Safety Data Sheet

According to Regulation (EC) No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and Commission Delegated Regulation (EU) 2023/707, and (EC) No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878.

Nucleic Acid Prep Buffer

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

1.1 Product identifier

Product Name: Nucleic Acid Prep Buffer
Product code: A00657

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

Relevant identified uses: For Research Use Only.
Uses advised against: Not for Use in Diagnostic Procedures.
Reasons why uses advised against: Not determined or not applicable.

1.3 Details of the manufacturer/supplier of the safety data sheet

Manufacturer:	**Supplier:**
United States	**European Union**
Asuragen, Inc.	Bio-Techne (DRD)
2150 Woodward Street	19 Rue Louis Delourmel
Austin, Texas 78744	35230, Noyal Châtillon sur Seiche
+1 512-681-5200	+33.2.99.35.19.36

1.4 Emergency telephone number:

European Union
Bio-Techne (DRD)
+33.2.99.35.19.36 (Normal business hours)

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture:

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

Flammable liquids, category 2
Acute toxicity (oral), category 4
Skin irritation, category 2
Eye Irritation, category 2

Hazard-determining components of labeling:

Ethanol
Guanidinium chloride

Additional Information: None

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)
Hazard pictograms:

Signal Word: Danger
Hazard statements:

H225 Highly flammable liquid and vapour
H302 Harmful if swallowed
H315 Causes skin irritation
H319 Causes serious eye irritation

Precautionary statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233 Keep container tightly closed
P240 Ground and bond container and receiving equipment
P241 Use explosion-proof ventilating equipment
P242 Use non-sparking tools
P243 Take action to prevent static discharges
P264 Wash any exposed skin thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P280 Wear protective gloves, protective clothing and eye protection
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
P332+P313 If skin irritation occurs: Get medical advice or attention
P321 Specific treatment (see Sections 4-8 of this SDS and any supplemental information on the product label)
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337+P313 If eye irritation persists: Get medical advice or attention
P301+P312 IF SWALLOWED: Call a doctor if you feel unwell
P330 Rinse mouth
P370+P378 In case of fire: Use water spray, carbon dioxide, dry chemical or foam to extinguish
P403+P235 Store in a well-ventilated place. Keep cool
P501 Dispose of contents and container in accordance with local, regional, national, and international regulations

2.3 Other hazards: None known

SECTION 3: Composition/information on ingredients

3.1 Substance: Not applicable.

3.2 Mixture:

Identification	EU REACH Registration No.	Name	Classification according to Regulation (EC) No. 1272/2008 (CLP)	Weight %
CAS number: 64-17-5 EC number: 200-578-6	–	Ethanol	Flam. Liq. 2; H225 Eye Irrit. 2; H319	>50
CAS number: 50-01-1 EC number: 200-002-3	–	Guanidinium chloride	Skin Irrit. 2; H315 Acute Tox. 4 (Oral); H302 Acute Tox. 4 (Inh); H332 Eye Irrit. 2; H319	25-50

Additional information: None
Full Text of H and EUH statements: See section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes:

Show this Safety Data Sheet to the doctor in attendance.

Following inhalation:

If inhaled, remove person to fresh air and place in a position comfortable for breathing. Keep person at rest. If breathing is difficult, administer oxygen. If breathing has stopped, provide artificial respiration. If experiencing respiratory symptoms, seek medical advice/attention.

Following skin contact:

Remove contaminated clothing and shoes. Rinse skin with copious amounts of water [shower] for several minutes. Launder contaminated clothing before reuse. If symptoms develop or persist, seek medical advice/attention.

Following eye contact:

Rinse eyes with plenty of gently flowing lukewarm water for 15 minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. If symptoms develop or persist, seek medical advice/attention.

Following ingestion:

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. If symptoms develop or persist, seek medical advice/attention.

Self-Protection of the first aider:

Take precautions to ensure your own safety before attempting rescue. Wear appropriate safety eyewear, gloves, protective clothing and respiratory protection to prevent exposure. See Section 8 of this SDS for personal protective equipment recommendations.

4.2 Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:

Skin contact may result in redness, pain, burning and inflammation. Prolonged skin contact will defat the skin, which may cause dryness or cracking.

Eye contact may result in irritation, redness, pain, inflammation, itching, burning and tearing.

Acute oral exposure may lead to dizziness, drowsiness, headache, breathing difficulties, nausea, vomiting, abdominal pain, and lowering of consciousness. Adverse effects are dependent on exposure (dose, concentration, contact time).

Delayed symptoms and effects:

Symptoms of exposure may be delayed.

4.3 Indication of any immediate medical attention and special treatment needed

Specific treatment:

Accidental ingestion requires immediate medical attention/treatment.

Notes for the doctor:

Treat symptomatically. Symptoms of exposure may be delayed. Therefore, medical observation is indicated.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Dry chemical, CO2, water spray or alcohol-resistant foam.

Unsuitable extinguishing media:

Do not use water jet.

5.2 Special hazards arising from the substance or mixture:

Highly flammable liquid. Will be easily ignitable by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor

explosion hazard indoors, outdoors or in sewers. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Inhalation or contact with material may irritate or burn skin and eyes. Fire may produce irritating, corrosive and/or toxic gases including carbon oxides, hydrogen chloride and nitrogen oxides. Vapors may cause dizziness or suffocation.

5.3 Advice for firefighters

Personal protection equipment:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode.

Special precautions:

Evacuate non-essential personnel. Ventilate closed spaces before entering. Consider initial evacuation for 300 meters in all directions. If tank/rail car is involved in the fire, ISOLATE for 800 meters in all directions. Fight fire from a maximum distance. Move containers from fire area if you can do it without risk. Use water spray/fog for cooling fire exposed containers. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles. If this is impossible, withdraw from area and let fire burn. Stand by, at a safe distance, with extinguisher ready for possible re-ignition. A vapor-suppressing foam may be used to reduce vapors. Avoid unnecessary run-off of extinguishing media which may cause pollution. Do not handle damaged containers unless specialized to do so.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Evacuate unnecessary personnel. Ventilate area. Extinguish any sources of ignition. All equipment used when handling the product must be grounded. Wear recommended personal protective equipment (see Section 8). Avoid contact with skin, eyes and clothing. Avoid breathing mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling.

6.2 Environmental precautions:

Prevent further leakage or spillage if safe to do so. Prevent from reaching drains, sewers and waterways. Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up:

Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. A vapor-suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

6.4 Reference to other sections:

For personal protective equipment see Section 8. For disposal see Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating and lighting equipment. Take action to prevent static discharges. Handle containers with caution. Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

7.2 Conditions for safe storage, including any incompatibilities:

Store in cool, dry, well-ventilated location out of direct sunlight. Keep away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Keep container tightly sealed. Store away from incompatible materials (See Section 10).

7.3 Specific end use(s):

Refer to Section 1 (Recommended Use).

SECTION 8: Exposure controls/personal protection



8.1 Control parameters

Only those substances with limit values have been included below.

Occupational Exposure limit values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
Austria	Ethanol	64-17-5	Ceiling Limit: 3800 mg/m³ ([2000 ppm])
	Ethanol	64-17-5	MAK TWA: 1900 mg/m³ ([1000 ppm])
Belgium	Ethanol	64-17-5	8-Hour TWA: 1907 mg/m³ ([1000 ppm])
Bulgaria	Ethanol	64-17-5	TWA: 1000 mg/m³
Croatia	Ethanol	64-17-5	8-Hour TWA: 1900 mg/m³ ([1000 ppm])
Czech Republic	Ethanol	64-17-5	Ceiling Limit: 3000 mg/m³
	Ethanol	64-17-5	TWA: 1000 mg/m³
Denmark	Ethanol	64-17-5	TWA: 1900 mg/m³ ([1000 ppm])
	Ethanol	64-17-5	STEL: 3800 mg/m³ ([2000 ppm])
Estonia	Ethanol	64-17-5	15-Minute STEL: 1900 mg/m³ ([1000 ppm])
	Ethanol	64-17-5	8-Hour TWA: 1000 mg/m³ ([500 ppm])
Finland	Ethanol	64-17-5	15-Minute STEL: 2500 mg/m³ ([1300 ppm])
	Ethanol	64-17-5	8-Hour TWA-PEL: 1900 mg/m³ ([1000 ppm])
France	Ethanol	64-17-5	15-Minute STEL: 9500 mg/m³ (5000 ppm; [Indicative])
	Ethanol	64-17-5	TWA: 1900 mg/m³ (1000 ppm; [Indicative])
Germany (MAK)	Ethanol	64-17-5	8-Hour TWA: 380 mg/m³ ([200 ppm])
Germany (TRGS 900)	Ethanol	64-17-5	Limit Value: 380 mg/m³ ([200 ppm])
Greece	Ethanol	64-17-5	8-Hour TWA: 1900 mg/m³ ([1000 ppm])
Hungary	Ethanol	64-17-5	15-Minute STEL: 3800 mg/m³
	Ethanol	64-17-5	8-Hour TWA: 1900 mg/m³
Ireland	Ethanol	64-17-5	15-Minute STEL: 1000 ppm
Italy	Ethanol	64-17-5	15-Minute STEL: 1000 ppm

Country (Legal Basis)	Substance	Identifier	Permissible concentration
Latvia	Ethanol	64-17-5	8-Hour TWA: 1000 mg/m³
Lithuania	Ethanol	64-17-5	15-Minute STEL: 1900 mg/m³ ([1000 ppm])
	Ethanol	64-17-5	8-Hour TWA: 1000 mg/m³ ([500 ppm])
Poland	Ethanol	64-17-5	8-Hour TWA: 1900 mg/m³
Portugal	Ethanol	64-17-5	8-Hour TWA: 1000 ppm
Romania	Ethanol	64-17-5	15-Minute STEL: 9500 mg/m³ ([5000 ppm])
	Ethanol	64-17-5	8-Hour TWA: 1900 mg/m³ ([1000 ppm])
Slovakia	Ethanol	64-17-5	15-Minute STEL: 1920 mg/m³ ([1000 ppm])
	Ethanol	64-17-5	8-Hour TWA: 960 mg/m³ ([500 ppm])
Spain	Ethanol	64-17-5	15-Minute STEL: 1910 mg/m³ ([1000 ppm])
Sweden	Ethanol	64-17-5	Level Limit Value: 1000 mg/m³ ([500 ppm])
	Ethanol	64-17-5	STEL: 1900 mg/m³ ([1000 ppm])
The Netherlands	Ethanol	64-17-5	15-Minute STEL: 1900 mg/m³ ([1000 ppm])
	Ethanol	64-17-5	8-Hour TWA: 260 mg/m³ ([137 ppm])
United Kingdom	Ethanol	64-17-5	8-Hour TWA: 1920 mg/m³ ([1000 ppm])
Slovenia	Ethanol	64-17-5	8-Hour TWA: 960 mg/m³ ([500 ppm])
	Ethanol	64-17-5	15-Minute STEL: 1920 mg/m³ ([1000 ppm])

Biological limit values:

No biological exposure limits noted for the ingredient(s).

Derived No Effect Level (DNEL):

Ingredient Name: Ethanol

CAS #: 64-17-5

Workers - Systemic Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	380 mg/m³
	Chronic - Dermal	No hazard identified

Workers - Local Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	No hazard identified
General Population - Systemic Effects	Acute - Oral	No hazard identified
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	No hazard identified
	Chronic - Inhalation	114 mg/m³
	Chronic - Dermal	No hazard identified
General Population - Local Effect	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	No hazard identified

Ingredient Name: Guanidinium chloride
CAS #: 50-01-1

Workers - Systemic Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	10.5 mg/m³
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	3.5 mg/m³
	Chronic - Dermal	1 mg/kg bw/day
Workers - Local Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	Hazard identified but no DNEL available
	Acute - Dermal	Hazard identified but no DNEL available
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	Hazard identified but no DNEL available
	Chronic - Dermal	Hazard identified but no DNEL available
General Population - Systemic Effects	Acute - Oral	Hazard identified but no DNEL available
	Acute - Inhalation	Hazard identified but no DNEL available
	Acute - Dermal	No hazard identified
	Chronic - Oral	0.5 mg/kg bw/day
	Chronic - Inhalation	0.87 mg/m³
	Chronic - Dermal	0.5 mg/kg bw/day

General Population - Local Effect	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	Hazard identified but no DNEL available
	Acute - Dermal	Hazard identified but no DNEL available
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	Hazard identified but no DNEL available
	Chronic - Dermal	Hazard identified but no DNEL available

Predicted No Effect Concentration (PNEC):

Ingredient Name: Ethanol

CAS #: 64-17-5

Environmental Protection Target	PNEC
Fresh water	0.96 mg/L
Freshwater sediments	3.6 mg/kg sediment dw
Marine water	0.79 mg/L
Marine sediments	2.9 mg/kg sediment dw
Microorganisms in sewage treatment	580 mg/L
Soil (agricultural)	0.63 mg/kg soil dw
Air	No hazard identified
Oral (Secondary Poisoning)	380 mg/kg food

Ingredient Name: Guanidinium chloride

CAS #: 50-01-1

Environmental Protection Target	PNEC
Fresh water	No hazard identified
Freshwater sediments	No hazard identified
Marine water	No hazard identified
Marine sediments	No hazard identified
Microorganisms in sewage treatment	No hazard identified
Soil (agricultural)	No hazard identified
Air	No hazard identified
Oral (Secondary Poisoning)	No exposure expected

Information on monitoring procedures:

Not determined or not applicable.

8.2 Exposure controls

Appropriate engineering controls:

Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

Personal protection equipment

Eye and face protection:

Safety glasses or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

Skin and body protection:

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves. Appropriate techniques should be used to remove used gloves and contaminated clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a

specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent).

Respiratory protection:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

General hygienic measures:

When handling chemical products, do not eat, drink or smoke. Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Perform routine housekeeping.

Environmental exposure controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Product (substance / mixture) related measures to prevent exposure:	Not determined or not applicable.
Instruction measures to prevent exposure:	Not determined or not applicable.
Organisational measures to prevent exposure:	Not determined or not applicable.
Technical measures to prevent exposure:	Not determined or not applicable.

Risk management measures to control exposure:

Not determined or not applicable.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Color	Yellow tint
Odor/Odor threshold	Odourless
pH	Not determined or not available.
Melting point/freezing point	Not determined or not available.
Initial boiling point/range	Not determined or not available.
Flash point (closed cup)	13 °C
Flammability	Not determined or not available.
Upper flammability/explosive limit	15 Vol %
Lower flammability/explosive limit	3.5 Vol %
Vapor pressure	59 hPa
Relative vapor density	Not determined or not available.
Density	Not determined or not available.
Relative density	Not determined or not available.
Solubilities	Water: Fully miscible
Partition coefficient (n-octanol/water)	Not determined or not available.
Auto/Self-ignition temperature	425 °C
Decomposition temperature	Not determined or not available.
Kinematic viscosity	Not determined or not available.
Particle characteristics	Not determined or not available.

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Explosives	No data available/Not applicable
Flammable gases	No data available/Not applicable
Aerosols	No data available/Not applicable
Oxidizing gases	No data available/Not applicable
Gases under pressure	No data available/Not applicable
Flammable liquids	Highly flammable liquid and vapour.
Flammable solids	No data available/Not applicable
Self-reactive substances and mixtures	No data available/Not applicable
Pyrophoric liquids	No data available/Not applicable
Pyrophoric solids	No data available/Not applicable
Self-heating substances and mixtures	No data available/Not applicable
Substances and mixtures, which emit flammable gases in contact with water	No data available/Not applicable
Oxidizing liquids	No data available/Not applicable
Oxidizing solids	No data available/Not applicable
Organic peroxides	No data available/Not applicable
Corrosive to metals	No data available/Not applicable
Desensitized explosives	No data available/Not applicable

9.2.2 Other safety characteristics

Organic solvent	80.0 %
VOC	80.0 %

SECTION 10: Stability and reactivity

10.1 Reactivity:
Not reactive under recommended handling and storage conditions.

10.2 Chemical stability:
Stable under recommended handling and storage conditions.

10.3 Possibility of hazardous reactions:
Ethanol reacts slowly with calcium hypochlorite, silver oxide and ammonia. This generates fire and explosion hazard. Ethanol reacts violently with strong oxidants such as nitric acid, silver nitrate, mercuric nitrate and magnesium perchlorate. This generates fire and explosion hazard.

10.4 Conditions to avoid:
Extreme heat, open flames, hot surfaces, sparks, ignition sources, static electricity and incompatible materials. Vapor accumulation in low or confined areas.

10.5 Incompatible materials:
Strong oxidizers, Silver oxide, Ammonia

10.6 Hazardous decomposition products:
Hazardous combustion products include carbon oxides, hydrogen chloride and nitrogen oxides.

SECTION 11: Toxicological information

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

Acute toxicity

Assessment:

Harmful if swallowed.

Product data:

Route	Result
Oral ATE	LD50 Rat: 949 mg/kg
Inhalation ATE	LC50 Rat: 6.36 mg/L (4hr [Aerosol])

Substance data:

Name	Route	Result
Ethanol	oral	LD50 Rat: 10,470 mg/kg
	inhalation	LC50 Rat: 116.9 mg/L (4 hr [vapor])
	dermal	LD50 Rabbit: 17,100 mg/kg
Guanidinium chloride	oral	LD50 Rat: 475 mg/kg
	inhalation	LC50 Rat: 3.181 mg/L (4 hr [aerosol])
	dermal	LD50 Rabbit: >2000 mg/kg

Skin corrosion/irritation

Assessment:

Causes skin irritation.

Product data:

No data available.

Substance data:

Name	Result
Guanidinium chloride	Causes skin irritation.

Serious eye damage/irritation

Assessment:

Causes serious eye irritation.

Product data:

No data available.

Substance data:

Name	Result
Ethanol	Causes serious eye irritation.
Guanidinium chloride	Causes serious eye irritation.

Respiratory or skin sensitization

Assessment: Based on available data, the classification criteria are not met.

Product data:

No data available.

Substance data: No data available.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

International Agency for Research on Cancer (IARC): None of the ingredients are listed.

Germ cell mutagenicity

Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data: No data available.

Reproductive Toxicity
Assessment: Based on available data, the classification criteria are not met.
Product data:
No data available.
Substance data: No data available.

Specific target organ toxicity (single exposure)
Assessment: Based on available data, the classification criteria are not met.
Product data:
No data available.
Substance data: No data available.

Specific target organ toxicity (repeated exposure)
Assessment: Based on available data, the classification criteria are not met.
Product data:
No data available.
Substance data: No data available.

Aspiration toxicity
Assessment: Based on available data, the classification criteria are not met.
Product data:
No data available.
Substance data: No data available.

Endocrine disrupting properties:
Assessment: Based on available data, the classification criteria are not met.
Product data:
No data available.
Substance data: No data available.

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

Symptoms related to the physical, chemical and toxicological characteristics:
See section 4 of this SDS.

11.2 Information on other hazards

Other information:
No data available.

SECTION 12: Ecological information

12.1 Toxicity

Acute (short-term) toxicity
Assessment: Based on available data, the classification criteria are not met.
Product data: No data available
Substance data:

Name	Result
Ethanol	Fish LC50 Pimephales promelas: 15,300 mg/L (96 hr)
	Aquatic Invertebrates LC50 Daphnia magna: >10,000 mg/L (48 hr [mobility])
	Aquatic Plants EC50 Chlorella vulgaris: 275 mg/L (72 hr [growth rate])
	Bacteria LC50 Paramaecium caudatum: 5,800 mg/L (4 hr)
Guanidinium chloride	Fish LC50 Pimephales promelas: 690 mg/L (96 hr)
	Aquatic Invertebrates EC50 Daphnia magna: 70.2 mg/L (48 hr [mobility])
	Aquatic Plants EC50 Raphidocelis subcapitata: 11.8 mg/L (72hr [cell number])

Chronic (long-term) toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available

Substance data:

Name	Result
Ethanol	Aquatic Invertebrates NOEC Daphnia Magna: 9.6 mg/L (10 d [reproduction])
	Fish NOEC Danio rerio: 250 mg/L (5 d)
Guanidinium chloride	Fish NOEC Pimephales promelas: >= 181 mg/L (35 days)
	Aquatic Invertebrates NOEC Daphnia magna: 2.9 mg/L (21 days)

12.2 Persistence and degradability

Product data: No data available

Substance data:

Name	Result
Ethanol	The substance is readily biodegradable. 84% degradation measured by O2 consumption, after 20 days.
Guanidinium chloride	The substance is inherently biodegradable.

12.3 Bioaccumulative potential

Product data: No data available

Substance data:

Name	Result
Ethanol	The substance is not expected to bioaccumulate in organisms (estimated BCF: 3).
Guanidinium chloride	The substance has low potential for bioaccumulation. BCF (aquatic species): 3.2 L/kg ww.

12.4 Mobility in soil

Product data: No data available

Substance data:

Name	Result
Ethanol	The substance is highly mobile; therefore, adsorption to soil is not expected (log Koc: 0.2).

12.5 Persistent, bioaccumulative and toxic (PBT) or very persistent, very bioaccumulative (vPvB) properties

PBT Properties

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available

Substance data:

Ethanol	The substance is not PBT.
Guanidinium chloride	The substance is not PBT.

vPvB Properties

Assessment: Based on available data, the classification criteria are not met.
Product data: No data available
Substance data:

Ethanol	The substance is not vPvB.
Guanidinium chloride	The substance is not vPvB.

12.6 Persistent, mobile and toxic (PMT) or very persistent, very mobile (vPvM) properties

PMT Properties

Assessment: Based on available data, the classification criteria are not met.
Product data: No data available
Substance data: No data available

vPvM Properties

Assessment: Based on available data, the classification criteria are not met.
Product data: No data available
Substance data: No data available

12.7 Endocrine disrupting properties

Assessment: Based on available data, the classification criteria are not met.
Product data:
No data available
Substance data: No data available

12.8 Other adverse effects: No data available.

12.9 Hazard to the ozone layer

Assessment: Based on available data, the classification criteria are not met.
Product data: No data available
Substance data: No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

13.1.1 Product / Packaging disposal:
Dispose of in accordance with all applicable local, regional, state and federal regulations.

Waste codes / waste designations according to LoW: Not determined or not available.

13.1.2 Waste treatment-relevant information: Not determined or not available.

13.1.3 Sewage disposal-relevant information: Not determined or not available.

13.1.4 Other disposal recommendations: It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities

SECTION 14: Transport information

International Carriage of Dangerous Goods by Road/Rail (ADR/RID)

UN number or ID number	UN 1170
UN proper shipping name	ETHYL ALCOHOL SOLUTION
UN transport hazard class(es)	3 

Packing group	II
Environmental hazards	None
Special precautions for user	None
Classification code	F1
Tank code	LGBF
Transport category	2
Tunnel restriction code	2 (D/E)
Hazard identification	33
Excepted quantities	E2
Limited quantity	1L

International Carriage of Dangerous Goods by Inland Waterways (ADN)

UN number or ID number	UN 1170
UN proper shipping name	ETHYL ALCOHOL SOLUTION
UN transport hazard class(es)	3 
Packing group	II
Environmental hazards	None
Special precautions for user	None
Excepted quantities	E2
Limited quantity	1L

International Maritime Dangerous Goods (IMDG)

UN number or ID number	UN 1170
UN proper shipping name	ETHYL ALCOHOL SOLUTION
UN transport hazard class(es)	3 
Packing group	II
Environmental hazards	None
Special precautions for user	None
EMS number	F-E, S-D
Stowage category	Category A
Excepted quantities	E2
Limited quantity	1L

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN number or ID number	UN 1170
UN proper shipping name	Ethyl alcohol solution
UN transport hazard class(es)	3 
Packing group	II
Environmental hazards	None

Special precautions for user	None
ERG code	3L
Excepted quantities	E2
Passenger and cargo	5L
Cargo aircraft only	60L
Limited quantity	1L

Maritime Transport in Bulk according to IMO Instruments

Bulk Name	None
Ship type	None
Pollution category	None
IMO hazard class	None
Environmental hazards	None
Material hazardous only in bulk	None
Cargo Group	None

SECTION 15: Regulatory information

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

European regulations

Inventory listing (EINECS): All ingredients are listed or exempt.

REACH SVHC candidate list: None of the ingredients are listed.

REACH SVHC Authorizations: None of the ingredients are listed.

REACH Restriction: None of the ingredients are listed.

Water hazard class (WGK) (Product): Not determined.

Water hazard class (WGK) (Substance):

Ingredient Name	CAS	Class
Ethanol	64-17-5	Water hazard class 1: slightly hazardous to water
Guanidinium chloride	50-01-1	Water hazard class 1: slightly hazardous to water

Other regulations

Germany TA Luft: None of the ingredients are listed.

Additional information: Not determined.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: Other information

Abbreviations and Acronyms: None

Classification procedure:

Classification according to Regulation (EC) No. 1272/2008 (CLP)	Method Used
Flammable liquids, category 2	Calculation method
Acute toxicity (oral), category 4	Calculation method
Skin irritation, category 2	Calculation method
Eye Irritation, category 2	Calculation method

Summary of classification(s) in section 3:

Flam. Liq. 2	Flammable liquids, category 2
Eye Irrit. 2	Eye Irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
Acute Tox. 4 (Oral)	Acute toxicity (oral), category 4
Acute Tox. 4 (Inh)	Acute toxicity (inhalation), category 4

Summary of hazard statements in section 3:

H225	Highly flammable liquid and vapour
H319	Causes serious eye irritation
H315	Causes skin irritation
H302	Harmful if swallowed
H332	Harmful if inhaled

Disclaimer:

This product has been classified in accordance with EC No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and Commission Delegated Regulation (EU) 2023/707, and EC No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation, and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

Initial preparation date: 2025-04-01

End of Safety Data Sheet