalian cell gene mutation test
Result: negative

Formic acid:

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
- Genotoxicity in vivo : Test Type: Sex-linked recessive lethal test in *Drosophila melanogaster* (in vivo)
Application Route: Ingestion
Method: OECD Test Guideline 477
Result: negative

Formaldehyde:

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: positive
- Test Type: Chromosome aberration test in vitro
Result: positive
- Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)

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Species: Rat
Application Route: Inhalation
Result: positive

Germ cell mutagenicity- Assessment : Positive result(s) from in vivo mammalian somatic cell mutagenicity tests.

Carcinogenicity

Not classified based on available information.

Components:

Glycolic acid:

Species : Mouse
Application Route : Skin contact
Exposure time : 40 weeks
Result : negative

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

Formic acid:

Species : Rat
Application Route : Ingestion
Exposure time : 104 weeks
Result : negative
Remarks : Based on data from similar materials

Formaldehyde:

Species : Rat
Application Route : inhalation (gas)
Exposure time : 28 Months
Result : positive

Carcinogenicity - Assessment : Sufficient evidence of carcinogenicity in animal experiments

Reproductive toxicity

May damage fertility. May damage the unborn child.

Components:

Glycolic acid:

Effects on fertility : Test Type: One-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Method: Regulation (EC) No. 440/2008, Annex, B.34
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 414

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Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

Methoxyacetic acid:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Mouse
Application Route: Ingestion
Result: positive

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: positive

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, based on animal experiments., Clear evidence of adverse effects on development, based on animal experiments.

Formic acid:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 416
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rabbit
Application Route: Ingestion
Method: OECD Test Guideline 414
Result: negative
Remarks: Based on data from similar materials

Formaldehyde:

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: inhalation (gas)
Result: negative

STOT - single exposure

Corrosive to the respiratory tract.

Components:

Methoxyacetic acid:

Assessment : May cause respiratory irritation.
Remarks : Based on harmonised classification in EU regulation 1272/2008, Annex VI

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Formaldehyde:

Assessment : May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Components:

Formaldehyde:

Exposure routes : inhalation (gas)
Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

Glycolic acid:

Species : Rat, male and female
NOAEL : 150 mg/kg
LOAEL : 300 mg/kg
Application Route : Ingestion
Exposure time : 90 Days
Method : OECD Test Guideline 408

Formic acid:

Species : Rat
NOAEL : 400 mg/kg
Application Route : Ingestion
Exposure time : 52 Weeks
Remarks : Based on data from similar materials

Formaldehyde:

Species : Rat
NOAEL : 6 ppm
LOAEL : 10 ppm
Application Route : inhalation (gas)
Exposure time : 28 Days

Aspiration toxicity

Not classified based on available information.

Experience with human exposure

Product:

Inhalation : Target Organs: Bronchia
Symptoms: Cough, Shortness of breath, Pain, Local irritation

Skin contact : Target Organs: Skin
Symptoms: Discomfort, Irritation, Necrosis, Rash

Eye contact : Target Organs: Eyes

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Symptoms: Severe irritation, Corrosion, Ulceration

Ingestion : Target Organs: Kidney
Symptoms: Diarrhoea, Vomiting, Gastrointestinal disturbance, Abdominal pain

SECTION 12: Ecological information

12.1 Toxicity

Components:

Glycolic acid:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 114,8 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 99,6 mg/l
aquatic invertebrates : Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : ErC50 (Pseudokirchneriella subcapitata (green algae)): 31,2
plants : mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 14,4
mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Methoxyacetic acid:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 500 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to algae/aquatic : ErC50 (Desmodesmus subspicatus (green algae)): 66,2 mg/l
plants : Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 : > 1.000 mg/l
Exposure time: 30 min
Method: OECD Test Guideline 209

Formic acid:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 130 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 365 mg/l
aquatic invertebrates : Exposure time: 48 h
Method: OECD Test Guideline 202

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Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 1.240 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

EC10 (Pseudokirchneriella subcapitata (green algae)): 295 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to microorganisms : NOEC : 72 mg/l
Exposure time: 13 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: > 100 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

Formaldehyde:

Toxicity to fish : LC50 : 6,7 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia pulex (Water flea)): 5,8 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 4,89 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 : 34,1 mg/l
Exposure time: 120 h

Toxicity to fish (Chronic toxicity) : NOEC: >= 48 mg/l
Exposure time: 28 d
Species: Oryzias latipes (Orange-red killifish)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: >= 6,4 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

12.2 Persistence and degradability

Components:

Glycolic acid:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301B

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Methoxyacetic acid:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 98 %
Exposure time: 28 d
Method: OECD Test Guideline 301A

Formic acid:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301C

Formaldehyde:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 91 %
Exposure time: 14 d
Method: OECD Test Guideline 301C
Remarks: Based on data from similar materials

12.3 Bioaccumulative potential

Components:

Glycolic acid:

Partition coefficient: n-octanol/water : log Pow: -1,07

Methoxyacetic acid:

Partition coefficient: n-octanol/water : log Pow: -0,68
Remarks: Calculation

Formic acid:

Partition coefficient: n-octanol/water : log Pow: -2,1

Formaldehyde:

Partition coefficient: n-octanol/water : log Pow: 0,35
Remarks: Calculation

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of

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0.1% or higher.

12.6 Other adverse effects

Product:

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities. Do not dispose of waste into sewer.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADN	: UN 3265
ADR	: UN 3265
RID	: UN 3265
IMDG	: UN 3265
IATA	: UN 3265

14.2 UN proper shipping name

ADN	: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Glycolic acid)
ADR	: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Glycolic acid)
RID	: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Glycolic acid)
IMDG	: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Glycolic acid)
IATA	: Corrosive liquid, acidic, organic, n.o.s. (Glycolic acid)

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14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADN	: 8	
ADR	: 8	
RID	: 8	
IMDG	: 8	
IATA	: 8	

14.4 Packing group

ADN	
Packing group	: II
Classification Code	: C3
Hazard Identification Number	: 80
Labels	: 8
ADR	
Packing group	: II
Classification Code	: C3
Hazard Identification Number	: 80
Labels	: 8
Tunnel restriction code	: (E)
RID	
Packing group	: II
Classification Code	: C3
Hazard Identification Number	: 80
Labels	: 8
IMDG	
Packing group	: II
Labels	: 8
EmS Code	: F-A, S-B
IATA (Cargo)	
Packing instruction (cargo aircraft)	: 855
Packing instruction (LQ)	: Y840
Packing group	: II
Labels	: Corrosive
IATA (Passenger)	
Packing instruction (passenger aircraft)	: 851
Packing instruction (LQ)	: Y840
Packing group	: II
Labels	: Corrosive

14.5 Environmental hazards

ADN	
Environmentally hazardous	: no
ADR	
Environmentally hazardous	: no

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RID

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information : Before use read PureTech Scientific LLC safety information. For further information contact the local PureTech Scientific LLC office or nominated distributors. Blue Frog Scientific EURL, as OR for PureTech Scientific LLC USA, 967 Route de la Plaine, La Plaine, 26400 Chabrillan, France, or@bluefrogsscientific.com.

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Full text of H-Statements

H221	: Flammable gas.
H226	: Flammable liquid and vapour.
H301	: Toxic if swallowed.
H302	: Harmful if swallowed.
H311	: Toxic in contact with skin.
H314	: Causes severe skin burns and eye damage.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H330	: Fatal if inhaled.
H331	: Toxic if inhaled.
H332	: Harmful if inhaled.
H335	: May cause respiratory irritation.
H341	: Suspected of causing genetic defects.
H350	: May cause cancer.
H360FD	: May damage fertility. May damage the unborn child.

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Full text of other abbreviations

Acute Tox.	: Acute toxicity
Carc.	: Carcinogenicity
Eye Dam.	: Serious eye damage
Flam. Gas	: Flammable gases
Flam. Liq.	: Flammable liquids
Muta.	: Germ cell mutagenicity
Repr.	: Reproductive toxicity
Skin Corr.	: Skin corrosion
Skin Sens.	: Skin sensitisation
STOT SE	: Specific target organ toxicity - single exposure
2004/37/EC	: Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work
2006/15/EC	: Europe. Indicative occupational exposure limit values
2004/37/EC / STEL	: Short term exposure limit
2004/37/EC / TWA	: Long term exposure limit
2006/15/EC / TWA	: Limit Value - eight hours

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to : Internal technical data, data from raw material SDSs, OECD

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compile the Safety Data Sheet

eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Classification of the mixture:

Acute Tox. 4	H332
Skin Corr. 1	H314
Eye Dam. 1	H318
Repr. 1B	H360FD

Classification procedure:

Calculation method
Based on product data or assessment
Based on product data or assessment
Calculation method

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

EG / EN