

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 1 of 14

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

1.1. Product identifier

Substrate Buffer for Alkaline Phosphatase

UFI: V2E7-T18K-300U-NAF3

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

Use of the substance/mixture

Use as laboratory reagent

Uses advised against

Any non-intended use.

1.3. Details of the supplier of the safety data sheet

Company name: MORPHISTO GmbH
Street: Schumannstr. 142/144
Place: D-63069 Offenbach
Telephone: +49 (0) 69 / 400 3019-60 Telefax: +49 (0) 69 / 400 3019-64
E-mail: info@morphisto.de
Contact person: Morphisto GmbH
E-mail: gefahrstoffmanagement@morphisto.de
Internet: http://www.morphisto.de

1.4. Emergency telephone number:

Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Eye Dam. 1; H318
Repr. 2; H361fd

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Hazard components for labelling

diethanolamine

Signal word: Danger

Pictograms:



Hazard statements

H318 Causes serious eye damage.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

Precautionary statements

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/doctor.

2.3. Other hazards

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 2 of 14

This substance/mixture contains no components considered to be either persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB) at levels of 0.1% or higher. Ecological information: The substance/mixture does not contain any components that are considered to be hazardous according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in amounts of 0.1 % or more have endocrine disrupting properties. Toxicological information: The substance/mixture does not contain any components that are to be classified according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 % or more have endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
111-42-2	diethanolamine			5 - < 10 %
	203-868-0	603-071-00-1	01-2119488930-28	
	Repr. 2, Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, STOT RE 2, Aquatic Chronic 3; H361fd H302 H315 H318 H373 H412			
7647-01-0	hydrochloric acid %			< 1 %
	231-595-7	017-002-01-X	01-2119484862-27	
	Met. Corr. 1, Skin Corr. 1B, Eye Dam. 1, STOT SE 3; H290 H314 H318 H335			
26628-22-8	sodium azide			< 0.1 %
	247-852-1	011-004-00-7	01-2119457019-37	
	Acute Tox. 1, Acute Tox. 2, Acute Tox. 2, STOT RE 2, Aquatic Acute 1, Aquatic Chronic 1; H310 H330 H300 H373 H400 H410 EUH032			

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

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
111-42-2	203-868-0	diethanolamine	5 - < 10 %
		oral: LD50 = 1100 mg/kg	
7647-01-0	231-595-7	hydrochloric acid %	< 1 %
		oral: LD50 = 2222 mg/kg Skin Corr. 1B; H314: >= 25 - 100 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 25 STOT SE 3; H335: >= 10 - 100	
26628-22-8	247-852-1	sodium azide	< 0.1 %
		inhalation: ATE = 0,5 mg/l (vapours); inhalation: LC50 = > 0,054 - < 0,52 mg/l (dusts or mists); dermal: LD50 = 20,0 mg/kg; oral: LD50 = 27,0 mg/kg Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=1	

Further Information

This product contains no substances of very high concern (SVHC) (>0,1%) which are included in the Candidate List according to Article 59 of REACH.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 3 of 14

After inhalation

Provide fresh air. In case of accident by inhalation: remove casualty to fresh air and keep at rest. In case of respiratory tract irritation, consult a physician.

After contact with skin

Immediately remove any contaminated clothing, shoes or stockings. Gently wash with plenty of soap and water. In case of skin irritation, seek medical treatment.

After contact with eyes

Rinse cautiously with water for several minutes. In case of troubles or persistent symptoms, consult an ophthalmologist.

After ingestion

Observe risk of aspiration if vomiting occurs. Rinse mouth thoroughly with water. Let water be drunk in little sips (dilution effect). Do NOT induce vomiting. In all cases of doubt, or when symptoms persist, seek medical advice.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings. Carbon dioxide (CO₂). Dry extinguishing powder. alcohol resistant foam. Atomized water.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Non-flammable. In case of fire may be liberated: Carbon monoxide. Carbon dioxide (CO₂). Nitrogen oxides (NO_x).

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Co-ordinate fire-fighting measures to the fire surroundings.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Safe handling: see section 7

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up**For cleaning up**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

Other information

Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Safe handling: see section 7

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 4 of 14

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Wear suitable protective clothing. See section 8.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Always close containers tightly after the removal of product.

Further information on handling

General protection and hygiene measures: See section 8.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations.

Hints on joint storage

Do not store together with: Explosives. Oxidizing solids. Oxidizing liquids. Radioactive substances. Infectious substances. Food and animal feedingstuff.

Further information on storage conditions

Keep the packing dry and well sealed to prevent contamination and absorption of humidity.

Recommended storage temperature: 15-25 °C

Protect against: frost. UV-radiation/sunlight. heat. Humidity

7.3. Specific end use(s)

See section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
7647-01-0	Hydrogen chloride (gas and aerosol mists)	1	2		TWA (8 h)	WEL
		5	8		STEL (15 min)	WEL
26628-22-8	Sodium azide (as NaN ₃)	-	0.1		TWA (8 h)	WEL
		-	0.3		STEL (15 min)	WEL

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 5 of 14

DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
111-42-2	diethanolamine		
Worker DNEL, long-term	inhalation	systemic	0,75 mg/m ³
Worker DNEL, long-term	inhalation	local	0,5 mg/m ³
Worker DNEL, long-term	dermal	systemic	0,13 mg/kg bw/day
7647-01-0	hydrochloric acid %		
Worker DNEL, acute	inhalation	local	15 mg/m ³
Worker DNEL, long-term	inhalation	local	8 mg/m ³
26628-22-8	sodium azide		
Worker DNEL, long-term	dermal	systemic	0,0467 mg/kg bw/day
Worker DNEL, long-term	inhalation	systemic	0,164 mg/m ³

PNEC values

CAS No	Substance	
Environmental compartment	Value	
111-42-2	diethanolamine	
Freshwater	0,021 mg/l	
Marine water	0,002 mg/l	
Freshwater sediment	0,096 mg/kg	
Marine sediment	0,009 mg/kg	
Micro-organisms in sewage treatment plants (STP)	100 mg/l	
Soil	1,63 mg/kg	
26628-22-8	sodium azide	
Freshwater	0,00035 mg/l	
Freshwater (intermittent releases)	mg/l	
Freshwater sediment	0,0167 mg/kg	
Marine sediment	0,00072 mg/kg	
Micro-organisms in sewage treatment plants (STP)	0,03 mg/l	

8.2. Exposure controls



Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles. Wear safety glasses; chemical goggles (if splashing is possible). EN 166

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 6 of 14

specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Wear suitable gloves.

Suitable material:

FKM (fluororubber). - Thickness of glove material: 0,4 mm

Breakthrough time \geq 8 h

Butyl rubber. - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

CR (polychloroprenes, Chloroprene rubber). - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

NBR (Nitrile rubber). - Thickness of glove material: 0,35 mm

Breakthrough time \geq 8 h

PVC (Polyvinyl chloride). - Thickness of glove material: 0,5 mm

Breakthrough time \geq 8 h

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Check leak tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well.

Skin protection

Use of protective clothing. Suitable protective clothing: Lab apron.

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500 (D).

Respiratory protection

In case of inadequate ventilation wear respiratory protection. With correct and proper use, and under normal conditions, breathing protection is not required.

Respiratory protection necessary at:

-exceeding exposure limit values

-insufficient ventilation and aerosol or mist formation

Suitable respiratory protective equipment: Combination filtering device (EN 14387) Type E-P2

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. The wearing time limitations according to GefStoffV in conjunction with the rules for the use of respiratory protective devices (BGR 190) must be observed.

Environmental exposure controls

No special precautionary measures are necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid	
Colour:	colourless	
Odour:	characteristic	
Melting point/freezing point:		not determined
Boiling point or initial boiling point and boiling range:		not determined
Flammability:		not determined
Lower explosion limits:		not determined
Upper explosion limits:		not determined
Flash point:		not determined
Auto-ignition temperature:		not determined
Decomposition temperature:		not determined
pH-Value (at 20 °C):		9-10
Viscosity / kinematic:		not determined

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 7 of 14

Water solubility:	not determined
Solubility in other solvents	
not determined	
Partition coefficient n-octanol/water:	not determined
Vapour pressure:	not determined
Density (at 20 °C):	not determined
Relative vapour density:	not determined
Particle characteristics:	not applicable

9.2. Other information**Information with regard to physical hazard classes**

Explosive properties

The product is not: Explosive. none

Sustaining combustion:

Not sustaining combustion

Self-ignition temperature

Gas:

not determined

Oxidizing properties

none

Other safety characteristics

Evaporation rate:

not determined

Solvent separation test:

not determined

Solvent content:

not determined

Solid content:

not determined

Sublimation point:

not determined

Softening point:

not determined

Pour point:

not determined

Viscosity / dynamic:

not determined

Flow time:

not determined

SECTION 10: Stability and reactivity**10.1. Reactivity**

No information available.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

Refer to chapter 10.5.

10.4. Conditions to avoid

Protect against: UV-radiation/sunlight. heat.

10.5. Incompatible materials

Materials to avoid: Oxidizing agents, strong. Reducing agents, strong.Strong acid

10.6. Hazardous decomposition productsIn case of fire may be liberated: Carbon monoxide. Carbon dioxide (CO₂). Nitrogen oxides (NO_x).**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in GB CLP Regulation****Toxicokinetics, metabolism and distribution****Acute toxicity**

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

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 8 of 14

ATEmix calculated

ATE (oral) 11677 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
111-42-2	diethanolamine				
	oral	LD50 1100 mg/kg	Rat	ECHA	
7647-01-0	hydrochloric acid %				
	oral	LD50 2222 mg/kg	Rat	suppliers SDS.	
26628-22-8	sodium azide				
	oral	LD50 27,0 mg/kg	Rat.	HSDB Toxnet	
	dermal	LD50 20,0 mg/kg	Rabbit	HSDB Toxnet	
	inhalation vapour	ATE 0,5 mg/l			
	inhalation (4 h) dust/mist	LC50 > 0,054 - < 0,52 mg/l	Rat	ECHA Dossier	EPA OPPTS 870.1300

Irritation and corrosivity

Causes serious eye damage.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

Suspected of damaging fertility. Suspected of damaging the unborn child. (diethanolamine)

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

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

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

11.2. Information on other hazards

Endocrine disrupting properties

This product does not contain any substance that has endocrine disrupting properties in humans as no ingredient meets the criteria.

Other information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

SECTION 12: Ecological information

12.1. Toxicity

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

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 9 of 14

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
111-42-2	diethanolamine					
	Acute fish toxicity	LC50	460 mg/l	96 h	Oncorhynchus mykiss	ECHA
	Acute algae toxicity	ErC50	9,5 mg/l	72 h	Pseudokirchneriella subcapitata	ECHA
	Acute crustacea toxicity	EC50 mg/l	30,1	48 h	Ceriodaphnia dubia (water flea)	ECHA
	Crustacea toxicity	NOEC mg/l	11,82	21 d	Daphnia magna	Study report (1992) other: draft EEC-guideline XI/681/86
26628-22-8	sodium azide					
	Acute fish toxicity	LC50 mg/l	2,75	96 h	Oncorhynchus mykiss (Rainbow trout)	ECHA Dossier OECD Guideline 203
	Acute algae toxicity	ErC50 mg/l	0,35	96 h	Pseudokirchneriella subcapitata	ECHA Dossier OECD Guideline 201
	Acute crustacea toxicity	EC50	4,2 mg/l	48 h	Daphnia pulex (water flea)	ECHA Dossier
	Acute bacteria toxicity	EC50 mg/l ()	79,3	3 h	Activated sludge	ECHA Dossier OECD Guideline 209

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
111-42-2	diethanolamine	-2,46

BCF

CAS No	Chemical name	BCF	Species	Source
111-42-2	diethanolamine	2,69		

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

The product has not been tested.

Further information

Avoid release to the environment. Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

Observe in addition any national regulations! Consult the local waste disposal expert about waste disposal.

Non-contaminated packages may be recycled.

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 10 of 14

According to (EWC) European Waste Catalogue, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.

Control report for waste code/ waste marking according to (EWC) European Waste Catalogue:

List of Wastes Code - residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

List of Wastes Code - used product

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Hazardous waste according to Directive 2008/98/EC (waste framework directive). Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

<u>14.1. UN number or ID number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

<u>14.1. UN number or ID number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

<u>14.1. UN number or ID number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

<u>14.1. UN number or ID number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Refer to section 6-8

14.7. Maritime transport in bulk according to IMO instruments

not relevant

SECTION 15: Regulatory information

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

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 11 of 14

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 75

Directive 2010/75/EU on industrial emissions: No information available.

Directive 2004/42/EC on VOC in paints and varnishes: No information available.

Information according to Directive 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

Additional information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

diethanolamine
hydrochloric acid %
sodium azide

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,3,4,5,6,7,8,9,11,12,13,15,16.

Rev. 1.0; Initial release: 16.07.2018

Rev. 2.0; 11.01.2024; general adjustment(s), Change of classification/labeling

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 12 of 14

Abbreviations and acronyms

Met. Corr: Corrosive to metals

Acute Tox: Acute toxicity

Skin Corr: Skin corrosion

Skin Irrit: Skin irritation

Eye Dam: Eye damage

Repr: Reproductive toxicity

STOT SE: Specific target organ toxicity - single exposure

STOT RE: Specific target organ toxicity - repeated exposure

Aquatic Acute: Acute aquatic hazard

Aquatic Chronic: Chronic aquatic hazard

ADR: Accord européen sur le transport des marchandises dangereuses par Route

AwSV: Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen

AGW: Arbeitsplatzgrenzwert

AVV: Abfallverzeichnisverordnung

CAS Chemical Abstracts Service

CLP: Classification, Labelling and Packaging of substances and mixtures

DNEL: Derived No Effect Level

d: day(s)

EAKV: Europäisches Abfallverzeichnis gemäß Entwurf Abfallverzeichnisverordnung

EINECS: European INventory of Existing Commercial chemical Substances

ELINCS: European List of Notified Chemical Substances

ECHA: European Chemicals Agency

EWC: European Waste Catalogue

IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations 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)

h: hour

LOAEL: Lowest observed adverse effect level

LOAEC: Lowest observed adverse effect concentration

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NOAEL: No observed adverse effect level

NOAEC: No observed adverse effect level

NLP: No-Longer Polymers

N/A: not applicable

OECD: Organisation for Economic Co-operation and Development

PNEC: predicted no effect concentration

PBT: Persistent bioaccumulative toxic

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

REACH: Registration, Evaluation, Authorisation of Chemicals

SVHC: substance of very high concern

TRGS Technische Regeln fuer Gefahrstoffe

UN: United Nations

VOC: Volatile Organic Compounds

VwVwS: Verwaltungsvorschrift wassergefaehrdender Stoffe

WGK: Wassergefaehrdungsklasse

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

Safety Data Sheet

according to UK REACH Regulation

Substrate Buffer for Alkaline Phosphatase

Revision date: 11.01.2024

Product code: 13873.xxxxx

Page 13 of 14

UN: United Nations
 EC/EEC: European Community/European Economic Community
 EU: European Union
 CAS: Chemical Abstracts Service
 DNEL: Derived No Effect Level
 DMEL: Derived Minimal Effect Level
 PNEC: Predicted No Effect Concentration
 ATE: Acute toxicity estimate
 LL50: Lethal loading, 50%
 EL50: Effect loading, 50%
 EC50: Effective Concentration 50%
 ErC50: Effective Concentration 50%, growth rate
 NOEC: No Observed Effect Concentration
 BCF: Bio-concentration factor
 PBT: persistent, bioaccumulative, toxic
 vPvB: very persistent, very bioaccumulative
 M-factor: Multiplying factor
 ADR: Accord européen sur le transport des marchandises dangereuses par Route
 (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 RID: Regulations concerning the international carriage of dangerous goods by rail
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation
 intérieures)
 EmS: Emergency Schedules
 MFAG: Medical First Aid Guide
 IATA: International Air Transport Association
 DGR: Dangerous Goods Regulations
 ICAO: International Civil Aviation Organization
 TI: Technical Instructions
 MARPOL: International Convention for the Prevention of Marine Pollution from Ships
 IBC: Intermediate Bulk Container
 VOC: volatile organic compound
 For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety
 assessment, chapter R.20 (Table of terms and abbreviations).

Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Eye Dam. 1; H318	Calculation method
Repr. 2; H361fd	Calculation method

Relevant H and EUH statements (number and full text)

H290	May be corrosive to metals.
H300	Fatal if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH032	Contact with acids liberates very toxic gas.

Safety Data Sheet

according to UK REACH Regulation

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Page 14 of 14

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. Classification according to Regulation (EC) No 1272/2008 [CLP] - Classification procedure:

Health hazards: Calculation method.

Environmental hazards: Calculation method.

Physical hazards: On basis of test data and / or calculated and / or estimated.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)