



MabTrack level adalimumab

Kit cover sheet

Date of compilation: 2022-12-06

Composition/information on ingredients

Hazardous components (including safety data sheet)

Components	Classification acc. to GHS	Pictograms	Page
Calibrators & Controls MabTrack level adalimumab	Met. Corr. 1 / H290 Skin Irrit. 3 / H316 Eye Dam. 1 / H318 Aquatic Acute 3 / H402 Aquatic Chronic 3 / H412		2 – 18
Human anti-adalimumab HRP-conjugate			19 – 31
HPE Dilution Buffer	Met. Corr. 1 / H290 Skin Irrit. 3 / H316 Eye Dam. 1 / H318 Aquatic Acute 3 / H402 Aquatic Chronic 3 / H412		32 – 49
Stop solution	Skin Irrit. 3 / H316		50 – 61

Non hazardous components (no safety data sheet attached)

Components
Mouse-anti-TNF/recombinant TNF pre-coated microtiter plate
Plate seals
Wash buffer stock solution
TMB substrate solution

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Replaces version of: 2021-12-09 (1)

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

1.1 Product identifier

Trade name **Calibrators & Controls MabTrack level adalimumab**
Article number M2912, M2913, M2914

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

Relevant identified uses For research use only
Uses advised against Do not use for squirting or spraying.

1.3 Details of the supplier of the safety data sheet

Sanquin Reagents B.V.
Plesmanlaan 125
1066 CX Amsterdam
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: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.16	substance or mixture corrosive to metals	1	Met. Corr. 1	H290
3.2	skin corrosion/irritation	3	Skin Irrit. 3	H316
3.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
4.1A	hazardous to the aquatic environment - acute hazard	3	Aquatic Acute 3	H402
4.1C	hazardous to the aquatic environment - chronic hazard	3	Aquatic Chronic 3	H412

For full text of H-phrases: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling

- signal word **Danger**

- pictograms

GHS05



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- hazard statements

H290	May be corrosive to metals.
H316	Causes mild skin irritation.
H318	Causes serious eye damage.
H412	Harmful to aquatic life with long lasting effects.

- precautionary statements

P234	Keep only in original packaging.
P273	Avoid release to the environment.
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.
P310	Immediately call a POISON CENTER/doctor.
P390	Absorb spillage to prevent material damage.
P406	Store in a corrosion resistant container with a resistant inner liner.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

- hazardous ingredients for labelling

Contains: tetrasodium ethylenediaminetetraacetate; hydrochloric acid ... %.

2.3 Other hazards

There is no additional information.

Results of PBT and vPvB assessment

Does not contain any substances that are assessed to be PBT or vPvB \geq 0.1%.

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of \geq 0.1%.



SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

The product does not contain (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 - <2.5	Acute Tox. 4 / H302 Acute Tox. 4 / H332 Eye Dam. 1 / H318 STOT RE 2 / H373 Aquatic Acute 3 / H402		
sodium chloride	CAS No 7647-14-5	1 - <2.5	Acute Tox. 5 / H303 Acute Tox. 5 / H333		
hydrochloric acid ... %	CAS No 7647-01-0	1 - <2.5	Press. Gas C / H280 Met. Corr. 1 / H290 Acute Tox. 4 / H302 Skin Corr. 1B / H314 Eye Dam. 1 / H318 STOT SE 3 / H335 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		B(a) U(b)

Notes

B(a): The classification refers to an aqueous solution

U(b): The allocation to the group 'compressed gas' is based on the physical state in which the gas is packaged

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Remarks

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

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.

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. Immediately call a POISON CENTER/doctor.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

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: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray; Alcohol resistant foam; Dry extinguishing powder; Carbon dioxide (CO₂);
Co-ordinate firefighting measures to the fire surroundings.

Unsuitable extinguishing media

Water jet.

5.2 Special hazards arising from the substance or mixture

Substance or mixture corrosive to metals.

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. Co-ordinate 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.

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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 vapours/dust/spray/gases. Use personal protective equipment as required.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

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.

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

- corrosive conditions

Store in corrosive resistant container with a resistant inner liner.

- incompatible substances or mixtures

Keep away from alkalis, oxidising substances, acids.

Control of effects

Protect against external exposure, such as

High temperatures. UV-radiation/sunlight. Frost.

Consideration of other advice

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

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- packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

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.

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 ³	human, inhalatory	worker (industry)	chronic - systemic effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	3 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	1.5 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	3 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	0.6 mg/m ³	human, inhalatory	consumer (private households)	chronic - local effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	1.2 mg/m ³	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
sodium chloride	7647-14-5	DNEL	2,069 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
sodium chloride	7647-14-5	DNEL	2,069 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
sodium chloride	7647-14-5	DNEL	295.5 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
sodium chloride	7647-14-5	DNEL	295.5 mg/kg bw/day	human, dermal	worker (industry)	acute - systemic effects
sodium chloride	7647-14-5	DNEL	443.3 mg/m ³	human, inhalatory	consumer (private households)	chronic - systemic effects
sodium chloride	7647-14-5	DNEL	443.3 mg/m ³	human, inhalatory	consumer (private households)	acute - systemic effects
sodium chloride	7647-14-5	DNEL	126.7 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
sodium chloride	7647-14-5	DNEL	126.7 mg/kg bw/day	human, dermal	consumer (private households)	acute - systemic effects
sodium chloride	7647-14-5	DNEL	126.7 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects

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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
sodium chloride	7647-14-5	DNEL	126.7 mg/kg bw/day	human, oral	consumer (private households)	acute - systemic effects
hydrochloric acid ... %	7647-01-0	DNEL	8 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
hydrochloric acid ... %	7647-01-0	DNEL	15 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
hydrochloric acid ... %	7647-01-0	DNEL	8 mg/m ³	human, inhalatory	consumer (private households)	chronic - local effects
hydrochloric acid ... %	7647-01-0	DNEL	15 mg/m ³	human, inhalatory	consumer (private households)	acute - local effects

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	2.83 mg/l	aquatic organisms	freshwater	short-term (single instance)
tetrasodium ethylenediaminetetraacetate	64-02-8	PNEC	0.283 mg/l	aquatic organisms	marine water	short-term (single instance)
tetrasodium ethylenediaminetetraacetate	64-02-8	PNEC	50 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
tetrasodium ethylenediaminetetraacetate	64-02-8	PNEC	1.1 mg/kg	terrestrial organisms	soil	short-term (single instance)
sodium chloride	7647-14-5	PNEC	5 mg/l	aquatic organisms	freshwater	short-term (single instance)
sodium chloride	7647-14-5	PNEC	500 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
sodium chloride	7647-14-5	PNEC	4.86 mg/kg	terrestrial organisms	soil	short-term (single instance)
hydrochloric acid ... %	7647-01-0	PNEC	36 µg/l	aquatic organisms	freshwater	short-term (single instance)
hydrochloric acid ... %	7647-01-0	PNEC	36 µg/l	aquatic organisms	marine water	short-term (single instance)
hydrochloric acid ... %	7647-01-0	PNEC	36 µg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
hydrochloric acid ... %	7647-01-0	PNEC	45 µg/l	aquatic organisms	water	intermittent release

8.2 Exposure controls

Appropriate engineering controls
General ventilation.

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Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection

Skin protection



Chemical protective clothing.

- 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

PVC: polyvinyl chloride, CR: chloroprene (chlorobutadiene) rubber, Nitrile rubber

- material thickness

Use gloves with a minimum material thickness: $\geq 0,38$ mm.

- breakthrough time of the glove material

Use gloves with a minimum breakthrough time 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. Provide eyewash stations and safety showers at the workplace.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Type: ABEK-P2 (combined filters against gases, vapours and particles, colour code: Brown/Grey/Yellow/Green/White).

Environmental exposure controls

Take appropriate precautions to avoid uncontrolled release into the environment. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	clear
Odour	characteristic
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	100 °C calculated value, referring to a component of the mixture
Evaporation rate	not determined
Flammability	non-combustible
Lower and upper explosion limit	LEL: UEL: not determined

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Flash point	not applicable
Auto-ignition temperature	not relevant
Decomposition temperature	no data available
pH (value)	7 – 8
Kinematic viscosity	not determined

Solubility(ies)

Water solubility	miscible in any proportion
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Partition coefficient n-octanol/water (log value)	this information is not available
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Vapour pressure	33,900 Torr at 25 °C calculated value, referring to a component of the mixture
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Density	not determined
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Particle characteristics	not relevant (liquid)
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9.2 Other information

There is no additional information.

Information with regard to physical hazard classes	there is no additional information
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Other safety characteristics

Miscibility	Completely miscible with water.
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SECTION 10: Stability and reactivity

10.1 Reactivity

Substance or mixture corrosive to metals.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

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

Oxidisers.

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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 GHS

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	>1,780 mg/kg
tetrasodium ethylenediaminetetraacetate	64-02-8	inhalation: dust/mist	1.5 mg/l/4h
sodium chloride	7647-14-5	oral	3,000 mg/kg
sodium chloride	7647-14-5	inhalation: dust/mist	>10.5 mg/l/4h
hydrochloric acid ... %	7647-01-0	oral	700 mg/kg

Acute toxicity of components of the mixture					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
tetrasodium ethylenediaminetetraacetate	64-02-8	oral	LD50	>1,780 - <2,000 mg/kg	rat
sodium chloride	7647-14-5	oral	LD50	3,000 mg/kg	rat
sodium chloride	7647-14-5	dermal	LD50	>10,000 mg/kg	rabbit
sodium chloride	7647-14-5	inhalation: dust/mist	LC50	>42 g/m ³ /1h	rat
hydrochloric acid ... %	7647-01-0	oral	LD50	700 mg/kg	rat
hydrochloric acid ... %	7647-01-0	dermal	LD50	>5,010 mg/kg	rabbit
hydrochloric acid ... %	7647-01-0	inhalation: vapour	LC50	1,562 mg/l/4h	rat

Skin corrosion/irritation

Causes mild skin irritation.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

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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

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

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.

Other information

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
tetrasodium ethylenediaminetetraacetate	64-02-8	LC50	$>100 \text{ mg/l}$	fish	96 h
tetrasodium ethylenediaminetetraacetate	64-02-8	EC50	$>114 \text{ mg/l}$	aquatic invertebrates	48 h
tetrasodium ethylenediaminetetraacetate	64-02-8	ErC50	$>60 \text{ mg/l}$	algae	72 h
tetrasodium ethylenediaminetetraacetate	64-02-8	NOEC	100 mg/l	fish	96 h
sodium chloride	7647-14-5	EC50	$4,026 \text{ mg/l}$	daphnia magna	48 h
sodium chloride	7647-14-5	LC50	$5,840 \text{ mg/l}$	fish	96 h
hydrochloric acid ... %	7647-01-0	LC50	20.5 mg/l	bluegill (Lepomis macrochirus)	96 h
hydrochloric acid ... %	7647-01-0	EC50	0.45 mg/l	daphnia magna	48 h
hydrochloric acid ... %	7647-01-0	EC50	0.73 mg/l	algae	72 h

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Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
tetrasodium ethylenediaminetetraacetate	64-02-8	NOEC	$\geq 35.1 \text{ mg/l}$	fish	35 d
tetrasodium ethylenediaminetetraacetate	64-02-8	LOEC	50 mg/l	aquatic invertebrates	21 d
tetrasodium ethylenediaminetetraacetate	64-02-8	growth (EbCx) 10%	$> 500 \text{ mg/l}$	microorganisms	30 min
sodium chloride	7647-14-5	LC50	874 mg/l	aquatic invertebrates	24 h
sodium chloride	7647-14-5	EC50	$2,430 \text{ mg/l}$	algae	120 h
sodium chloride	7647-14-5	NOEC	252 mg/l	fish	33 d
sodium chloride	7647-14-5	LOEC	352 mg/l	fish	33 d
sodium chloride	7647-14-5	growth rate (Er-Cx) 16%	$5,800 \text{ mg/l}$	algae	7 d

12.2 Persistence and degradability

Degradability of components of the mixture					
Name of substance	CAS No	Process	Degradation rate	Time	Method
tetrasodium ethylenediaminetetraacetate	64-02-8	oxygen depletion	78 %	56 d	

12.3 Bioaccumulative potential

Bioaccumulative potential of components of the mixture				
Name of substance	CAS No	BCF	Log KOW	BOD5/COD
tetrasodium ethylenediaminetetraacetate	64-02-8	1.8	-13.17 (25 °C)	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Does not contain any substances that are assessed to be PBT or vPvB $\geq 0.1\%$.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.

12.7 Other adverse effects

Data are not available.

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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/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Relevant provisions relating to waste (Basel Convention)

Properties of waste which render it hazardous

H8 Corrosives

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

14.1 UN number

ADR/RID	UN 1760
IMDG-Code	UN 1760
ICAO-TI	UN 1760

14.2 UN proper shipping name

ADR/RID	CORROSIVE LIQUID, N.O.S.
IMDG-Code	CORROSIVE LIQUID, N.O.S.
ICAO-TI	Corrosive liquid, n.o.s.
Technical name (Hazardous ingredients)	hydrochloric acid ... %, Thiomersal

14.3 Transport hazard class(es)

ADR/RID	8
IMDG-Code	8
ICAO-TI	8

14.4 Packing group

ADR/RID	III
IMDG-Code	III
ICAO-TI	III

14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

No data available.

Information for each of the UN Model Regulations

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Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) - additional information

Classification code C9
Danger label(s) 8



Special provisions (SP) 274
Excepted quantities (EQ) E1
Limited quantities (LQ) 5 L
Transport category (TC) 3
Tunnel restriction code (TRC) E
Hazard identification No 80

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) - additional information

Classification code C9
Danger label(s) 8



Special provisions (SP) 274
Excepted quantities (EQ) E1
Limited quantities (LQ) 5 L
Transport category (TC) 3
Hazard identification No 80

International Maritime Dangerous Goods Code (IMDG) - additional information

Marine pollutant -
Danger label(s) 8



Special provisions (SP) 223, 274
Excepted quantities (EQ) E1
Limited quantities (LQ) 5 L
EmS F-A, S-B
Stowage category A

International Civil Aviation Organization (ICAO-IATA/DGR) - additional information

Danger label(s) 8



Special provisions (SP) A3
Excepted quantities (EQ) E1
Limited quantities (LQ) 1 L

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SECTION 15: Regulatory information

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

There is no additional information.

15.2 Chemical Safety Assessment

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

SECTION 16: Other information

Revision

Date of compilation: 2022-12-05. (YYYY-MM-DD). Version number: 2.0.

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)
2.1		Classification acc. to GHS: change in the listing (table)
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.
8.1		Relevant DNELs of components of the mixture: change in the listing (table)
8.1		Relevant PNECs of components of the mixture: change in the listing (table)
9.1	Relative vapour density: this information is not available	
11.1		Acute toxicity estimate (ATE) of components of the mixture: change in the listing (table)
11.1		Acute toxicity of components of the mixture: change in the listing (table)
11.2	Information on other hazards: There is no additional information.	Information on other hazards
11.2		Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.
11.2		Other information: There is no additional information.
12.1		Aquatic toxicity (acute) of components of the mixture: change in the listing (table)
12.1		Aquatic toxicity (chronic) of components of the mixture: change in the listing (table)
12.2	Persistence and degradability: Data are not available.	Persistence and degradability
12.2		Degradability of components of the mixture: change in the listing (table)
12.3		Bioaccumulative potential of components of the mixture: change in the listing (table)
12.6	Endocrine disrupting properties: None of the ingredients are listed.	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.

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Section	Former entry (text/value)	Actual entry (text/value)
14.2	Technical name (Hazardous ingredients): hydrochloric acid ... %, organic compounds of mercury	Technical name (Hazardous ingredients): hydrochloric acid ... %, Thiomersal
14.7		Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) - additional information
14.7		Classification code: C9
14.7		Danger label(s): 8
14.7		Danger label(s): change in the listing (table)
14.7		Special provisions (SP): 274
14.7		Excepted quantities (EQ): E1
14.7		Limited quantities (LQ): 5 L
14.7		Transport category (TC): 3
14.7		Hazard identification No: 80
16		Abbreviations and acronyms: change in the listing (table)
16	Key literature references and sources for data: Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).	Key literature references and sources for data: Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").UN Recommendations on the Transport of Dangerous Good. Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
Acute Tox.	Acute toxicity
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)

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Abbr.	Descriptions of used abbreviations
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
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
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
GHS-UN	Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book")
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	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
LEL	Lower explosion limit (LEL)
LOEC	Lowest Observed Effect Concentration
log KOW	n-Octanol/water
Met. Corr.	Substance or mixture corrosive to metals
NOEC	No Observed Effect Concentration
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
Press. Gas	Gas under pressure
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure
UEL	Upper explosion limit (UEL)
vPvB	Very Persistent and very Bioaccumulative

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Key literature references and sources for data

Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").

UN Recommendations on the Transport of Dangerous Good. Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). 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 section 2 and 3)

Code	Text
H280	Contains gas under pressure; may explode if heated.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H303	May be harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H316	Causes mild skin irritation.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H333	May be harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H402	Harmful to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Disclaimer

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

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

1.1 Product identifier

Trade name **Human anti-adalimumab HRP-conjugate**
Article number M2915

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

Relevant identified uses For research use only

1.3 Details of the supplier of the safety data sheet

Sanquin Reagents B.V.
Plesmanlaan 125
1066 CX Amsterdam
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: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

This mixture does not meet the criteria for classification.

2.2 Label elements

Labelling

Not required.

- hazardous ingredients for labelling

reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1).

2.3 Other hazards

There is no additional information.

Results of PBT and vPvB assessment

Does not contain any substances that are assessed to be PBT or vPvB $\geq 0.1\%$.

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.

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SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

The product does not contain (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
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	CAS No 55965-84-9	< 1	Acute Tox. 4 / H302 Acute Tox. 3 / H311 Acute Tox. 4 / H332 Skin Corr. 1C / H314 Eye Dam. 1 / H318 Skin Sens. 1A / H317 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		

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. If eye irritation persists: Get medical advice/attention.

Following ingestion

Rinse mouth with water (only if the person is conscious). Call a doctor if you feel unwell.

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

None.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray; Alcohol resistant foam; Dry extinguishing powder; Carbon dioxide (CO₂);
Co-ordinate firefighting measures to the fire surroundings.

Unsuitable extinguishing media

Water jet.

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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. Co-ordinate 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 vapours/dust/spray/gases. Use personal protective equipment as required.

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.

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

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Managing of associated risks

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

Control of effects

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

Consideration of other advice

- Store in a well-ventilated place. Keep container tightly closed.
- packaging compatibilities
Keep only in original container.

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
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	DNEL	0.02 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	DNEL	0.04 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	DNEL	0.02 mg/m ³	human, inhalatory	consumer (private households)	chronic - local effects
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	DNEL	0.04 mg/m ³	human, inhalatory	consumer (private households)	acute - local effects
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	DNEL	0.09 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects

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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
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	DNEL	0.11 mg/kg bw/day	human, oral	consumer (private households)	acute - systemic effects

Relevant PNECs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	PNEC	3.39 µg/l	aquatic organisms	freshwater	short-term (single instance)
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	PNEC	3.39 µg/l	aquatic organisms	marine water	short-term (single instance)
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	PNEC	0.23 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	PNEC	0.027 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	PNEC	0.027 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	PNEC	0.01 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



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Chemical protective clothing.

- 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

PVC: polyvinyl chloride, CR: chloroprene (chlorobutadiene) rubber, Nitrile rubber

- breakthrough time of the glove material

Use gloves with a minimum breakthrough time of the glove material: >10 minutes (permeation: level 1).

- other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling. Provide eyewash stations and safety showers at the workplace.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Type: ABEK-P2 (combined filters against gases, vapours and particles, colour code: Brown/Grey/Yellow/Green/White).

Environmental exposure controls

Take appropriate precautions to avoid uncontrolled release into the environment. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	various
Odour	characteristic
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	100 °C
Evaporation rate	not determined
Flammability	non-combustible
Lower and upper explosion limit	LEL: UEL: not determined
Flash point	not applicable
Auto-ignition temperature	not relevant
Decomposition temperature	no data available
pH (value)	6.8 – 7.2
Kinematic viscosity	not determined

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Solubility(ies)

Water solubility	miscible in any proportion
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Partition coefficient n-octanol/water (log value)	this information is not available
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Vapour pressure	not determined
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Density	1 g/cm ³
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Particle characteristics	not relevant (liquid)
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9.2 Other information

There is no additional information.

Information with regard to physical hazard classes	hazard classes acc. to GHS (physical hazards): not relevant
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Other safety characteristics

Miscibility	Completely miscible with water.
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SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

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

Oxidisers.

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.

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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 GHS

This mixture does not meet the criteria for classification.

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
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	oral	457 mg/kg
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	dermal	660 mg/kg
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	inhalation: vapour	11 mg/4h
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	inhalation: dust/mist	2.36 mg/4h

Acute toxicity of components of the mixture					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	oral	LD50	457 mg/kg	rat
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	inhalation: dust/mist	LC50	2.36 mg/4h	rat
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	dermal	LD50	660 mg/kg	rabbit

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

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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

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

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.

Other information

There is no additional information.

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
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	LC50	0.19 mg/l	fish	96 h
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	EC50	0.16 mg/l	aquatic invertebrates	48 h
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	ErC50	19.9 µg/l	algae	72 h
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	NOEC	0.13 mg/l	fish	96 h

Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	LC50	0.07 mg/l	fish	14 d
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	EC50	>0.18 mg/l	aquatic invertebrates	21 d
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	ErC50	45.6 µg/l	algae	120 h

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Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	NOEC	$\geq 46.4 \mu\text{g/l}$	fish	35 d
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	LOEL	0.06 mg/l	fish	36 d
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)	55965-84-9	LOEC	0.144 mg/l	fish	28 d

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

Does not contain any substances that are assessed to be PBT or vPvB $\geq 0.1\%$.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.

12.7 Other adverse effects

Data are not available.

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/packagings

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

14.1	UN number	not subject to transport regulations
14.2	UN proper shipping name	not relevant
14.3	Transport hazard class(es)	none
14.4	Packing group	not assigned
14.5	Environmental hazards	non-environmentally hazardous acc. to the dangerous goods regulations

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14.6 Special precautions for user

There is no additional information.

14.7 Maritime transport in bulk according to IMO instruments

No data available.

Information for each of the UN Model Regulations

International Maritime Dangerous Goods Code (IMDG) - additional information

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - additional information

Not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

There is no additional information.

15.2 Chemical Safety Assessment

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

SECTION 16: Other information

Revision

Date of compilation: 2022-12-06. (YYYY-MM-DD). Version number: 2.0.

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.
3.2		Mixtures: change in the listing (table)
8.1		Relevant DNELs of components of the mixture: change in the listing (table)
8.1		Relevant PNECs of components of the mixture: change in the listing (table)
11.1		Acute toxicity estimate (ATE) of components of the mixture: change in the listing (table)
11.1		Acute toxicity of components of the mixture: change in the listing (table)
11.2	Information on other hazards: There is no additional information.	Information on other hazards
11.2		Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.
11.2		Other information: There is no additional information.
12.1		Aquatic toxicity (acute) of components of the mixture: change in the listing (table)

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Section	Former entry (text/value)	Actual entry (text/value)
12.1		Aquatic toxicity (chronic) of components of the mixture: change in the listing (table)
12.6	Endocrine disrupting properties: Information on this property is not available.	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.
16		Abbreviations and acronyms: change in the listing (table)
16	Key literature references and sources for data: Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book"). UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).	Key literature references and sources for data: Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book"). UN Recommendations on the Transport of Dangerous Good. Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
Acute Tox.	Acute toxicity
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
ATE	Acute Toxicity Estimate
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
ErC50	\equiv EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
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
GHS-UN	Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book")
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

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Abbr.	Descriptions of used abbreviations
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LEL	Lower explosion limit (LEL)
LOEC	Lowest Observed Effect Concentration
LOEL	Lowest Observed Effect Level
NOEC	No Observed Effect Concentration
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
Skin Sens.	Skin sensitisation
UEL	Upper explosion limit (UEL)
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").

UN Recommendations on the Transport of Dangerous Good. Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). 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 section 2 and 3)

Code	Text
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Disclaimer

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

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

1.1 Product identifier

Trade name **HPE Dilution Buffer**
Article number article number, M2940

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

Relevant identified uses For research use only
Uses advised against Do not use for squirting or spraying.

1.3 Details of the supplier of the safety data sheet

Sanquin Reagents B.V.
Plesmanlaan 125
1066 CX Amsterdam
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: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.16	substance or mixture corrosive to metals	1	Met. Corr. 1	H290
3.2	skin corrosion/irritation	3	Skin Irrit. 3	H316
3.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
4.1A	hazardous to the aquatic environment - acute hazard	3	Aquatic Acute 3	H402
4.1C	hazardous to the aquatic environment - chronic hazard	3	Aquatic Chronic 3	H412

For full text of H-phrases: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling

- signal word Danger

- pictograms

GHS05



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- hazard statements

H290	May be corrosive to metals.
H316	Causes mild skin irritation.
H318	Causes serious eye damage.
H412	Harmful to aquatic life with long lasting effects.

- precautionary statements

P234	Keep only in original packaging.
P273	Avoid release to the environment.
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.
P310	Immediately call a POISON CENTER/doctor.
P390	Absorb spillage to prevent material damage.
P406	Store in a corrosion resistant container with a resistant inner liner.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

- hazardous ingredients for labelling

Contains: tetrasodium ethylenediaminetetraacetate; hydrochloric acid ... %.

2.3 Other hazards

There is no additional information.

Results of PBT and vPvB assessment

Does not contain any substances that are assessed to be PBT or vPvB \geq 0.1%.

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of \geq 0.1%.



SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

The product does not contain (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 - < 2.5	Acute Tox. 4 / H302 Acute Tox. 4 / H332 Eye Dam. 1 / H318 STOT RE 2 / H373 Aquatic Acute 3 / H402		
sodium chloride	CAS No 7647-14-5	1 - < 2.5	Acute Tox. 5 / H303 Acute Tox. 5 / H333		
hydrochloric acid ... %	CAS No 7647-01-0	1 - < 2.5	Press. Gas C / H280 Met. Corr. 1 / H290 Acute Tox. 4 / H302 Skin Corr. 1B / H314 Eye Dam. 1 / H318 STOT SE 3 / H335 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		B(a) U(b)

Notes

B(a): The classification refers to an aqueous solution

U(b): The allocation to the group 'compressed gas' is based on the physical state in which the gas is packaged

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Remarks

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

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.

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. Immediately call a POISON CENTER/doctor.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

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: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray; Alcohol resistant foam; Dry extinguishing powder; Carbon dioxide (CO₂);
Co-ordinate firefighting measures to the fire surroundings.

Unsuitable extinguishing media

Water jet.

5.2 Special hazards arising from the substance or mixture

Substance or mixture corrosive to metals.

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. Co-ordinate 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.

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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 vapours/dust/spray/gases. Use personal protective equipment as required.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

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.

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

- corrosive conditions

Store in corrosive resistant container with a resistant inner liner.

- incompatible substances or mixtures

Keep away from alkalis, oxidising substances, acids.

Control of effects

Protect against external exposure, such as

High temperatures. UV-radiation/sunlight. Frost.

Consideration of other advice

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

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- packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

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 ³	human, inhalatory	worker (industry)	chronic - systemic effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	3 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	1.5 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	3 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	0.6 mg/m ³	human, inhalatory	consumer (private households)	chronic - local effects
tetrasodium ethylenediaminetetraacetate	64-02-8	DNEL	1.2 mg/m ³	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
sodium chloride	7647-14-5	DNEL	2,069 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
sodium chloride	7647-14-5	DNEL	2,069 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
sodium chloride	7647-14-5	DNEL	295.5 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
sodium chloride	7647-14-5	DNEL	295.5 mg/kg bw/day	human, dermal	worker (industry)	acute - systemic effects
sodium chloride	7647-14-5	DNEL	443.3 mg/m ³	human, inhalatory	consumer (private households)	chronic - systemic effects
sodium chloride	7647-14-5	DNEL	443.3 mg/m ³	human, inhalatory	consumer (private households)	acute - systemic effects
sodium chloride	7647-14-5	DNEL	126.7 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
sodium chloride	7647-14-5	DNEL	126.7 mg/kg bw/day	human, dermal	consumer (private households)	acute - systemic effects
sodium chloride	7647-14-5	DNEL	126.7 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects

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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
sodium chloride	7647-14-5	DNEL	126.7 mg/kg bw/day	human, oral	consumer (private households)	acute - systemic effects
hydrochloric acid ... %	7647-01-0	DNEL	8 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
hydrochloric acid ... %	7647-01-0	DNEL	15 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
hydrochloric acid ... %	7647-01-0	DNEL	8 mg/m ³	human, inhalatory	consumer (private households)	chronic - local effects
hydrochloric acid ... %	7647-01-0	DNEL	15 mg/m ³	human, inhalatory	consumer (private households)	acute - local effects

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	2.83 mg/l	aquatic organisms	freshwater	short-term (single instance)
tetrasodium ethylenediaminetetraacetate	64-02-8	PNEC	0.283 mg/l	aquatic organisms	marine water	short-term (single instance)
tetrasodium ethylenediaminetetraacetate	64-02-8	PNEC	50 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
tetrasodium ethylenediaminetetraacetate	64-02-8	PNEC	1.1 mg/kg	terrestrial organisms	soil	short-term (single instance)
sodium chloride	7647-14-5	PNEC	5 mg/l	aquatic organisms	freshwater	short-term (single instance)
sodium chloride	7647-14-5	PNEC	500 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
sodium chloride	7647-14-5	PNEC	4.86 mg/kg	terrestrial organisms	soil	short-term (single instance)
hydrochloric acid ... %	7647-01-0	PNEC	36 µg/l	aquatic organisms	freshwater	short-term (single instance)
hydrochloric acid ... %	7647-01-0	PNEC	36 µg/l	aquatic organisms	marine water	short-term (single instance)
hydrochloric acid ... %	7647-01-0	PNEC	36 µg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
hydrochloric acid ... %	7647-01-0	PNEC	45 µg/l	aquatic organisms	water	intermittent release

8.2 Exposure controls

Appropriate engineering controls
General ventilation.

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Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection

Skin protection



Chemical protective clothing.

- 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

PVC: polyvinyl chloride, CR: chloroprene (chlorobutadiene) rubber, Nitrile rubber

- material thickness

Use gloves with a minimum material thickness: $\geq 0,38$ mm.

- breakthrough time of the glove material

Use gloves with a minimum breakthrough time 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. Provide eyewash stations and safety showers at the workplace.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Type: ABEK-P2 (combined filters against gases, vapours and particles, colour code: Brown/Grey/Yellow/Green/White).

Environmental exposure controls

Take appropriate precautions to avoid uncontrolled release into the environment. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	various
Odour	characteristic
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	100 °C calculated value, referring to a component of the mixture
Evaporation rate	not determined
Flammability	non-combustible
Lower and upper explosion limit	LEL: UEL: not determined

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Flash point	not applicable
Auto-ignition temperature	not relevant
Decomposition temperature	no data available
pH (value)	7 – 8
Kinematic viscosity	not determined

Solubility(ies)

Water solubility	miscible in any proportion
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Partition coefficient n-octanol/water (log value)	this information is not available
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Vapour pressure	33,900 Torr at 25 °C calculated value, referring to a component of the mixture
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Density	not determined
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Particle characteristics	not relevant (liquid)
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9.2 Other information

There is no additional information.

Information with regard to physical hazard classes	there is no additional information
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Other safety characteristics

Miscibility	Completely miscible with water.
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SECTION 10: Stability and reactivity

10.1 Reactivity

Substance or mixture corrosive to metals.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

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

Oxidisers.

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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 GHS

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	>1,780 mg/kg
tetrasodium ethylenediaminetetraacetate	64-02-8	inhalation: dust/mist	1.5 mg/l/4h
sodium chloride	7647-14-5	oral	3,000 mg/kg
sodium chloride	7647-14-5	inhalation: dust/mist	>10.5 mg/l/4h
hydrochloric acid ... %	7647-01-0	oral	700 mg/kg

Acute toxicity of components of the mixture					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
tetrasodium ethylenediaminetetraacetate	64-02-8	oral	LD50	>1,780 - <2,000 mg/kg	rat
sodium chloride	7647-14-5	oral	LD50	3,000 mg/kg	rat
sodium chloride	7647-14-5	dermal	LD50	>10,000 mg/kg	rabbit
sodium chloride	7647-14-5	inhalation: dust/mist	LC50	>42 g/m ³ /1h	rat
hydrochloric acid ... %	7647-01-0	oral	LD50	700 mg/kg	rat
hydrochloric acid ... %	7647-01-0	dermal	LD50	>5,010 mg/kg	rabbit
hydrochloric acid ... %	7647-01-0	inhalation: vapour	LC50	1,562 mg/l/4h	rat

Skin corrosion/irritation

Causes mild skin irritation.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

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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

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

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.

Other information

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
tetrasodium ethylenediaminetetraacetate	64-02-8	LC50	$>100 \text{ mg/l}$	fish	96 h
tetrasodium ethylenediaminetetraacetate	64-02-8	EC50	$>114 \text{ mg/l}$	aquatic invertebrates	48 h
tetrasodium ethylenediaminetetraacetate	64-02-8	ErC50	$>60 \text{ mg/l}$	algae	72 h
tetrasodium ethylenediaminetetraacetate	64-02-8	NOEC	100 mg/l	fish	96 h
sodium chloride	7647-14-5	EC50	$4,026 \text{ mg/l}$	daphnia magna	48 h
sodium chloride	7647-14-5	LC50	$5,840 \text{ mg/l}$	fish	96 h
hydrochloric acid ... %	7647-01-0	LC50	20.5 mg/l	bluegill (Lepomis macrochirus)	96 h
hydrochloric acid ... %	7647-01-0	EC50	0.45 mg/l	daphnia magna	48 h
hydrochloric acid ... %	7647-01-0	EC50	0.73 mg/l	algae	72 h

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Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
tetrasodium ethylenediaminetetraacetate	64-02-8	NOEC	$\geq 35.1 \text{ mg/l}$	fish	35 d
tetrasodium ethylenediaminetetraacetate	64-02-8	LOEC	50 mg/l	aquatic invertebrates	21 d
tetrasodium ethylenediaminetetraacetate	64-02-8	growth (EbCx) 10%	$> 500 \text{ mg/l}$	microorganisms	30 min
sodium chloride	7647-14-5	LC50	874 mg/l	aquatic invertebrates	24 h
sodium chloride	7647-14-5	EC50	$2,430 \text{ mg/l}$	algae	120 h
sodium chloride	7647-14-5	NOEC	252 mg/l	fish	33 d
sodium chloride	7647-14-5	LOEC	352 mg/l	fish	33 d
sodium chloride	7647-14-5	growth rate (Er-Cx) 16%	$5,800 \text{ mg/l}$	algae	7 d

12.2 Persistence and degradability

Degradability of components of the mixture					
Name of substance	CAS No	Process	Degradation rate	Time	Method
tetrasodium ethylenediaminetetraacetate	64-02-8	oxygen depletion	78 %	56 d	

12.3 Bioaccumulative potential

Bioaccumulative potential of components of the mixture				
Name of substance	CAS No	BCF	Log KOW	BOD5/COD
tetrasodium ethylenediaminetetraacetate	64-02-8	1.8	-13.17 (25 °C)	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Does not contain any substances that are assessed to be PBT or vPvB $\geq 0.1\%$.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.

12.7 Other adverse effects

Data are not available.

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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/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Relevant provisions relating to waste (Basel Convention)

Properties of waste which render it hazardous

H8 Corrosives

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

14.1 UN number

ADR/RID	UN 1760
IMDG-Code	UN 1760
ICAO-TI	UN 1760

14.2 UN proper shipping name

ADR/RID	CORROSIVE LIQUID, N.O.S.
IMDG-Code	CORROSIVE LIQUID, N.O.S.
ICAO-TI	Corrosive liquid, n.o.s.
Technical name (Hazardous ingredients)	hydrochloric acid ... %, Thiomersal

14.3 Transport hazard class(es)

ADR/RID	8
IMDG-Code	8
ICAO-TI	8

14.4 Packing group

ADR/RID	III
IMDG-Code	III
ICAO-TI	III

14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

No data available.

Information for each of the UN Model Regulations

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Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) - additional information

Classification code C9

Danger label(s) 8



Special provisions (SP) 274

Excepted quantities (EQ) E1

Limited quantities (LQ) 5 L

Transport category (TC) 3

Tunnel restriction code (TRC) E

Hazard identification No 80

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) - additional information

Classification code C9

Danger label(s) 8



Special provisions (SP) 274

Excepted quantities (EQ) E1

Limited quantities (LQ) 5 L

Transport category (TC) 3

Hazard identification No 80

International Maritime Dangerous Goods Code (IMDG) - additional information

Marine pollutant -

Danger label(s) 8



Special provisions (SP) 223, 274

Excepted quantities (EQ) E1

Limited quantities (LQ) 5 L

EmS F-A, S-B

Stowage category A

International Civil Aviation Organization (ICAO-IATA/DGR) - additional information

Danger label(s) 8



Special provisions (SP) A3

Excepted quantities (EQ) E1

Limited quantities (LQ) 1 L

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SECTION 15: Regulatory information

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

There is no additional information.

15.2 Chemical Safety Assessment

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

SECTION 16: Other information

Revision

Date of compilation: 2022-12-06. (YYYY-MM-DD). Version number: 2.0.

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)
1.2	Uses advised against: Do not use for squirting or spraying. Not suitable for in vitro diagnostic use.	Uses advised against: Do not use for squirting or spraying.
2.1		Classification acc. to GHS: change in the listing (table)
2.2	- hazardous ingredients for labelling: tetrasodium ethylenediaminetetraacetate; hydrochloric acid ... %	- hazardous ingredients for labelling: Contains: tetrasodium ethylenediaminetetraacetate; hydrochloric acid ... %.
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.
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.	Mixtures: The product does not contain (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.
8.1		Relevant DNELs of components of the mixture: change in the listing (table)
8.1		Relevant PNECs of components of the mixture: change in the listing (table)
8.2	Breakthrough times of the glove material: Use gloves with a minimum breakthrough times of the glove material: >480 minutes (permeation: level 6).	Breakthrough time of the glove material: Use gloves with a minimum breakthrough time of the glove material: >480 minutes (permeation: level 6).
9.1	Relative vapour density: this information is not available	
11.1		Acute toxicity estimate (ATE) of components of the mixture: change in the listing (table)
11.1		Acute toxicity of components of the mixture: change in the listing (table)
11.2	Information on other hazards: There is no additional information.	Information on other hazards
11.2		Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.
11.2		Other information: There is no additional information.

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Section	Former entry (text/value)	Actual entry (text/value)
12.1		Aquatic toxicity (acute) of components of the mixture: change in the listing (table)
12.1		Aquatic toxicity (chronic) of components of the mixture: change in the listing (table)
12.2	Persistence and degradability: Data are not available.	Persistence and degradability
12.2		Degradability of components of the mixture: change in the listing (table)
12.3		Bioaccumulative potential of components of the mixture: change in the listing (table)
12.6	Endocrine disrupting properties: None of the ingredients are listed.	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.
14.2	Technical name (Hazardous ingredients): hydrochloric acid ... %, organic compounds of mercury	Technical name (Hazardous ingredients): hydrochloric acid ... %, Thiomersal
14.7		Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) - additional information
14.7		Classification code: C9
14.7		Danger label(s): 8
14.7		Danger label(s): change in the listing (table)
14.7		Special provisions (SP): 274
14.7		Excepted quantities (EQ): E1
14.7		Limited quantities (LQ): 5 L
14.7		Transport category (TC): 3
14.7		Hazard identification No: 80
16		Abbreviations and acronyms: change in the listing (table)
16	Key literature references and sources for data: Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book"). UN Recommendations on the Transport of Dangerous Goods. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).	Key literature references and sources for data: Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book"). UN Recommendations on the Transport of Dangerous Goods. Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

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Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
Acute Tox.	Acute toxicity
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
COD	Chemical oxygen demand
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
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
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
GHS-UN	Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book")
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	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
LEL	Lower explosion limit (LEL)
LOEC	Lowest Observed Effect Concentration
log KOW	n-Octanol/water
Met. Corr.	Substance or mixture corrosive to metals
NOEC	No Observed Effect Concentration

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Abbr.	Descriptions of used abbreviations
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
Press. Gas	Gas under pressure
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure
UEL	Upper explosion limit (UEL)
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").

UN Recommendations on the Transport of Dangerous Good. Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). 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 section 2 and 3)

Code	Text
H280	Contains gas under pressure; may explode if heated.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H303	May be harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H316	Causes mild skin irritation.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H333	May be harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H402	Harmful to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.



Safety Data Sheet

acc. to GHS-UN

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Disclaimer

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

Stop solution

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

1.1 Product identifier

Trade name **Stop solution**
Article number M1823

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

Relevant identified uses For research use only

1.3 Details of the supplier of the safety data sheet

Sanquin Reagents B.V.
Plesmanlaan 125
1066 CX Amsterdam
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: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.2	skin corrosion/irritation	3	Skin Irrit. 3	H316

For full text of H-phrases: see SECTION 16

2.2 Label elements

Labelling

- signal word Warning
- pictograms Not required.
- hazard statements
H316 Causes mild skin irritation.
- precautionary statements
P332+P313 If skin irritation occurs: Get medical advice/attention.

2.3 Other hazards

There is no additional information.

Results of PBT and vPvB assessment

Does not contain any substances that are assessed to be PBT or vPvB $\geq 0.1\%$.

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.

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SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

The product does not contain (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
sulphuric acid	CAS No 7664-93-9	1 - <2.5	Acute Tox. 5 / H303 Acute Tox. 3 / H331 Skin Corr. 1A / H314 Eye Dam. 1 / H318 Aquatic Acute 3 / H402 Aquatic Chronic 2 / H411		

Remarks

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

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.

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. If eye irritation persists: Get medical advice/attention.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

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.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray; Alcohol resistant foam; Dry extinguishing powder; Carbon dioxide (CO₂);
Co-ordinate firefighting measures to the fire surroundings.

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. Co-ordinate 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 vapours/dust/spray/gases. Use personal protective equipment as required.

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.

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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. Never add water to this product.
- handling of incompatible substances or mixtures
Do not mix with alkali.
- keep away from
Caustic solutions

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 effects

Protect against external exposure, such as

High temperatures. UV-radiation/sunlight. Frost.

Consideration of other advice

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

- packaging compatibilities

Keep only in original container.

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.

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
sulphuric acid	7664-93-9	DNEL	0.05 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
sulphuric acid	7664-93-9	DNEL	0.1 mg/m ³	human, inhalatory	worker (industry)	acute - local effects

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Relevant PNECs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
sulphuric acid	7664-93-9	PNEC	0.003 mg/l	aquatic organisms	freshwater	short-term (single instance)
sulphuric acid	7664-93-9	PNEC	0 mg/l	aquatic organisms	marine water	short-term (single instance)
sulphuric acid	7664-93-9	PNEC	8.8 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
sulphuric acid	7664-93-9	PNEC	0.002 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
sulphuric acid	7664-93-9	PNEC	0.002 mg/kg	aquatic organisms	marine sediment	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



Chemical protective clothing.

- 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

PVC: polyvinyl chloride, CR: chloroprene (chlorobutadiene) rubber, Nitrile rubber

- material thickness

Use gloves with a minimum material thickness: $\geq 0,38$ mm.

- breakthrough time of the glove material

Use gloves with a minimum breakthrough time 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. Provide eyewash stations and safety showers at the workplace.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Type: ABEK-P2 (combined filters against gases, vapours and particles, colour code: Brown/Grey/Yellow/Green/White).

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Environmental exposure controls

Take appropriate precautions to avoid uncontrolled release into the environment. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	clear
Odour	characteristic
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	100 °C calculated value, referring to a component of the mixture
Evaporation rate	not determined
Flammability	non-combustible
Lower and upper explosion limit	LEL: UEL: not determined
Flash point	not applicable
Auto-ignition temperature	not relevant
Decomposition temperature	no data available
pH (value)	0.8 – 1 (acid)
Kinematic viscosity	not determined

Solubility(ies)

Water solubility	miscible in any proportion
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Partition coefficient n-octanol/water (log value)	this information is not available
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Vapour pressure	not determined
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Density	not determined
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Particle characteristics	not relevant (liquid)
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9.2 Other information

There is no additional information.

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Information with regard to physical hazard classes	hazard classes acc. to GHS (physical hazards): not relevant
Other safety characteristics	
Miscibility	Completely miscible with water.

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

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

Bases. Oxidisers.

Release of flammable materials with:

Light metals (due to the release of hydrogen in an acid/alkaline medium)

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 GHS

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
sulphuric acid	7664-93-9	oral	2,140 mg/kg
sulphuric acid	7664-93-9	inhalation: vapour	3 mg/l/4h
sulphuric acid	7664-93-9	inhalation: dust/mist	0.85 mg/l/4h

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Acute toxicity of components of the mixture					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
sulphuric acid	7664-93-9	oral	LD50	2,140 mg/kg	rat
sulphuric acid	7664-93-9	inhalation: dust/ mist	LC50	0.85 mg/l/4h	mouse

Skin corrosion/irritation

Causes mild skin irritation.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

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

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

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.

Other information

There is no additional information.

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
sulphuric acid	7664-93-9	LC50	<28 mg/l	fish	96 h
sulphuric acid	7664-93-9	EC50	>100 mg/l	aquatic invertebrates	48 h
sulphuric acid	7664-93-9	ErC50	>100 mg/l	algae	72 h

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Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
sulphuric acid	7664-93-9	NOEC	0.31 mg/l	fish	213 d

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

Does not contain any substances that are assessed to be PBT or vPvB \geq 0.1%.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of \geq 0.1%.

12.7 Other adverse effects

Data are not available.

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/packagings

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

- | | |
|---|---|
| 14.1 UN number | not subject to transport regulations |
| 14.2 UN proper shipping name | not relevant |
| 14.3 Transport hazard class(es) | none |
| 14.4 Packing group | not assigned |
| 14.5 Environmental hazards | non-environmentally hazardous acc. to the dangerous goods regulations |
| 14.6 Special precautions for user | There is no additional information. |
| 14.7 Maritime transport in bulk according to IMO instruments | No data available. |

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Information for each of the UN Model Regulations

International Maritime Dangerous Goods Code (IMDG) - additional information

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - additional information

Not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

There is no additional information.

15.2 Chemical Safety Assessment

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

SECTION 16: Other information

Revision

Date of compilation: 2022-12-06. (YYYY-MM-DD). Version number: 2.0.

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)
2.1		Classification acc. to GHS: change in the listing (table)
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.
3.2		Mixtures: change in the listing (table)
9.1	Relative vapour density: this information is not available	
10.5	Incompatible materials: Oxidisers.	Incompatible materials: Bases. Oxidisers.
11.2	Information on other hazards: There is no additional information.	Information on other hazards
11.2		Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.
11.2		Other information: There is no additional information.
12.6	Endocrine disrupting properties: None of the ingredients are listed.	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0.1\%$.
16		Abbreviations and acronyms: change in the listing (table)

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Section	Former entry (text/value)	Actual entry (text/value)
16	Key literature references and sources for data: Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).	Key literature references and sources for data: Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").UN Recommendations on the Transport of Dangerous Good. Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
Acute Tox.	Acute toxicity
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
ATE	Acute Toxicity Estimate
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
ErC50	= EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
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
GHS-UN	Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book")
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
LEL	Lower explosion limit (LEL)
NOEC	No Observed Effect Concentration
PBT	Persistent, Bioaccumulative and Toxic

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Abbr.	Descriptions of used abbreviations
PNEC	Predicted No-Effect Concentration
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
UEL	Upper explosion limit (UEL)
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").

UN Recommendations on the Transport of Dangerous Good. Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). 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 section 2 and 3)

Code	Text
H303	May be harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H316	Causes mild skin irritation.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H402	Harmful to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Disclaimer

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