

Substrate Buffer (5x) – Safety Data Sheet

In accordance with regulation (EC) No. 1907/2006, amended by 2020/878/EU

1. Identification of the substance or preparation and of the company undertaking

1.1 Product identifier

Substrate buffer (5x concentrate)
Art No. 110130 / 110131 / 110132 / 110134
UFI-Code: 5910-S05J-A00A-R4KP

1.2 Use of the substance or mixture

Laboratory chemical.
Laboratory reagent.

1.3 Manufacturer / supplier details

BIOREBA AG
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CH-4153 Reinach
Switzerland
Phone +41 61 712 11 25; Fax +41 61 712 11 17
admin@bioreba.ch
www.bioreba.ch

1.4 Emergency phone number

Tox Info Suisse
Emergency Switzerland phone: 145
From abroad: +41 44 251 51 51

2. Hazards identification

2.1 Classification according to Regulation (EC) 1272/2008

Acute Tox. 4	H302: Harmful if swallowed.
Skin Irrit. 2	H315: Causes skin irritation.
Eye Dam. 1	H318: Causes serious eye damage.
Repr. 2	H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
STOT RE 2	H373: May cause damage to organs through prolonged or repeated exposure if swallowed.
Aquatic Chronic 4	H413: May cause long lasting harmful effects to aquatic life.

2.2 Label elements

Hazard pictogram(s):



Signal word(s): Danger.

Hazard statements

H302:	Harmful if swallowed.
H315:	Causes skin irritation.
H318:	Causes serious eye damage.
H361fd:	Suspected of damaging fertility. Suspected of damaging the unborn child.
H373:	May cause damage to organs (kidney, liver, blood) through prolonged or repeated exposure.
H413:	May cause long lasting harmful effects to aquatic life.

Precautionary statements

P260:	Do not breathe dust/fume/gas/mist/vapours/spray.
P273:	Avoid release to the environment.
P280:	Wear protective gloves/ protective clothing/ eye protection/ face protection.
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 or doctor/physician.
P501:	Dispose of contents/container to industrial incinerator system.

2.3 Additional information

No information is available.

3. Composition / Information on ingredients

Proprietary formulation.

CAS / EG / Index No.	Substance name	Weight %	SCL M-factor ATE
CAS-No.: 111-42-2 EC-No.: 203-868-0 Index-No.: 603-071-00-1	Diethanolamine	40 - ≤ 50%	H302, H315, H318, H373 ATE (1'600 mg/kg oral)
CAS-No.: 14426-21-2 EC-No.: 238-396-4 Index-No.: -	Diethanolamine-hydrochlorid	5 - 15%	H302, H315, H318, H373 ATE (1'600 mg/kg oral)
CAS-No.: 26628-22-8 EC-No.: 247-852-1 Index-No.: 011-004-00-7	Sodium azide	0.05 - ≤ 0.13%	H300, H310, H330, H373, H410 M=1, ATE (27 mg/kg oral, 20 mg/kg dermal, > 0.054 mg/L/4h inhalation)

4. First aid measures

4.1 Description of First Aid Measures

General notes

In case of accident or illness: Consult a doctor immediately (if possible, show this instruction manual or safety data sheet). Change contaminated or soaked clothing immediately. Personal protection for the First Aider.

After inhalation

In case of accidental inhalation: Remove casualty to fresh air and allow to rest. If discomfort arises, seek medical advice/medical attention.

In case of skin contact

After contact with the skin, wash with plenty of soap and water. If discomfort arises, seek medical advice/medical attention.

In case of eye contact

Immediately rinse, carefully and thoroughly, for several minutes with eye wash or water. If discomfort arises, seek medical advice/medical attention.

If swallowed

Rinse the mouth thoroughly with water. Drink water. Do not induce vomiting. Never administer anything through the mouth to an unconscious person or in case of cramps. Seek medical advice immediately.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (sections 2.3 and 2.4). Nausea and vomiting can occur.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Firefighting measures

5.1 Suitable extinguishing media

Use an extinguishing agent suitable for the surrounding fire. Water spray, foam, dry powder, carbon dioxide (CO₂).

5.2 Special hazards arising from the mixture

Carbon oxides, Nitrogen oxides.

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapors is possible in the event of fire.

5.3 Advice for firefighters

Protective clothing against liquid and gaseous chemicals, including liquid aerosols and solid particles. Wear self-contained breathing apparatus. Self-contained breathing apparatus (SCBA). Self-contained breathing apparatus (autonomous breathing apparatus, EN 133). Type: B (against inorganic gases and vapors, color: grey). Type: ABEK (combination filter for gases and vapors, color: brown/grey/yellow/green). Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Additional information

Suppress (knock down) gases and vapors with a water spray jet. Do not allow firefighting water to reach drains, sewers and watercourses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid inhalation of dust. Avoid substance contact. Ensure adequate ventilation. Use suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent contamination of skin, eyes and personal clothing. Avoid contact with skin, eyes and clothing.

6.2 Environmental precautions

Do not allow to enter drains, sewers or watercourses.

6.3 Methods and material for containment and cleaning up

Cover drains and sewers. Absorb mechanically. Avoid dust formation.

7. Handling and storage

7.1 Handling

7.1.1 Precautions for safe handling

Work under fume hood. Do not inhale. Wear suitable protective clothing for skin protection. Keep the workplace clean. Avoid aerosol formation. Open containers with caution and avoid dust formation.

7.1.2 Precautions for fire and explosion protection

Do not smoke. Do not eat and drink.

7.1.3 Further information on handling

Always close the container tightly after removing the product. Wash hands before breaks and hand and face at the end of the working with the substance. Store away from foodstuffs.

7.2 Storage

7.2.1 Requirements for storage rooms and containers

Keep container tightly closed and in a well-ventilated, dry place. Keep only in original container. The product is sensitive to air.

7.2.2 Precautions for combined storage

No information is available.

7.2.3 Further information on storage conditions

Recommended storage temperature: 4°C. Protect against light, heat, effect of cold and humidity. Tightly closed. Dry. Air sensitive. Storage Class (CH): LK 6.1.

8. Exposure controls / personal protection

8.1 Control parameters

Occupational exposure limits:

Country	Substance	CAS-No.	Remark	Identifier	TWA [mg/m ³]	STEL [mg/m ³]	Source
CH	Diethanolamine	111-42-2		TLV	1.0	1.0	SUVA
CH	Sodium azide	26628-22-8	i	TLV	0.2	0.4	SUVA

Specified limits are for the pure substances, not for the mixture.

8.2 Exposure controls

8.2.1 Protective and hygiene measures

Always close the container tightly after removing the product. Wash hands before breaks and hand and face at the end of the working with the substance. Avoid contact with skin and eyes. General safety measures must be observed.

8.2.2 Eye protection

Suitable eye protection: Close-fitting protective glasses, DIN EN166.

8.2.3 Hand protection

Rubber gauntlet gloves. DIN EN 374.

Check for tightness /imperviousness before use. If gloves are to be re-used, clean them before removal and ensure they are well ventilated during storage.

8.2.4 Body protection

Personal protective clothing.

8.2.5 Respiratory protection

Recommended filter type: Filter A-(P2). For short-term or low contamination use respiratory filter device; for intense or prolonged exposure use self-contained breathing apparatus.

8.2.6 Environmental exposure controls

Material and its container must be disposed of in a safe way.

9. Physical and chemical properties

9.1 Information on physical and chemical properties

Aggregate state:	Liquid
pH:	9.8 +/- 0.1 (25°C)
Color:	Transparent / clear (Colorless)
Odor:	Of ammonia
Miscibility with water:	Fully miscible

10. Stability and reactivity

10.1 Reactivity

Forms explosive mixtures with air on intense heating (critical at flashpoint: ~138°C). This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal environmental conditions and under the temperature and pressure conditions expected during storage and handling. Absorbs carbon dioxide (CO₂) from air.

10.3 Possibility of hazardous reactions

No hazardous reactions known.

10.4 Conditions to be avoided

Strong heating.

10.5 Incompatible materials

Bronze, Copper, Copper alloys, Brass, Zinc, Zinc alloys, Strong oxidizing agents.

10.6 Hazardous decomposition products

In the event of fire, the following may be produced: Carbon oxides and Nitrogen oxides. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapors is possible in the event of fire.

11. Toxicological information

11.1 Information on hazard classes according regulation (EC) 1272/2008

Acute toxicity:

CAS-No.	Substance	Route of exposure	Endpoint	Value	Species	Source
111-42-2	Diethanolamine	Oral	LD50	676 mg/kg	Rat	RTECS
26628-22-8	Sodium azide	Oral, dermal, inhalation	LD50	27 mg/kg	Rat	RTECS

Irritation and corrosive effects on the skin: Irritation.

Irritation and corrosive effects on the eyes: Causes serious eye damage.

Irritation and corrosive effects via inhalation: In case of prolonged exposure: headache, dizziness, irritation, cough.

Sensitization effects: No sensitizing effects known.

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

11.2 Information on other hazards

No information available.

12. Ecological information

12.1 Toxicity

The product is not classified as toxic to the environment.

CAS-No.	Substance	Endpoint	Value	Species	Source	Exposure duration
111-42-2	Diethanolamine	LC50	460 mg/l	Fish	ECHA	96h
		EC50	30.1 mg/l	Daphnia	ECHA	48h
		ErC50	9.5 mg/l	Algae	US-EPA	96h
		EC10	1.05 mg/l	Daphnia	ECHA	21d
26628-22-8	Sodium azide	LC50	2.75 mg/l	Fish	ECHA	96h
		EC50	0.35 mg/l	Algae	ECHA	96h
		EC50	79.3 mg/l	Microorganisms	ECHA	3h

12.2 Persistence and degradability

No information available.

12.3 Bio-accumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

A PBT and vPvB assessment is not available as a chemical safety assessment is not required / was not carried out.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

13. Disposal considerations

13.1 Waste treatment methods

Disposal in accordance with local regulations. Uncontaminated and clean containers may be recycled.

Disposal of contaminated packaging and recommended cleaning agents:

In accordance with local authority regulations.

14. Transport Information

The product is not classified as dangerous good for all modes of transport.

14.1 UN number or ID number

Not hazardous for transportation.

ADR, RID, IMDG, IATA-DGR, ICAO-TI: Not applicable.

14.2 UN proper shipping name

ADR, RID, IMDG, IATA-DGR, ICAO-TI: Not applicable.

14.3 Transport hazard class(es)

ADR, RID, IMDG, IATA-DGR, ICAO-TI: Not applicable.

14.4 Packing group

ADR, RID, IMDG, IATA-DGR, ICAO-TI: Not applicable.

14.5 Environmental hazards

No environmental hazards.

14.6 Special precautions for user

No special precautions.

15. Regulatory information

No data available.

16. Other information

16.1 Abbreviations and acronyms

ADR:	Accord Européen sur le transport de marchandises dangereuses par route (European Agreement concerning the international carriage of dangerous goods by road)
RID:	Règlement international concernant le transport des marchandises Dangereuses par chemin de fer (Regulations concerning the international transport of dangerous goods by rail)
ECHA:	European Chemicals Agency
IMDG:	International Maritime Code for Dangerous Goods
IATA:	International Air Transport Association
IATA-DGR:	Dangerous Goods Regulation by the "International Air transport Association" (IATA)
ICAO:	International Civil Aviation Organization
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS:	Globally Harmonized System of Classification and Labelling of Chemicals
GefStoffV:	Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
LC50:	Lethal concentration, 50 percent
LD50:	Lethal dose, 50 percent
EC50:	Median effective concentration
ATE:	Acute Toxicity Estimate
RTECS:	Registry of Toxic Effects of Chemical Substances
NOAEL:	No Observed Adverse Effect Level
DNEL:	Derived No Effect Level
PBT:	Persistent, Bioaccumulative and Toxic
PNEC:	Predicted No Effect Concentration
vPvB	Very Persistent and very Bioaccumulative
US-EPA	United States Environmental Protection Agency

16.2 Further information

The information is based on the present state of our knowledge and serves to describe the product with regard to its required safety precautions. They do not represent a warranty of the product's described characteristics.