

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 30.04.2025

Version number 1

Revision: 30.04.2025

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

- **1.1 Product identifier**
- **Trade name:** Laemmli Sample Buffer 4X
- **Product Code:** 20-8904-001
- **Registration number** Mixture
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Product category** PC21 Laboratory chemicals
- **Application of the substance / the mixture** Laboratory chemicals
- **Uses advised against** Any use not specified above.
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Severn Biotech Ltd.
Unit 2,
Park Lane,
Kidderminster,
Worcestershire.
DY11 6TJ
UK
Tel: 0044 1562 825286
Fax: 0044 1562 825284
email: info@severnbiotech.com
- **Further information obtainable from:** Product safety department.
- **1.4 Emergency telephone number:**
Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to GB-CLP**

Acute Tox. 4	H302 Harmful if swallowed.
Acute Tox. 4	H312 Harmful in contact with skin.
Acute Tox. 4	H332 Harmful if inhaled.
Skin Irrit. 2	H315 Causes skin irritation.
Eye Dam. 1	H318 Causes serious eye damage.
Skin Sens. 1	H317 May cause an allergic skin reaction.
Repr. 2	H361f Suspected of damaging fertility.
STOT RE 2	H373 May cause damage to the liver and the heart through prolonged or repeated exposure.
Aquatic Chronic 3	H412 Harmful to aquatic life with long lasting effects.

- **2.2 Label elements**
- **Labelling according to GB-CLP** The product is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**



GHS05 GHS07 GHS08

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- **Signal word** Danger
- **Hazard-determining components of labelling:**
 - 2-mercaptoethanol
 - Sodium dodecyl sulphate
- **Hazard statements**
 - H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
 - H315 Causes skin irritation.
 - H318 Causes serious eye damage.
 - H317 May cause an allergic skin reaction.
 - H361f Suspected of damaging fertility.
 - H373 May cause damage to the liver and the heart through prolonged or repeated exposure.
 - H412 Harmful to aquatic life with long lasting effects.
- **Precautionary statements**
 - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P310 Immediately call a POISON CENTER/doctor.
 - P330 Rinse mouth.
 - P362+P364 Take off contaminated clothing and wash it before reuse.
 - P405 Store locked up.
 - P501 Dispose of contents/container in accordance with local regulations.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 56-81-5 EINECS: 200-289-5 Reg.nr.: 01-2119471987-18-XXXX	Glycerol substance with a Community workplace exposure limit	10 – 25%
CAS: 60-24-2 EINECS: 200-464-6 Reg.nr.: 01-2119517582-41-XXXX	2-mercaptoethanol ⚠ Acute Tox. 3, H301; Acute Tox. 2, H310; Acute Tox. 3, H331; ⚠ Repr. 2, H361f; STOT RE 2, H373; ⚠ Eye Dam. 1, H318; ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Skin Sens. 1A, H317	10%
CAS: 151-21-3 EINECS: 205-788-1 Reg.nr.: 01-2119489461-32-XXXX	Sodium dodecyl sulphate ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Aquatic Chronic 3, H412 Specific concentration limits: Eye Dam. 1; H318: $C \geq 20\%$ Eye Irrit. 2; H319: $10\% \leq C < 20\%$	2.5 – < 10%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

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SECTION 4: First aid measures

· 4.1 Description of first aid measures

· General information:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.

May be absorbed through the skin. Seek medical advice.

· After eye contact:

Check for and remove any contact lenses.

Rinse opened eye for several minutes under running water. Then consult a doctor.

· After swallowing:

Rinse out mouth and then drink plenty of water.

If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Take to a hospital immediately.

· Information for doctor: Treat symptomatically and supportively.

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

Allergic reactions

Nausea

Breathing difficulty

Coughing

Headache

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

No further relevant information available.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media

· Suitable extinguishing agents:

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Use fire extinguishing methods suitable to surrounding conditions.

· For safety reasons unsuitable extinguishing agents: Water with full jet

· 5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Sulphur Oxides (SO_x)

· 5.3 Advice for firefighters

· Protective equipment:

Wear fully protective suit.

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

· Additional information

Cool endangered receptacles with water spray.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

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SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Particular danger of slipping on leaked/spilled product.
- **6.2 Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Do not allow to penetrate the ground/soil.
Inform respective authorities in case of seepage into water course or sewage system.
- **6.3 Methods and material for containment and cleaning up:**
Contain and collect spillage with non-combustible, absorbent material e.g.sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.
Contaminated absorbent material may pose the same hazard as the spilt product.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Prevent any seepage into the ground.
- **Information about storage in one common storage facility:** Store away from oxidising agents.
- **Further information about storage conditions:** Store at -20 °C
- **Storage class:** 10
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· **Ingredients with limit values that require monitoring at the workplace:**

CAS: 56-81-5 Glycerol

WEL Long-term value: 10 mg/m³

· **DNELs**

CAS: 60-24-2 2-mercaptoethanol

Oral	Long-term systemic effects	25 µg/kg bw/day (general population)
	Short-term systemic effects	25 µg/kg bw/day (general population)
Dermal	Long-term systemic effects	50 µg/kg bw/day (worker)

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Inhalative	Short-term systemic effects	50 µg/kg bw/day (worker)
	Long-term systemic effects	170 µg/m³ (worker)
	Short-term systemic effects	170 µg/m³ (worker)
CAS: 151-21-3 Sodium dodecyl sulphate		
Oral	Long-term systemic effects	24 mg/kg bw/day (general population)
Dermal	Long-term systemic effects	2,440 mg/kg bw/day (general population)
		4,060 mg/kg bw/day (worker)
Inhalative	Long-term systemic effects	85 mg/m³ (general population)
		285 mg/m³ (worker)

· PNECs

CAS: 60-24-2 2-mercaptoethanol

Freshwater	6.32 µg/L
Freshwater - Intermittent releases	4 µg/L
Marine water	632 ng/L
Sewage Treatment Plant	60 mg/L
Sediment (freshwater)	24 µg/kg
Sediment (marine water)	2.4 µg/kg
Soil	908 µg/kg

CAS: 151-21-3 Sodium dodecyl sulphate

Freshwater	176 µg/L
Freshwater - Intermittent releases	55 µg/L
Marine water	17.6 µg/L
Sewage Treatment Plant	1.35 mg/L
Sediment (freshwater)	6.97 mg/kg
Sediment (marine water)	697 µg/kg
Soil	1.29 mg/kg

· **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

Avoid contact with the eyes and skin.

Pregnant women should strictly avoid inhalation or skin contact.

A safe system of work must be formulated and followed to ensure safe working with this product. Relevant workers must receive suitable and sufficient training and supervision.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Do not eat, drink, smoke or sniff while working.

Take note of assigned Workplace Exposure Limits.

· **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.

· **Hand protection**



Protective gloves.

Use gloves tested and approved under appropriate government standards such as NIOSH (US) or EN374 (EU).

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Nitrile rubber, NBR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

Break-through time: > 120 minutes

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye/face protection**



Safety glasses with side-shields conforming to EN166.

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

· **Body protection:**



Protective work clothing

Body protection must be chosen depending on product properties, activity and possible exposure.

· **Environmental exposure controls** Do not allow to enter drains, sewers or watercourses.

· **Risk management measures** The operators shall be instructed adequately.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· Physical state	Liquid
· Colour:	Blue
· Odour:	Characteristic

· **Odour threshold:**

60-24-2	2-mercaptoethanol	0.4-2 ppm
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· Melting point/freezing point:	< -30 °C
· Boiling point or initial boiling point and boiling range	100 °C
· Flammability	Not applicable.
· Lower and upper explosion limit	
· Lower:	Not determined.
· Upper:	Not determined.
· Flash point:	> 100 °C
· Decomposition temperature:	Not determined.
· pH at 20 °C	6.8
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic:	Not determined.
· Solubility	
· water:	Fully miscible.
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure:	Not determined.

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· Density and/or relative density	
· Density at 20 °C:	1.01 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· 9.2 Other information	
· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not self-igniting.
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· VOC (EC)	0.00 %
· Change in condition	
· Evaporation rate	Not determined.
· Information with regard to physical hazard classes	
· Explosives	Not applicable
· Flammable gases	Not applicable
· Aerosols	Not applicable
· Oxidising gases	Not applicable
· Gases under pressure	Not applicable
· Flammable liquids	Not applicable
· Flammable solids	Not applicable
· Self-reactive substances and mixtures	Not applicable
· Pyrophoric liquids	Not applicable
· Pyrophoric solids	Not applicable
· Self-heating substances and mixtures	Not applicable
· Substances and mixtures, which emit flammable gases in contact with water	Not applicable
· Oxidising liquids	Not applicable
· Oxidising solids	Not applicable
· Organic peroxides	Not applicable
· Corrosive to metals	Not applicable
· Desensitised explosives	Not applicable

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts violently with oxidising agents.
- **10.4 Conditions to avoid** Heat and static discharge.
- **10.5 Incompatible materials:** Strong acids and oxidising agents
- **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Sulphur oxides (SO_x)

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SECTION 11: Toxicological information

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

· Acute toxicity

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

· LD/LC50 values relevant for classification:

ATE (Acute Toxicity Estimates)

Oral	LD50	919.9 – 1,510.8 mg/kg (rat)
Dermal	LD50	1,120 – 2,240 mg/kg (rabbit)
Inhalative	LC50/4 h	20 mg/l (rat)

CAS: 56-81-5 Glycerol

Oral	LD50	> 20,000 mg/kg (rat)
Dermal	LD50	> 10,000 mg/kg (rabbit)
Inhalative	LC50/4 h	> 2.75 mg/l (rat)

CAS: 60-24-2 2-mercaptoethanol

Oral	LD50	98 – 168 mg/kg (rat)
Dermal	LD50	112 – 224 mg/kg (rabbit)
Inhalative	LC50/4 h	2 mg/l (rat)

CAS: 151-21-3 Sodium dodecyl sulphate

Oral	LD50	1,200 mg/kg (rat)
Dermal	LD50	> 2,000 mg/kg (rabbit)

· Primary irritant effect:

· Skin corrosion/irritation

Causes skin irritation.

· Serious eye damage/irritation

Causes serious eye damage.

· Respiratory or skin sensitisation

May cause an allergic skin reaction.

· Germ cell mutagenicity Based on available data, the classification criteria are not met.

· Carcinogenicity Based on available data, the classification criteria are not met.

· Reproductive toxicity

Suspected of damaging fertility.

· STOT-single exposure Based on available data, the classification criteria are not met.

· STOT-repeated exposure

May cause damage to the liver and the heart through prolonged or repeated exposure.

· Aspiration hazard Based on available data, the classification criteria are not met.

· Additional toxicological information: Repeated or prolonged skin contact may induce sensitisation.

· 11.2 Information on other hazards

· Endocrine disrupting properties

None of the ingredients are listed.

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SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

CAS: 56-81-5 Glycerol

EC50 (96 h) > 10,000 mg/l (Bacteria)

CAS: 60-24-2 2-mercaptoethanol

EC50 (72 h) 19 mg/l (algae)

CAS: 151-21-3 Sodium dodecyl sulphate

EC50 (72 h) 53 – 120 mg/l (aquatic algae and cyanobacteria)

· 12.2 Persistence and degradability biodegradable

· 12.3 Bioaccumulative potential Product is not expected to bioaccumulate.

· 12.4 Mobility in soil No further relevant information available.

· 12.5 Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

· 12.6 Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.

· 12.7 Other adverse effects

· Additional ecological information:

· General notes:

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Recommended Hierarchy of Controls:

- Minimise waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact waste processors for recycling information.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

Do not mix with other waste streams.

· Uncleaned packaging:

· Recommendation:

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Disposal must be made according to official regulations.

Container remains hazardous when empty. Continue to observe all precautions.

Containers, even those that are “empty,” may contain residues that can develop flammable vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

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- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· 14.1 UN number or ID number	Void
· ADR/RID/ADN, ADN, IMDG, IATA	Not applicable
· 14.2 UN proper shipping name	Void
· ADR/RID/ADN, ADN, IMDG, IATA	Not applicable
· 14.3 Transport hazard class(es)	Void
· ADR/RID/ADN, ADN, IMDG, IATA	
· Class	Not applicable
· 14.4 Packing group	Void
· ADR/RID/ADN, IMDG, IATA	Not applicable
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.
· UN "Model Regulation":	Not applicable

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Poisons Act**

- **Regulated explosives precursors**

None of the ingredients are listed.

- **Regulated poisons**

None of the ingredients are listed.

- **Reportable explosives precursors**

None of the ingredients are listed.

- **Reportable poisons**

None of the ingredients are listed.

- **Control Of Major Accident Hazards Regulations 2015 (COMAH)**
- **Named dangerous substances - ANNEX I** None of the ingredients are listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

· Relevant phrases

H301 Toxic if swallowed.
H302 Harmful if swallowed.
H310 Fatal in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H361f Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

· Training hints

This product should only be handled by workers who have received sufficient training in the safe handling and use of chemical products.

· Department issuing SDS: Product safety department.**· Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
DNEL: Derived No-Effect Level (UK REACH)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
ATE: Acute toxicity estimate values
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 2: Acute toxicity – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1A: Skin sensitisation – Category 1A
Repr. 2: Reproductive toxicity – Category 2
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3