

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

1.1. Product identifier

Product form	: Mixture
Trade name	: Gliadin Cocktail Solution
Product code	: 8483
Type of product	: Food Safety -- [Food Safety]
Part Number(s)	: 8483 700002583

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

Relevant identified uses

Use of the substance/mixture	: Laboratory chemicals Scientific research and development
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1.3. Details of the supplier of the safety data sheet

Manufacturer

Neogen Corporation
620 Leshar Place
48912 Lansing, Michigan
United States of America
T 800.234.5333
sds@neogen.com, <https://www.neogen.com/>

1.4. Emergency telephone number

Emergency number	: 24 hours: Medical: 1-800-498-5743 (U.S. and Canada) or 1-651-523-0318 (international) Spill/CHEMTREC: 1-800-424-9300 (U.S. and Canada) or 1-703-527-3887 (international)
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Serious eye damage/eye irritation, Category 2	H319
Skin sensitisation, Category 1	H317
Specific target organ toxicity – Repeated exposure, Category 1	H372
Hazardous to the aquatic environment – Chronic Hazard, Category 3	H412

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Causes damage to organs through prolonged or repeated exposure. May cause an allergic skin reaction. Causes serious eye irritation. Harmful to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Contains

: 2-Mercaptoethanol

Hazard statements (CLP)

: H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.

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Precautionary statements (CLP)	H372 - Causes damage to organs through prolonged or repeated exposure. H412 - Harmful to aquatic life with long lasting effects. : P261 - Avoid breathing dust/fume/gas/mist/vapours/spray. P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. P314 - Get medical advice/attention if you feel unwell. P321 - Specific treatment (see supplemental first aid instruction on this label). P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention.
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2.3. Other hazards

Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	Guanidinium chloride (50-01-1), 2-Mercaptoethanol (60-24-2), Sodium chloride (7647-14-5), Hydrochloric acid (7647-01-0) ⁽¹⁾ , Potassium chloride (7447-40-7) ⁽¹⁾
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	Guanidinium chloride (50-01-1), 2-Mercaptoethanol (60-24-2), Sodium chloride (7647-14-5), Hydrochloric acid (7647-01-0) ⁽¹⁾ , Potassium chloride (7447-40-7) ⁽¹⁾

⁽¹⁾ Substance(s) in concentration below 0.1 % and displayed on a voluntary basis

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

Component	
Substance(s) not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605	Hydrochloric acid (7647-01-0) ⁽¹⁾

⁽¹⁾ Substance(s) in concentration below 0.1 % and displayed on a voluntary basis

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Guanidinium chloride	CAS-No.: 50-01-1 EC-No.: 200-002-3 EC Index-No.: 607-148-00-0	$\geq 15 - < 25$	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 STOT RE 2, H373 Aquatic Chronic 3, H412
2-Mercaptoethanol substance with national workplace exposure limit(s) (LT)	CAS-No.: 60-24-2 EC-No.: 200-464-6	$\geq 1 - < 5$	Acute Tox. 3 (Oral), H301 Acute Tox. 2 (Dermal), H310 Acute Tox. 3 (Inhalation), H331 Acute Tox. 4 (Inhalation:dust,mist), H332 Eye Dam. 1, H318 Skin Sens. 1A, H317 Repr. 2, H361f STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Sodium chloride substance with national workplace exposure limit(s) (LT, LV)	CAS-No.: 7647-14-5 EC-No.: 231-598-3	≥ 0.5 – < 1	Not classified
Hydrochloric acid substance with national workplace exposure limit(s) (AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GI, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, AL, IS, NO, MK, RS, CH, TR); substance with a Community workplace exposure limit	CAS-No.: 7647-01-0 EC-No.: 231-595-7 EC Index-No.: 017-002-01-X	< 0.1	Acute Tox. 3 (Oral), H301 Acute Tox. 2 (Inhalation:dust,mist), H330 Skin Corr. 1, H314 Eye Dam. 1, H318
Potassium chloride substance with national workplace exposure limit(s) (BG, LT, LV)	CAS-No.: 7447-40-7 EC-No.: 231-211-8	< 0.1	Not classified

Specific concentration limits:

Name	Product identifier	Specific concentration limits (%)
Hydrochloric acid	CAS-No.: 7647-01-0 EC-No.: 231-595-7 EC Index-No.: 017-002-01-X	(10 ≤ C < 25) Skin Irrit. 2; H315 (10 ≤ C < 25) Eye Irrit. 2; H319 (10 ≤ C < 100) STOT SE 3; H335 (25 ≤ C < 100) Skin Corr. 1B; H314

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Get medical advice/attention if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.
Self protection of the first-aider	: First aid workers will be equipped with suitable personal protective equipment.

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

Symptoms/effects after inhalation	: None under normal conditions.
Symptoms/effects after skin contact	: May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Eye irritation.
Symptoms/effects after ingestion	: None under normal conditions.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a heavy water stream.

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5.2. Special hazards arising from the substance or mixture

- Fire hazard : No fire hazard.
- Explosion hazard : No direct explosion hazard.
- Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

- Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment.
- Emergency procedures : Ventilate spillage area. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
- Emergency procedures : Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.
- Methods for cleaning up : Take up liquid spill into absorbent material.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes. Wear personal protective equipment.
- Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Keep in a cool, well-ventilated place away from heat.
- Storage conditions : Keep cool. Protect from sunlight.
- Storage temperature : 2 – 30
- Packaging materials : Always store product in container of same material as original container.

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7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure and biological limit values

Hydrochloric acid (7647-01-0)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Hydrogen chloride
IOEL TWA	8 mg/m ³
	5 ppm
IOEL STEL	15 mg/m ³
	10 ppm
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC
Ireland - Occupational Exposure Limits	
Local name	Hydrogen chloride
OEL TWA	8 mg/m ³
	5 ppm
OEL STEL	15 mg/m ³
	10 ppm
Remark	IOELV (Indicative Occupational Exposure Limit Values)
Regulatory reference	Chemical Agents Code of Practice 2024

8.2. Exposure controls

Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Personal protection equipment

Personal protective equipment:

Wear recommended personal protective equipment.

Personal protective equipment symbol(s):



Eye and face protection

Eye protection:

Safety glasses

Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

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Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Clear.
Appearance	: Solution.
Odour	: Unpleasant odour.
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Non flammable
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: Not available
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: Not available
Solubility	: Soluble in water.
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: Not available
Relative vapour density at 20°C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

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10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity (oral)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Not classified (Based on available data, the classification criteria are not met)

Guanidinium chloride (50-01-1)

LD50 oral rat	774 – 907 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 oral	774 mg/kg
LD50 dermal rabbit	> 2000 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LD50 dermal	2500 mg/kg
LC50 Inhalation - Rat	5.32 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s))
LC50 Inhalation - Rat (Dust/Mist)	5.319 mg/l/4h

2-Mercaptoethanol (60-24-2)

LD50 oral rat	98 – 168 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Read-across, Oral, 14 day(s))
LD50 oral	244 mg/kg
LD50 dermal rabbit	112 – 224 mg/kg bodyweight (Other, 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LD50 dermal	112 mg/kg
LC50 Inhalation - Rat	2.03 mg/l (Other, 4 h, Rat, Male, Experimental value, Inhalation (vapours), 14 day(s))
LC50 Inhalation - Rat (Vapours)	2 mg/l/4h

Sodium chloride (7647-14-5)

LD50 oral rat	> 3980 mg/kg bodyweight (Rat, Experimental value, 20 % aqueous solution, Oral)
LD50 dermal rabbit	> 10000 mg/kg (Rabbit, Experimental value, Dermal)
LC50 Inhalation - Rat	> 42 mg/l air (1 h, Rat, Male, Experimental value, 20 % aqueous solution, Inhalation (aerosol))
LC50 Inhalation - Rat (Dust/Mist)	> 10.5 mg/l Source: Corporate Solution From Thomson Micromedex

Hydrochloric acid (7647-01-0)

LD50 oral rat	238 – 277 mg/kg
LD50 oral	238 mg/kg
LD50 dermal rabbit	> 5010 mg/kg Source: ECHA
LD50 dermal	5010 mg/kg
LC50 Inhalation - Rat	8.3 mg/l Source: ECHA
LC50 Inhalation - Rat [ppm]	1411 ppm
LC50 Inhalation - Rat (Dust/Mist)	0.42 mg/l/4h
LC50 Inhalation - Rat (Vapours)	8.3 mg/l

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Potassium chloride (7447-40-7)	
LD50 oral rat	3020 mg/kg bodyweight (Rat, Female, Experimental value, Oral)
LC50 Inhalation - Rat (Dust/Mist)	> 2.4 mg/l
Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met)
Guanidinium chloride (50-01-1)	
pH	4.5 – 6 (57.3 %)
2-Mercaptoethanol (60-24-2)	
pH	4.6 – 6 (50 %)
Sodium chloride (7647-14-5)	
pH	7.5 (18 °C)
Hydrochloric acid (7647-01-0)	
pH	< 1
Potassium chloride (7447-40-7)	
pH	5.5 – 8.5 (5 %, 20 °C)
Serious eye damage/irritation	: Causes serious eye irritation.
Guanidinium chloride (50-01-1)	
pH	4.5 – 6 (57.3 %)
2-Mercaptoethanol (60-24-2)	
pH	4.6 – 6 (50 %)
Sodium chloride (7647-14-5)	
pH	7.5 (18 °C)
Hydrochloric acid (7647-01-0)	
pH	< 1
Potassium chloride (7447-40-7)	
pH	5.5 – 8.5 (5 %, 20 °C)
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Hydrochloric acid (7647-01-0)	
IARC group	3 - Not classifiable
Potassium chloride (7447-40-7)	
NOAEL (chronic, oral, animal/male, 2 years)	≈ 1820 mg/kg bodyweight Animal: rat, Animal sex: male
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
2-Mercaptoethanol (60-24-2)	
NOAEL (animal/male, F0/P)	75 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: other., Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
NOAEL (animal/female, F0/P)	15 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: other., Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)

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STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure.

Guanidinium chloride (50-01-1)	
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents), Guideline: EU Method B.26 (Sub-Chronic Oral Toxicity Test: Repeated Dose 90-Day Oral Toxicity Study in Rodents)
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

2-Mercaptoethanol (60-24-2)	
LOAEL (oral, rat, 90 days)	50 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity Study in Rodents)
NOAEL (dermal, rat/rabbit, 28 days)	11.25 mg/kg bw/day
NOAEL (oral, rat, 90 days)	15 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity Study in Rodents)
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Hydrochloric acid (7647-01-0)	
LOAEC (inhalation, rat, gas, 90 days)	50 ppm
NOAEC (inhalation, rat, gas, 90 days)	20 ppm

Potassium chloride (7447-40-7)	
NOAEL (oral, rat, 90 days)	≈ 1820 mg/kg bodyweight Animal: rat, Animal sex: male
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)

2-Mercaptoethanol (60-24-2)	
Viscosity, kinematic	2.9 mm ² /s (20 °C, Calculated)

Sodium chloride (7647-14-5)	
Viscosity, kinematic	Not applicable (solid)

Hydrochloric acid (7647-01-0)	
Viscosity, kinematic	1.491 – 1.754 mm ² /s

Potassium chloride (7447-40-7)	
Viscosity, kinematic	Not applicable (solid)

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Harmful to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long-term (chronic) : Harmful to aquatic life with long lasting effects.

Guanidinium chloride (50-01-1)	
LC50 - Fish [1]	1758 mg/l (DIN 38412-15, 48 h, Leuciscus idus, Experimental value, GLP)

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Guanidinium chloride (50-01-1)	
EC50 - Crustacea [1]	70.2 mg/l (Equivalent or similar to OECD 202, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 72h - Algae [1]	11.8 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	33.5 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
ErC50 algae	33.5 mg/l (EU Method C.3, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)
NOEC (chronic)	2.9 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	≥ 181 mg/l Test organisms (species): Pimephales promelas Duration: '35 d'
2-Mercaptoethanol (60-24-2)	
LC50 - Fish [1]	37 mg/l (DIN 38412-15, 96 h, Leuciscus idus, Static system, Fresh water, Experimental value, Lethal)
EC50 - Crustacea [1]	0.4 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 72h - Algae [1]	19 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
ErC50 algae	19 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)
LOEC (chronic)	0.1264 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	> 0.0632 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic crustacea	> 0.0632 mg/l
Sodium chloride (7647-14-5)	
LC50 - Fish [1]	5840 mg/l (ASTM, 96 h, Lepomis macrochirus, Flow-through system, Fresh water, Experimental value, Lethal)
LOEC (chronic)	441 mg/l Test organisms (species): Daphnia pulex Duration: '21 d'
NOEC (chronic)	314 mg/l Test organisms (species): Daphnia pulex Duration: '21 d'
Potassium chloride (7447-40-7)	
LC50 - Fish [1]	880 mg/l (EPA 600/4-90/027, 96 h, Pimephales promelas, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	440 – 880 mg/l (EPA 600/4-90/027, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 - Other aquatic organisms [1]	440 – 880 mg/l Test organisms (species): other:
EC50 - Other aquatic organisms [2]	580 – 670 mg/l Test organisms (species): other:
EC50 72h - Algae [1]	> 100 mg/l Source: ECHA
ErC50 algae	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Nominal concentration)

12.2. Persistence and degradability

Gliadin Cocktail Solution	
Persistence and degradability	Not rapidly degradable
Guanidinium chloride (50-01-1)	
Persistence and degradability	Not readily biodegradable in water.

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2-Mercaptoethanol (60-24-2)	
Persistence and degradability	Non degradable in the soil, Biodegradable in water.
Biochemical oxygen demand (BOD)	0.105 g O ₂ /g substance
Chemical oxygen demand (COD)	1.894 g O ₂ /g substance
Sodium chloride (7647-14-5)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
Hydrochloric acid (7647-01-0)	
Persistence and degradability	Biodegradability: not applicable.
Potassium chloride (7447-40-7)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
12.3. Bioaccumulative potential	
Guanidinium chloride (50-01-1)	
Partition coefficient n-octanol/water (Log Pow)	< -1.7 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C)
Bioaccumulative potential	Not bioaccumulative.
2-Mercaptoethanol (60-24-2)	
Partition coefficient n-octanol/water (Log Pow)	-0.056 (Experimental value, Equivalent or similar to OECD 107, 25 °C)
Bioaccumulative potential	Not bioaccumulative.
Sodium chloride (7647-14-5)	
Bioaccumulative potential	Not bioaccumulative.
Hydrochloric acid (7647-01-0)	
Partition coefficient n-octanol/water (Log Pow)	0.25 Source: ICSC
Bioaccumulative potential	Does not contain bioaccumulative component(s).
Potassium chloride (7447-40-7)	
Partition coefficient n-octanol/water (Log Pow)	-0.46 Source: OECD Screening Information Data Set
Bioaccumulative potential	Not bioaccumulative.
12.4. Mobility in soil	
Guanidinium chloride (50-01-1)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.358 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil.
2-Mercaptoethanol (60-24-2)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.28 – 0.403 (log Koc, SRC PCKOCWIN v2.0, Calculated value)

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2-Mercaptoethanol (60-24-2)	
Ecology - soil	Highly mobile in soil.
Sodium chloride (7647-14-5)	
Surface tension	73.03 mN/m (23 °C, 14.5 g/l)
Ecology - soil	No (test)data on mobility of the substance available.
Hydrochloric acid (7647-01-0)	
Ecology - soil	No (test)data on mobility of the component(s) available. May be harmful to plant growth, blooming and fruit formation.
Potassium chloride (7447-40-7)	
Ecology - soil	Low potential for adsorption in soil.

12.5. Results of PBT and vPvB assessment

Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	Guanidinium chloride (50-01-1), 2-Mercaptoethanol (60-24-2), Sodium chloride (7647-14-5), Hydrochloric acid (7647-01-0) ⁽¹⁾ , Potassium chloride (7447-40-7) ⁽¹⁾
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	Guanidinium chloride (50-01-1), 2-Mercaptoethanol (60-24-2), Sodium chloride (7647-14-5), Hydrochloric acid (7647-01-0) ⁽¹⁾ , Potassium chloride (7447-40-7) ⁽¹⁾

⁽¹⁾ Substance(s) in concentration below 0.1 % and displayed on a voluntary basis

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional waste regulation	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Disposal must be done according to official regulations.
Additional information	: Do not re-use empty containers.
Ecological waste information	: The waste of the product should be considered as hazardous as the product itself, with the likelihood of impacting the environment in the same way. Consider the handling and disposal of the waste as defined by the product itself.
HP Code	: HP5 - "Specific Target Organ Toxicity (STOT)/Aspiration Toxicity:" waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration. HP14 - "Ecotoxic:" waste which presents or may present immediate or delayed risks for one or more sectors of the environment

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not regulated for transport				

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ADR	IMDG	IATA	ADN	RID
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

14.6. Special precautions for user

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(b)	Gliadin Cocktail Solution ; 2-Mercaptoethanol ; Hydrochloric acid	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
3(c)	Gliadin Cocktail Solution ; 2-Mercaptoethanol	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

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PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (2024/590)

Not listed on the Ozone Depletion list (Regulation EU 2024/590)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 2024/590 on substances that deplete the ozone layer)

Council Regulation (EC) for the control of dual-use items

Contains no substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

Explosives Precursors Regulation (EU 2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (EC 273/2004)

Contains substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

Name	CN designation	CAS-No.	CN code	Category, Subcategory	Threshold	Annex
Hydrochloric acid	Hydrogen chloride	7647-01-0	2806 10 00	Category 3		Annex I

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstracts Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer

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Abbreviations and acronyms:	
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

Full text of H- and EUH-statements:	
Acute Tox. 2 (Dermal)	Acute toxicity (dermal), Category 2
Acute Tox. 2 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 2
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1

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Full text of H- and EUH-statements:	
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Repr. 2	Reproductive toxicity, Category 2
Skin Corr. 1	Skin corrosion/irritation, Category 1
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1A	Skin sensitisation, category 1A
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

The classification complies with : ATP 12

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.