

SAFETY DATA SHEET

Version 8.5

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878

Revision Date 02.03.2026

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

1.1 Product identifiers

Product name : CombiCoulomat fritless Aquastar®

Product Number : 1.09257

Catalogue No. : 109257

Brand : Millipore

UFI : 3G11-D66M-099D-WQPJ

REACH No. : This product is a mixture. REACH Registration Number see section 3.

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

Identified uses : Reagent for analysis

Uses advised against : This product is not intended for consumer use.

1.3 Details of the supplier of the safety data sheet

Company : Merck Pty Ltd.
259 Davidson Road, Corner Peddie Road
WADEVILLE, GERMISTON
1428
SOUTH AFRICA

Telephone : +27 (0) 8600 63725

Fax : +27 (0) 860 522 329

1.4 Emergency telephone number

Emergency Phone # : 0-800-983-611 (CHEMTREC)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 2 H225: Highly flammable liquid and vapour.

Acute toxicity, Category 3 H301: Toxic if swallowed.

Acute toxicity, Category 3 H331: Toxic if inhaled.



Acute toxicity, Category 3

H311: Toxic in contact with skin.

Specific target organ toxicity -
single exposure, Category 1, Eyes,
Central nervous system

H370: Causes damage to organs.

Long-term (chronic) aquatic hazard,
Category 3

H412: Harmful to aquatic life with long
lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

: Danger

Hazard statements

: H225 Highly flammable liquid and vapour.
H301 + H311 + H331 Toxic if swallowed, in
contact with skin or if inhaled.
H370 Causes damage to organs (Eyes, Central
nervous system).
H412 Harmful to aquatic life with long lasting
effects.

Precautionary
statements

: **Prevention:**
P210 Keep away from heat, hot surfaces, sparks,
open flames and other ignition sources. No
smoking.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/
eye protection/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a
POISON CENTER/ doctor.
P303 + P361 + P353 IF ON SKIN (or hair): Take off
immediately all contaminated clothing.
Rinse skin with water.
P304 + P340 + P311 IF INHALED: Remove person to
fresh air and keep comfortable for
breathing. Call a POISON CENTER/ doctor.

Hazardous components which must be listed on the label:

Methanol
guanidinium benzoate
Bromoform
guanidinium iodide

Reduced Labelling (<= 125 ml)

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Canada



Hazard pictograms :



Signal word Danger

Hazard Statements

H370

Causes damage to organs.

H412

Harmful to aquatic life with long lasting effects.

H301 + H311 + H331

Toxic if swallowed, in contact with skin or if inhaled.

Precautionary Statements

P301 + P310

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P304 + P340 + P311

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.

Supplemental Hazard Statements

none

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.

Ecological information: 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.

Toxicological information: 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 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Methanol	67-56-1 200-659-6 603-001-00-X 01-2119433307-44-XXXX	Flam. Liq. 2; H225 Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 STOT SE 1; H370 (Eyes, Central	>= 70 - < 90



		nervous system) specific concentration limit STOT SE 1; H370 >= 10 % STOT SE 2; H371 3 - < 10 % Acute toxicity estimate Acute oral toxicity: 100,1 mg/kg Acute inhalation toxicity (vapour): 3,1 mg/l Acute dermal toxicity: 300,1 mg/kg	
guanidinium benzoate	26739-54-8 01-0000017610- 78-XXXX	Acute Tox. 4; H302	>= 10 - < 20
Bromoform	75-25-2 200-854-6 602-007-00-X *	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 3; H331 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Aquatic Chronic 2; H411 Acute toxicity estimate Acute oral toxicity: 933 mg/kg Acute inhalation toxicity (vapour): 3,1 mg/l	>= 2,5 - < 10
guanidinium iodide	19227-70-4 *	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory system)	>= 1 - < 10
Iodine	7553-56-2 231-442-4 053-001-00-3	Acute Tox. 4; H302 Acute Tox. 4;	>= 0,1 - < 0,25



	01-2119485285-30-XXXX	H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory system) STOT RE 1; H372 (Thyroid) Aquatic Acute 1; H400	
		<hr/> M-Factor (Acute aquatic toxicity): 1	

*A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, or the annual tonnage does not require a registration.

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : First aiders need to protect themselves. Show this safety data sheet to the doctor in attendance.
- If inhaled : After inhalation: fresh air. Immediately call in physician.
If breathing stops: immediately apply artificial respiration, if necessary also oxygen.
- In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.
- In case of eye contact : After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.
- If swallowed : After swallowing: fresh air. Make victim drink ethanol (e.g. 1 drinking glass of a 40% alcoholic beverage). Call a doctor immediately (mention methanol ingestion). Only in exceptional cases, if no medical care is available within one hour, induce vomiting (only in fully conscious persons) and make victim drink ethanol again (approx. 0.3 ml of a 40% alcoholic beverage/kg body weight/hour).



4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Foam
Carbon dioxide (CO₂)
Dry powder

Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting : Combustible.

Fire may cause evolution of:
nitrogen oxides
Sulphur oxides
Pay attention to flashback.
Vapours are heavier than air and may spread along floors.
Development of hazardous combustion gases or vapours possible in the event of fire.
Forms explosive mixtures with air at ambient temperatures.

Hazardous combustion products : Carbon oxides

Nitrogen oxides (NO_x)
Hydrogen bromide gas
Hydrogen iodide

5.3 Advice for firefighters

Special protective equipment for fire-fighters : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information : Remove container from danger zone and cool with water.
Suppress (knock down) gases/vapours/mists with a water spray jet.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Advice for non-emergency personnel:

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Do not breathe vapours, aerosols.
Avoid substance contact.
Ensure adequate ventilation.
Keep away from heat and sources of ignition.
Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

6.2 Environmental precautions

Environmental precautions : Do not let product enter drains.
Risk of explosion.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Work under hood. Do not inhale substance/mixture.
Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Further information on storage conditions : Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorised persons.

Storage class (TRGS 510) : 3, Flammable liquids

Further information on storage stability : Recommended storage temperature see product label.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Iodine	Worker DNEL, acute	Inhalation	Systemic effects	1 mg/m ³
	Worker DNEL, longterm	Inhalation	Systemic effects	0,07 mg/m ³
	Worker DNEL, acute	Dermal	Systemic effects	0,01 mg/kg
	Worker DNEL, longterm	Dermal	Systemic effects	0,01 mg/kg

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

Substance name	Environmental Compartment	Value
Iodine	Fresh water	0,13 µg/l
	Marine water	0,0013 µg/l
	Sewage treatment plant	11 mg/l
	Fresh water sediment	0,489 µg/kg
	Marine sediment	0,0489 µg/kg
	Soil	0,1 mg/kg

8.2 Exposure controls

Personal protective equipment

Eye/face protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Safety glasses

Hand protection

Material : butyl-rubber
Break through time : 480 min
Glove thickness : 0,7 mm
Protective index : Full contact
Manufacturer : Butoject® (KCL 898)

Material : Viton®
Break through time : 120 min
Glove thickness : 0,70 mm
Protective index : Splash contact
Manufacturer : Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Remarks : This recommendation applies only to the product stated in the safety data sheet, supplied by us and



for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin and body protection : Flame retardant antistatic protective clothing.

Recommended Filter : Filter type AX
type:

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Advice : Do not let product enter drains.
Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Color : colourless, to, light yellow

Odor : of methanol

Melting point : No data available

Boiling point : No data available

Flammability : No data available

Upper explosion limit /
Upper flammability limit : No data available

Lower explosion limit /
Lower flammability limit : No data available

Flash point : ca. 12 °C

Autoignition temperature : No data available

Decomposition
temperature : No data available

pH : ca. 5,5 (20 °C)



Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Flow time	: No data available
Solubility(ies) Water solubility	: (20 °C) partly soluble
Partition coefficient: n- octanol/water	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Density	: ca. 0,92 g/cm ³ (20 °C)
Relative vapour density	: No data available

9.2 Other information

Explosives	: Not classified as explosive.
Oxidizing properties	: none
Burning rate	: No data available
Evaporation rate	: No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Vapours may form explosive mixture with air.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Hazardous reactions	: Risk of explosion with:
	Oxidizing agents
	perchloric acid
	perchlorates
	salts of oxyhalogenic acids
	chromium(VI) oxide



halogen oxides
nitrogen oxides
nonmetallic oxides
chromosulfuric acid
chlorates
hydrides
zinc diethyl
Halogens
powdered magnesium
hydrogen peroxide
Nitric acid
sulfuric acid
permanganic acid
sodium hypochlorite
Exothermic reaction with:

acid halides
Acid anhydrides
Reducing agents
Acids
Bromine
Chlorine
Chloroform
Magnesium
tetrachloromethane
TITANIUM TETRACHLORIDE
Risk of ignition or formation of inflammable gases or vapours with:
Fluorine
Oxides of phosphorus
Raney-nickel
Generates dangerous gases or fumes in contact with:

Alkaline earth metals
Alkali metals

10.4 Conditions to avoid

Conditions to avoid : Warming.

10.5 Incompatible materials

Materials to avoid : various plastics
various alloys
zinc alloys
Magnesium

10.6 Hazardous decomposition products

In the event of fire: see section 5



SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity

Oral: No data available

Acute toxicity estimate Inhalation - 4 h - 4,16 mg/l - vapour(Calculation method)

Acute toxicity estimate Dermal - 418,32 mg/kg
(Calculation method)

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Mixture causes damage to organs. - Eyes, Central nervous system

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

Endocrine disrupting properties

Product:

Assessment

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.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.



Components

Methanol

Acute toxicity

Acute toxicity estimate Oral - 100,1 mg/kg

(Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Symptoms: Nausea, Vomiting

Acute toxicity estimate Inhalation - 4 h - 3,1 mg/l - vapour

(Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Symptoms: Irritation symptoms in the respiratory tract.

Acute toxicity estimate Dermal - 300,1 mg/kg

(Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

Remarks: (ECHA)

Remarks: Drying-out effect resulting in rough and chapped skin.

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

Remarks: (ECHA)

Respiratory or skin sensitization

Sensitisation test: - Guinea pig

Result: negative

(OECD Test Guideline 406)

Germ cell mutagenicity

Based on available data the classification criteria are not met.

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster lung cells

Result: negative

Method: OECD Test Guideline 474

Species: Mouse - male and female - Bone marrow

Result: negative

Carcinogenicity

Did not show carcinogenic effects in animal experiments.

Reproductive toxicity

Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

Causes damage to organs. - Eyes, Central nervous system

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)



Acute oral toxicity - Nausea, Vomiting
Acute inhalation toxicity - Irritation symptoms in the respiratory tract.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

guanidinium benzoate

Acute toxicity

LD50 Oral - Rat - female - 1.000 mg/kg

(OECD Test Guideline 401)

Inhalation: No data available

LD50 Dermal - Rat - male and female - > 2.000 mg/kg

(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

(OECD Test Guideline 405)

Respiratory or skin sensitization

Sensitisation test (Magnusson and Kligman): - Guinea pig

Result: negative

(OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Result: negative

Test Type: Ames test

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Aspiration hazard

No data available



Bromoform

Acute toxicity

LD50 Oral - Rat - 933 mg/kg

Remarks: Lungs, Thorax, or Respiration:Dyspnea.

(RTECS)

Acute toxicity estimate Oral - 933 mg/kg

(ATE value derived from LD50/LC50 value)

Acute toxicity estimate Inhalation - 4 h - 3,1 mg/l - vapour

(Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Dermal: No data available

Skin corrosion/irritation

Remarks: Causes skin irritation.

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Respiratory or skin sensitization

In Chemico Skin Sensitisation: Direct Peptide Reactivity Assay (DPRA) - In vitro study

Result: negative

(OECD Test Guideline 442C)

Germ cell mutagenicity

Based on available data the classification criteria are not met.

Test Type: Ames test

Test system: *S. typhimurium*

Result: positive

Test Type: sister chromatid exchange assay

Test system: Chinese hamster ovary cells

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Result: negative

Method: OECD Test Guideline 486

Species: Rat - male

Result: negative

Method: OECD Test Guideline 474

Species: Mouse - male and female

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available



Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

guanidinium iodide**Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Remarks: No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Iodine**Acute toxicity**

LD50 Oral - Rat - 315 mg/kg

(US-EPA)

Remarks: The GHS classification specified by the authority

LC50 Inhalation - Rat - male and female - 4 h - > 4,588 mg/l - dust/mist

(OECD Test Guideline 403)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

LD50 Dermal - Rabbit - male and female - 1.425 mg/kg

(US-EPA)

Skin corrosion/irritation

Skin - reconstructed human epidermis (RhE)

Result: Moderate skin irritation



(Regulation (EC) No. 440/2008, Annex, B.46)

Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.

Respiratory or skin sensitization

In animal experiments: - Mouse

Result: negative

(OECD Test Guideline 429)

Germ cell mutagenicity

Test Type: Mutagenicity (mammal cell test):

Test system: Mouse lymphoma test

Result: negative

Method: Mutagenicity (micronucleus test)

Species: Mouse - male and female

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation. - Respiratory system

Specific target organ toxicity - repeated exposure

Oral - Causes damage to organs through prolonged or repeated exposure.

- Thyroid

Oral - Thyroid

Aspiration hazard

No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

Methanol:

Toxicity to fish	:	LC50 (<i>Lepomis macrochirus</i> (Bluegill)): 15.400,0 mg/l End point: mortality Exposure time: 96 h Test Type: flow-through test Analytical monitoring: yes Method: US-EPA
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (<i>Daphnia magna</i> (Water flea)): 18.260 mg/l End point: Immobilization Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	ErC50 (<i>Pseudokirchneriella subcapitata</i> (green algae)): ca. 22.000,0 mg/l



Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 201

Toxicity to microorganisms : IC50 (activated sludge): > 1.000 mg/l
Exposure time: 3 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity) : NOEC: 7.900 mg/l
Exposure time: 200 h
Species: *Oryzias latipes* (Orange-red killifish)
Remarks: (External MSDS)

guanidinium benzoate:

Toxicity to fish : NOEC (*Danio rerio* (zebra fish)): ca. 104 mg/l
End point: mortality
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

LC50 (*Danio rerio* (zebra fish)): > 1.020 mg/l
End point: mortality
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 69,4 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : NOEC (*Desmodesmus subspicatus* (green algae)): > 100 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

IC50 (*Desmodesmus subspicatus* (green algae)): > 100 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): 360 mg/l
Exposure time: 3 h



Test Type: static test
Method: OECD Test Guideline 209
GLP: yes

EC50 (activated sludge): 350 mg/l
Exposure time: 30 min
Test Type: static test
Method: OECD Test Guideline 209
GLP: yes

Bromoform:

Toxicity to fish : LC50 (*Lepomis macrochirus* (Bluegill sunfish)): 29 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Method: US-EPA
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 46 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Method: US-EPA
Remarks: (ECHA)

Toxicity to algae/aquatic plants : ErC50 (*Pseudokirchneriella subcapitata*): 13 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

NOEC (*Pseudokirchneriella subcapitata*): 2,8 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1.000 mg/l
Exposure time: 3 h
Test Type: static test
Method: OECD Test Guideline 209
GLP: yes

NOEC (activated sludge): < 10 mg/l
Exposure time: 3 h
Test Type: static test
Method: OECD Test Guideline 209
GLP: yes



Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Iodine:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,67 mg/l
Exposure time: 96 h
Test Type: static test
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,55 mg/l
Exposure time: 48 h
Test Type: static test
Remarks: (ECHA)

EC50 (Daphnia magna (Water flea)): 0,2 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): 0,13 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201
GLP: yes

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (activated sludge): 280 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
GLP: yes

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

12.2 Persistence and degradability

Components:

Methanol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 99 %
Exposure time: 30 d
Method: OECD Test Guideline 301D

Biochemical Oxygen Demand (BOD) : 600 - 1.120 mg/g
Incubation time: 5 d
Remarks: (IUCLID)

Chemical Oxygen Demand (COD) : 1.420 mg/g
Remarks: (IUCLID)



ThOD : 1.500 mg/g
Remarks: (Lit.)

BOD/ThOD : 76 %
Remarks: Closed Bottle test (IUCLID)

Stability in water : Hydrolysis: 83 - 91 % at 19 °C(72 h)
Remarks: Hydrolyses on contact with water. Hydrolyses readily.

Degradation half life: 2,2 yr
Remarks: reaction with hydroxyl radicals (IUCLID)

Photodegradation : Degradation (direct photolysis): 50 % Degradation half life: 17,2 d

guanidinium benzoate:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 19 mg/l
Result: Readily biodegradable.
Biodegradation: > 90 %
Exposure time: 28 d
Method: OECD Test Guideline 301A

Bromoform:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, non-adapted
Concentration: 33 mg/l
Result: Not readily biodegradable.
Biodegradation: 6 %
Exposure time: 28 d
Method: OECD Test Guideline 301D
GLP: yes

Iodine:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Components:

Methanol:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 72 d
Temperature: 20 °C
Concentration: 5 mg/l



Bioconcentration factor (BCF): 1,0

Partition coefficient: n-octanol/water : log Pow: -0,77 (25 °C)
Method: (experimental)
Remarks: (HSDB)
Bioaccumulation is not expected.

guanidinium benzoate:

Partition coefficient: n-octanol/water : log Pow: -1,41 (23 °C)
pH: 6,1
Method: Regulation (EC) No. 440/2008, Annex, A.8
Remarks: Bioaccumulation is not expected.

Bromoform:

Partition coefficient: n-octanol/water : log Pow: 2,16 (30 °C)
pH: 6,6
Method: OECD Test Guideline 117
GLP: yes
Remarks: Bioaccumulation is not expected.

Iodine:

Bioaccumulation : Remarks: No data available

12.4 Mobility in soil

Components:

Methanol:

Stability in soil : Remarks: Will not adsorb on soil.

Bromoform:

Distribution among environmental compartments : Adsorption/Soil
Koc: 126, log Koc: 2,10
Method: (experimental)
Remarks: Moderately mobile in soils

Iodine:

Stability in soil : Remarks: 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 0.1% or higher.

Components:

Methanol:



Assessment : Not persistent, bioaccumulative, and toxic (PBT).

Iodine:

Assessment : Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

12.6 Endocrine disrupting properties

Product:

Assessment : 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.

No data available

12.7 Other adverse effects

Product:

Additional ecological information : Discharge into the environment must be avoided.

Components:

Methanol:

Additional ecological information : Avoid release to the environment.

guanidinium benzoate:

Additional ecological information : Discharge into the environment must be avoided.

Iodine:

Additional ecological information : No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.



SECTION 14: Transport information

14.1 UN number or ID number

ADR : UN 1230
IMDG : UN 1230
IATA : UN 1230

14.2 UN proper shipping name

ADR : METHANOL, SOLUTION
IMDG : METHANOL, SOLUTION
IATA : Methanol, solution

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADR	: 3	6.1
IMDG	: 3	6.1
IATA	: 3	6.1

14.4 Packing group

ADR
Packing group : II
Classification Code : FT1
Hazard Identification Number : 336
Labels : 3 (6.1)
Tunnel restriction code : (D/E)

IMDG
Packing group : II
Labels : 3 (6.1)
EmS Code : F-E, S-D

IATA (Cargo)

Packing instruction (cargo aircraft) : 364
Packing instruction (LQ) : Y341
Packing group : II
Labels : Class 3 - Flammable liquids, Division 6.1 - Toxic substances

IATA_P (Passenger)

Packing instruction (passenger aircraft) : 352
Packing instruction (LQ) : Y341
Packing group : II
Labels : Class 3 - Flammable liquids, Division 6.1 - Toxic substances

14.5 Environmental hazards

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ADR

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 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:

Number on list 3

Number on list 3: Bromoform

Number on list 69: Methanol

Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EU) No 2024/590 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

E2

H2

P5c



Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

H2 ACUTE TOXIC

P5c FLAMMABLE LIQUIDS

22 Methanol

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements

H225 : Highly flammable liquid and vapour.
H226 : Flammable liquid and vapour.
H301 : Toxic if swallowed.
H301 + H311 + H331 : Toxic if swallowed, in contact with skin or if inhaled.
H302 : Harmful if swallowed.
H311 : Toxic in contact with skin.
H312 : Harmful in contact with skin.
H315 : Causes skin irritation.
H319 : Causes serious eye irritation.
H331 : Toxic if inhaled.
H332 : Harmful if inhaled.
H335 : May cause respiratory irritation.
H370 : Causes damage to organs.
H372 : Causes damage to organs through prolonged or repeated exposure if swallowed.

H400 : Very toxic to aquatic life.
H411 : Toxic to aquatic life with long lasting effects.
H412 : Harmful to aquatic life with long lasting effects.
H370 : Causes damage to organs.
H371 : May cause damage to organs.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard
Eye Irrit. : Eye irritation
Flam. Liq. : Flammable liquids
Skin Irrit. : Skin irritation
STOT RE : Specific target organ toxicity - repeated exposure
STOT SE : Specific target organ toxicity - single exposure
STOT SE : Specific target organ toxicity - single exposure



ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - 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 Harmonised 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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 - Organisation 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.
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Classification of the mixture:

Flam. Liq. 2	H225
Acute Tox. 3	H301
Acute Tox. 3	H331
Acute Tox. 3	H311
STOT SE 1	H370
Aquatic Chronic 3	H412

Classification procedure:

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

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