

## HPE buffer

Version number: 2.0  
Replaces version of: 2020-04-30 (1)

Revision: 2020-06-03

### SECTION 1: Identification

#### 1.1 Product identifier

Trade name **HPE buffer**  
Alternative number(s) M1940, M9161

#### 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 suitable for in vitro diagnostic use.

#### 1.3 Details of the supplier of the safety data sheet

Sanquin  
Plesmanlaan 125  
1066 CX Amsterdam  
The Netherlands  
  
Telephone: +31 20 512 3599  
e-mail: reagents@sanquin.nl  
Website: www.sanquin.org/reagents

e-mail (competent person) CSVAM@sanquin.nl

#### 1.4 Emergency telephone number

Emergency information service +31 20 512 3599  
This number is only available during the following office hours: Mon-Fri 09:00 - 17:00, (CET)

### SECTION 2: Hazard(s) identification

#### 2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Section	Hazard class	Category	Hazard class and category	Hazard statement
A.3	serious eye damage/eye irritation	2	Eye Irrit. 2	H319
A.9	specific target organ toxicity - repeated exposure	2	STOT RE 2	H373

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects  
Delayed or immediate effects can be expected after short or long-term exposure.

#### 2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- signal word Warning

- pictograms

GHS07, GHS08



- hazard statements

H319 Causes serious eye irritation.  
H373 May cause damage to organs through prolonged or repeated exposure.

## HPE buffer

Version number: 2.0  
Replaces version of: 2020-04-30 (1)

Revision: 2020-06-03

- precautionary statements
  - P260 Do not breathe dust/fume/gas/mist/vapors/spray.
  - P280 Wear 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.
  - P314 Get medical advice/attention if you feel unwell.
  - P337+P313 If eye irritation persists: Get medical advice/attention.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- hazardous ingredients for labelling tetrasodium ethylenediaminetetraacetate

### 2.3 Other hazards

Of no significance.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.


## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not relevant (mixture)

### 3.2 Mixtures

The product does not contain any (other) ingredients which are classified according to present knowledge of the supplier and contribute to the classification of the product and hence require reporting in this section.

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
tetrasodium ethylenediaminetetraacetate	CAS No 64-02-8	1.9	Acute Tox. 4 / H302 Acute Tox. 4 / H332 Eye Dam. 1 / H318 STOT RE 2 / H373		

### Remarks

For full text of H-phrases: see SECTION 16. All the percentages given are percentages by weight unless stated otherwise.

## SECTION 4: First-aid measures

### 4.1 Description of first-aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. In case of unconsciousness place person in the recovery position. Never give anything by mouth. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician.

Following skin contact

Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

Following eye contact

Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER/doctor.

Following ingestion

Rinse mouth with water (only if the person is conscious). Call a POISON CENTER or doctor/physician if you feel unwell.

## HPE buffer

Version number: 2.0  
Replaces version of: 2020-04-30 (1)

Revision: 2020-06-03

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

Symptoms and effects are not known to date.

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

For specialist advice physicians should contact the poison centre.

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Dry extinguishing powder; Carbon dioxide (CO<sub>2</sub>)

Unsuitable extinguishing media

Water jet.

### 5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

During fire hazardous fumes/smoke could be produced.

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Self-contained breathing apparatus (SCBA). Standard protective clothing for firefighters.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety. Ventilate affected area.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases. Wear personal protective equipment/face protection.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

### 6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece).

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

## HPE buffer

Version number: 2.0  
Replaces version of: 2020-04-30 (1)

Revision: 2020-06-03

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

##### Recommendations

- measures to prevent fire as well as aerosol and dust generation
- Use local and general ventilation. Use only in well-ventilated areas.

##### Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

#### 7.2 Conditions for safe storage, including any incompatibilities

##### Managing of associated risks

- incompatible substances or mixtures
- Keep away from alkalis, oxidising substances, acids.

##### Control of the effects

Protect against external exposure, such as  
High temperatures. Frost. UV-radiation/sunlight.

##### Consideration of other advice

Store in a well-ventilated place. Keep container tightly closed.

#### 7.3 Specific end use(s)

There is no additional information.

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

##### National limit values

No information available. Countries not listed may have their own country specific values.

##### Relevant DNELs/DMELs/PNECs and other threshold levels

Relevant DNELs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	1.5 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - local effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	3 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	acute - local effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	0.6 mg/m <sup>3</sup>	human, inhalatory	consumer (private households)	chronic - local effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	1.2 mg/m <sup>3</sup>	human, inhalatory	consumer (private households)	acute - local effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	25 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects

## HPE buffer

Version number: 2.0  
Replaces version of: 2020-04-30 (1)

Revision: 2020-06-03

Relevant PNECs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
tetrasodium ethylenediaminetetraacetate	64-02-8	PNEC	2.2 mg/l	aquatic organisms	freshwater	short-term (single instance)
tetrasodium ethylenediaminetetraacetate	64-02-8	PNEC	0.22 mg/l	aquatic organisms	marine water	short-term (single instance)
tetrasodium ethylenediaminetetraacetate	64-02-8	PNEC	43 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
tetrasodium ethylenediaminetetraacetate	64-02-8	PNEC	0.72 mg/kg	terrestrial organisms	soil	short-term (single instance)

### 8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection

Skin protection

Protective clothing against liquid chemicals.

- hand protection



Wear suitable gloves. Check leak-tightness/impermeability prior to use. 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. 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.

- type of material

Nitrile rubber

- material thickness

Use gloves with a minimum material thickness:  $\geq 0,45$  mm.

- breakthrough times of the glove material

Use gloves with a minimum breakthrough times of the glove material: >480 minutes (permeation: level 6).

- other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Observe the OSHA respirator regulations cited in 29 CFR 1910.134 and use NIOSH/MSHA approved respirators.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

## HPE buffer

 Version number: 2.0  
 Replaces version of: 2020-04-30 (1)

Revision: 2020-06-03

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

##### Appearance

Physical state	liquid
Color	light yellow
Odor	characteristic

##### Other safety parameters

pH (value)	8
Melting point/freezing point	not determined
Initial boiling point and boiling range	100 °C
Flash point	not determined
Evaporation rate	not determined
Flammability (solid, gas)	not relevant, (fluid)
Explosive limits	not determined
Vapor pressure	0 Pa at 20 °C
Density	not determined
Vapor density	this information is not available
Relative density	information on this property is not available
Solubility(ies)	not determined

##### Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	not determined
Viscosity	not determined
Explosive properties	none
Oxidizing properties	none

#### 9.2 Other information

There is no additional information.

## HPE buffer

Version number: 2.0  
Replaces version of: 2020-04-30 (1)

Revision: 2020-06-03

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

#### 10.2 Chemical stability

See below "Conditions to avoid".

#### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

#### 10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

#### 10.5 Incompatible materials

Oxidizers.

#### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

Test data are not available for the complete mixture.

##### Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

#### Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

##### Acute toxicity

Shall not be classified as acutely toxic.

- acute toxicity of components of the mixture

Acute toxicity estimate (ATE) of components of the mixture			
Name of substance	CAS No	Exposure route	ATE
tetrasodium ethylenediaminetetraacetate	64-02-8	oral	1,913 mg/kg
tetrasodium ethylenediaminetetraacetate	64-02-8	inhalation: dust/mist	1.5 mg/l/4h

Acute toxicity of components of the mixture					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
tetrasodium ethylenediaminetetraacetate	64-02-8	oral	LD50	1,913 mg/kg	rat

##### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

##### Serious eye damage/eye irritation

Causes serious eye irritation.

##### Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

## HPE buffer

Version number: 2.0  
Replaces version of: 2020-04-30 (1)

Revision: 2020-06-03

### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

### Carcinogenicity

Shall not be classified as carcinogenic.

### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

### Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

### Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

## SECTION 12: Ecological information

### 12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
tetrasodium ethylenediaminetetraacetate	64-02-8	LC50	41 mg/l	fish	96 h
tetrasodium ethylenediaminetetraacetate	64-02-8	EC50	140 mg/l	aquatic invertebrates	48 h

Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
tetrasodium ethylenediaminetetraacetate	64-02-8	NOEC	≥25.7 mg/l	fish	35 d
tetrasodium ethylenediaminetetraacetate	64-02-8	LOEC	50 mg/l	aquatic invertebrates	21 d
tetrasodium ethylenediaminetetraacetate	64-02-8	growth (EbCx) 20%	>500 mg/l	microorganisms	30 min

### 12.2 Persistence and degradability

Data are not available.

### 12.3 Bioaccumulative potential

Data are not available.

### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.



## HPE buffer

Version number: 2.0  
Replaces version of: 2020-04-30 (1)

Revision: 2020-06-03

### 12.6 Other adverse effects

Data are not available.

Endocrine disrupting potential

None of the ingredients are listed.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment.

Waste treatment of containers/packages

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

#### Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

## SECTION 14: Transport information

- |  |   |
|--|---|
| <b>14.1 UN number</b>  | not subject to transport regulations                                  |
| <b>14.2 UN proper shipping name</b>  | not assigned  |
| <b>14.3 Transport hazard class(es)</b>   | not assigned  |
| <b>14.4 Packing group</b>  | not assigned  |
| <b>14.5 Environmental hazards</b>  | non-environmentally hazardous acc. to the dangerous goods regulations |
| <b>14.6 Special precautions for user</b>                                       | There is no additional information.                                   |
| <b>14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code</b> | No data available.  |

### Information for each of the UN Model Regulations

#### **Transport of dangerous goods by road or rail (49 CFR US DOT)**

Not subject to transport regulations.

#### **International Maritime Dangerous Goods Code (IMDG)**

Not subject to IMDG.

#### **International Civil Aviation Organization (ICAO-IATA/DGR)**

Not subject to ICAO-IATA.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

#### **National regulations (United States)**

##### **Toxic Substance Control Act (TSCA)**

all ingredients are listed (active)

##### **Superfund Amendment and Reauthorization Act (SARA TITLE III )**

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

none of the ingredients are listed

## HPE buffer

Version number: 2.0  
Replaces version of: 2020-04-30 (1)

Revision: 2020-06-03

- Specific Toxic Chemical Listings (EPCRA Section 313)  
none of the ingredients are listed

### **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)  
none of the ingredients are listed

### **Clean Air Act**

none of the ingredients are listed

### **Right to Know Hazardous Substance List**

- Hazardous Substance List (NJ-RTK)  
none of the ingredients are listed

### **California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987**

none of the ingredients are listed

### **VOC content**

Regulated Volatile Organic Compounds (VOC-EPA): Regulated Volatile Organic Compounds (VOC-Cal ARB):

### **Industry or sector specific available guidance(s)**

#### **NPCA-HMIS® III**

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	*	chronic (long-term) health effects may result from repeated overexposure
Health	2	temporary or minor injury may occur
Flammability	1	material that must be preheated before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

#### **NFPA® 704**

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	1	material that must be preheated before ignition can occur
Health	0	material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

## **15.2 Chemical Safety Assessment**

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

## HPE buffer

Version number: 2.0  
Replaces version of: 2020-04-30 (1)

Revision: 2020-06-03

### SECTION 16: Other information, including date of preparation or last revision

#### Revision

Date of compilation: 2020-06-03. Version number: 2.0. Date format: (YYYY-MM-DD).

#### Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)
1.1	Trade name: HPE-dilution buffer 5x	Trade name: HPE buffer
1.1	Alternative number(s): product number M1940	Alternative number(s): M1940, M9161
16	Revision: Date of compilation: 2020-04-30. Version number: 1.0. Date format: (YYYY-MM-DD).	Revision: Date of compilation: 2020-06-03. Version number: 2.0. Date format: (YYYY-MM-DD).

#### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
49 CFR US DOT	49 CFR U.S. Department of Transportation
Acute Tox.	Acute toxicity
ATE	Acute Toxicity Estimate
Cal ARB	California Air Resources Board
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EPA	Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LOEC	Lowest Observed Effect Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")

## HPE buffer

Version number: 2.0  
Replaces version of: 2020-04-30 (1)

Revision: 2020-06-03

Abbr.	Descriptions of used abbreviations
NOEC	No Observed Effect Concentration
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
STOT RE	Specific target organ toxicity - repeated exposure
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

### Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

### List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.

### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.