Gliadin Cocktail Solution

Safety Data Sheet

according to the Hazardous Products Regulation (WHMIS 2015)
Issue date: 08-22-2025 Revision date: 05-29-2026 Supersedes: 09-24-2025 Version: 3.0

SECTION 1 Identification

1.1. GHS Product identifier

Product form	: Mixture
Trade name	: Gliadin Cocktail Solution
Type of product	: Food Safety -- [Food Safety]
Product code	: 8483

1.2. Other means of identification

Part Number(s) : 8483|700002583

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture	: Laboratory chemicals,Scientific research and development
Recommended use	: Scientific research and development,Laboratory chemicals

1.4. Supplier's details

Manufacturer
Neogen Corporation
620 Lesher Place
Lansing, Michigan 48912
United States of America
T 800.234.5333
sds@neogen.com - https://www.neogen.com/

1.5. Emergency phone 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)

SECTION 2 Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Serious eye damage/eye irritation, Category 2	H319	Causes serious eye irritation.
Skin sensitization, Category 1	H317	May cause an allergic skin reaction.
Reproductive toxicity, Category 2	H361	Suspected of damaging fertility or the unborn child.
Specific target organ toxicity, Single exposure, Category 2	H371	May cause damage to organs.
Specific target organ toxicity, Repeated exposure, Category 1	H372	Causes damage to organs through prolonged or repeated exposure.
Hazardous to the aquatic environment, Acute Hazard, Category 3	H402	Harmful to aquatic life.
Hazardous to the aquatic environment, Chronic Hazard, Category 3	H412	Harmful to aquatic life with long lasting effects.

Full text of H statements : see section 16

2.2. GHS label elements, including precautionary statements

GHS CA labeling

Hazard pictograms (GHS CA) :

Signal word (GHS CA) : Danger

Hazard statements (GHS CA)	:	H317 - May cause an allergic skin reaction H319 - Causes serious eye irritation H361 - Suspected of damaging fertility or the unborn child H371 - May cause damage to organs. H372 - Causes damage to organs through prolonged or repeated exposure. H402 - Harmful to aquatic life H412 - Harmful to aquatic life with long lasting effects
Precautionary statements (GHS CA)	:	P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P260 - Do not breathe dust, fume, gas, mist, vapors, spray. P264 - Wash hands, forearms and face thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P272 - Contaminated work clothing should not be allowed out of the workplace. P273 - Avoid release to the environment. P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection. P302+P352 - IF ON SKIN: Wash with plenty of water. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308+P311 - IF exposed or concerned: Call a POISON CENTER or a doctor. P308+P313 - IF exposed or concerned: Get medical advice or attention. P314 - Get medical advice or 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 or attention. P337+P313 - If eye irritation persists: Get medical advice or attention. P362+P364 - Take off contaminated clothing and wash it before reuse. P405 - Store locked up. P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

2.3. Other hazards which do not result in classification

No additional information available

SECTION 3 Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
Guanidinium chloride	Guanidine monohydrochloride ; Guanidine hydrochloride aminoformamidine,hydrochloride / aminomethanamidine hydrochloride / carbamidine,hydrochloride / guanadine hydrochloride / guanidine, monohydrochloride / guanidine,chloride / guanidine,monohydrochloride / Guanidinio Cloruro / guanidinium chloride / guanidinium,chloride / guanidinium,hydrochloride / guanidiniumchloride / guanidinium-chloride / guanidinum,hydrochloride / guanidium,chloride / iminourea,hydrochloride / USAF EK749	CAS-No.: 50-01-1	≥ 15 – < 25	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 STOT RE 2, H373 Aquatic Acute 3, H402 Aquatic Chronic 3, H412

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
2-Mercaptoethanol	2-Mercaptoethanol; Mercaptoethanol 1-ethanol-2-thiol / 1-hydroxy-2-mercaptoethane / 1-mercapto-2-hydroxyethane / 2-hydroxy-1-ethanethiol / 2-hydroxyethanethiol / 2-hydroxyethyl mercaptan / 2-ME / 2-mercapto-1-ethanol / 2-mercaptoethanol / 2-mercaptoethyl alcohol / 2-thioethanol / beta-hydroxyethanethiol / beta-hydroxyethylmercaptan / beta-mercaptoethanol / BME / emery 5791 / ethanol, 2-mercapto- / ethylene glycol, monothio- / ethylene thioglycol / hydroxyethyl mercaptan / mercapto-2 ethanol / METH / monothioethylene glycol / monothioglycol / thioethylene glycol / thioglycol / thiomonoglycol / USAF EK-4196	CAS-No.: 60-24-2	≥ 1 – < 5	Flam. Liq. 4, H227 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, H361 STOT SE 2, H371 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

SECTION 4 First-aid measures

4.1. Description of necessary first-aid measures

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/doctor/physician if you feel unwell.
First-aid measures general	:	IF exposed or concerned: Get medical advice/attention.
Personal protection for first-aid responders.	:	First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms/effects, 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 immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	:	Treat symptomatically.

SECTION 5 Fire-fighting measures

5.1. Suitable extinguishing media

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

5.2. Specific hazards arising from the chemical

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. Special protective actions for fire-fighters

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.
Environmental precautions	:	Avoid release to the environment.

6.2. Methods and materials for containment and cleaning up

For containment	:	Collect spillage. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.
Methods for cleaning up	:	Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information	:	Dispose of materials or solid residues at an authorized site.

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. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.
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	:	Store locked up.
Storage temperature	:	2 – 30
Packaging materials	:	Always store product in container of same material as original container.

SECTION 8 Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	:	Ensure good ventilation of the work station.
Environmental exposure controls	:	Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Personal protective equipment:
Wear recommended personal protective equipment.

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
[In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s):

SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Solution.
Color	:	Clear
Odor	:	Unpleasant odour
Odor threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	No data available
Melting point	:	Not applicable
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Not applicable
Vapor pressure	:	No data available
Relative vapor density at 20°C	:	No data available
Relative density	:	No data available
Solubility	:	Soluble in water.
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Viscosity, kinematic	:	No data available
Explosion limits	:	No data available
Particle characteristics	:	No data available

9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

SECTION 10 Stability and reactivity

Reactivity	:	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reactions known under normal conditions of use.
Conditions to avoid	:	None under recommended storage and handling conditions (see section 7).
Incompatible materials	:	No additional information available
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hardening time:	:	No additional information available

SECTION 11 Toxicological information

11.1. Likely routes of exposure

Acute toxicity (oral)	:	Not classified
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified

Guanidinium chloride (50-01-1)	
LD50 oral rat	774 – 907 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 oral	774 mg/kg

Guanidinium chloride (50-01-1)	
LD50 dermal rabbit	> 2000 mg/kg body weight (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
ATE CA (oral)	774 mg/kg body weight
ATE CA (Dermal)	2500 mg/kg body weight
ATE CA (vapors)	5.32 mg/l/4h
ATE CA (dust,mist)	5.319 mg/l/4h

2-Mercaptoethanol (60-24-2)	
LD50 oral rat	98 – 168 mg/kg body weight (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 body weight (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 (Vapors)	2 mg/l/4h
ATE CA (oral)	98 mg/kg body weight
ATE CA (Dermal)	112 mg/kg body weight
ATE CA (Gases)	700 ppmV/4h
ATE CA (vapors)	2 mg/l/4h
ATE CA (dust,mist)	2.03 mg/l/4h

Skin corrosion/irritation : Not classified

Guanidinium chloride (50-01-1)	
pH	4.5 – 6 (57.3 %)

2-Mercaptoethanol (60-24-2)	
pH	4.6 – 6 (50 %)

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 %)

Respiratory or skin sensitization : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

2-Mercaptoethanol (60-24-2)	
NOAEL (animal/male, F0/P)	75 mg/kg body weight 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 body weight 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 : May cause damage to organs.

2-Mercaptoethanol (60-24-2)	
STOT-single exposure	May cause damage to organs.

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 body weight 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 body weight 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 body weight 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.

Aspiration hazard : Not classified

2-Mercaptoethanol (60-24-2)	
Viscosity, kinematic	2.9 mm²/s (20 °C, Calculated)

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.

SECTION 12 Ecological information

12.1. Toxicity

Ecology - general : Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Hazardous to the aquatic environment, short–term (acute) : Harmful to aquatic life.

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)
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)

Guanidinium chloride (50-01-1)	
ErC50 algae	33.5 mg/l (EU Method C.3, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)
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)
NOEC chronic fish	≥ 181 mg/l Test organisms (species): Pimephales promelas Duration: '35 d'
NOEC (chronic)	2.9 mg/l Test organisms (species): Daphnia magna Duration: '21 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)
ErC50 algae	19 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)
EC50 72h - Algae [1]	19 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
NOEC (chronic)	> 0.0632 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic crustacea	> 0.0632 mg/l
LOEC (chronic)	0.1264 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

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.

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

12.3. Bioaccumulative potential

Guanidinium chloride (50-01-1)	
Bioaccumulative potential	Not bioaccumulative.
Partition coefficient n-octanol/water (Log Pow)	< -1.7 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C)

2-Mercaptoethanol (60-24-2)	
Bioaccumulative potential	Not bioaccumulative.
Partition coefficient n-octanol/water (Log Pow)	-0.056 (Experimental value, Equivalent or similar to OECD 107, 25 °C)

12.4. Mobility in soil

Guanidinium chloride (50-01-1)	
Ecology - soil	Highly mobile in soil.
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.358 (log Koc, SRC PCKOCWIN v2.0, Calculated value)

2-Mercaptoethanol (60-24-2)	
Ecology - soil	Highly mobile in soil.
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.28 – 0.403 (log Koc, SRC PCKOCWIN v2.0, Calculated value)

12.5. Other adverse effects

Ozone : Not classified

Fluorinated greenhouse gases : No

SECTION 13 Disposal considerations

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.

SECTION 14 Transport information

In accordance with TDG / DOT / IMDG / IATA

TDG	DOT	IMDG	IATA
14.1. UN Number			
Not regulated for transport			
14.2. UN Proper Shipping Name			
Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)			
Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group, if applicable			
Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards			
Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available			

14.6. Special precautions for user

TDG

Not regulated

DOT
Not regulated

IMDG
Not regulated

IATA
Not regulated

14.7. Transport in bulk according to Annex II of MARPOL 73/78[9] and the IBC Code[10]

Not applicable

SECTION 15 Regulatory information

Guanidinium chloride (50-01-1)
Listed on the Canadian DSL (Domestic Substances List)

2-Mercaptoethanol (60-24-2)	
Listed on the Canadian DSL (Domestic Substances List)	
Canada DSL & NDSL Flags	Significant New Activity (SNAc) provisions of the Act apply

Guanidinium chloride (50-01-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active **Listed on INSQ (Mexican National Inventory of Chemical Substances)**

2-Mercaptoethanol (60-24-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active **Listed on INSQ (Mexican National Inventory of Chemical Substances)**

SECTION 16 Other Information

Issue date : 08-22-2025
Revision date : 05-29-2026
Supersedes : 09-24-2025

Full text of hazard classes and H-statements:	
H227	Combustible liquid
H301	Toxic if swallowed
H302	Harmful if swallowed
H310	Fatal in contact with skin
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H331	Toxic if inhaled
H332	Harmful if inhaled

Full text of hazard classes and H-statements:	
H361	Suspected of damaging fertility or the unborn child
H371	May cause damage to organs.
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
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

Safety Data Sheet (SDS), Canada

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.