diagenode
Innovating Epigenetics Solutions

Auto Premium Bisulfite kit

C02030031

Flyleaf

Date of compilation: 2020-11-09

Bill of materials

Name of substance	Identifier	Number of pieces	Classification acc. to GHS	Pictograms	Page
Conversion reagent		5			2 – 10
Binding buffer		1	Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319		11 – 20
wash buffer		1			21 – 28
Desulphonation buffer		1	Skin Corr. 1B / H314 Eye Dam. 1 / H318 Carc. 1A / H350 STOT SE 3 / H336 Flam. Liq. 2 / H225		29 – 42
Elution buffer		1			43 – 50
Binding Beads		1	Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319		51 – 60

diagenode
Innovating Epigenetics Solutions

Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

Conversion reagent

version number: GHS 1.0 | date of compilation: 2020-11-05

SECTION 1: Identification

1.1 product identifier

trade name **Conversion reagent**

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

relevant identified uses for research use only, not for use in diagnostic or therapeutic procedures.

1.3 details of the supplier of the safety data sheet

Diagenode SA
LIEGE SCIENCE PARK Rue du Bois Saint-Jean, 3
4102 Seraing
Belgium

telephone: +32 4 364 20 50

1.4 emergency telephone number

emergency information service +32 4 364 20 50
this number is only available during the following office hours: Mon-Fri 09:00 AM - 05:00 PM

poison center		
country	**name**	**telephone**
United States	American Association of Poison Control Centers	1-800-222-1222

SECTION 2: Hazard(s) identification

2.1 classification of the substance or mixture

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

this mixture does not meet the criteria for classification.

2.2 label elements

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

- signal word not required
- pictograms not required

2.3 other hazards

there is no additional information.

hazards not otherwise classified

may be harmful if swallowed (GHS category 5: acutely toxic - oral).
may be harmful in contact with skin (GHS category 5: acutely toxic - dermal).
may be harmful if inhaled (GHS category 5: acutely toxic - inhalation).
harmful to aquatic life (GHS category 3: aquatic toxicity - acute).

results of PBT and vPvB assessment

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

SECTION 3: Composition/information on ingredients

3.1 substances

not relevant (mixture)

3.2 mixtures

description of the mixture

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. keep affected person warm, still and covered. take off immediately all contaminated clothing. in all cases of doubt, or when symptoms persist, seek medical advice. in case of unconsciousness place person in the recovery position. Never give anything by mouth.

following inhalation

if breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. provide fresh air.

following skin contact

wash with plenty of soap and water.

following eye contact

remove contact lenses, if present and easy to do. Continue rinsing. irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

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

none

SECTION 5: Fire-fighting measures

5.1 extinguishing media

suitable extinguishing media

water spray, BC-powder, carbon dioxide (CO2)

unsuitable extinguishing media

water jet

5.2 special hazards arising from the substance or mixture

hazardous combustion products

nitrogen oxides (NOx)

5.3 advice for firefighters

in case of fire and/or explosion do not breathe fumes. coordinate firefighting measures to the fire surroundings. do not allow firefighting water to enter drains or water courses. collect contaminated firefighting water separately. fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 personal precautions, protective equipment and emergency procedures

for non-emergency personnel

remove persons to safety.

for emergency responders

wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

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). collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

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

control of the effects

protect against external exposure, such as

frost

7.3 specific end use(s)

see section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 control parameters

this information is not available.

8.2 exposure controls

appropriate engineering controls

general ventilation.

individual protection measures (personal protective equipment)

eye/face protection

wear eye/face protection.

skin protection

- hand protection

wear suitable gloves. chemical protection gloves are suitable, which are tested according to EN 374. check leak-tightness/ impermeability prior to use. in the case of wanting to use the gloves again, clean them before taking off and air them well. 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.

- other protection measures

take recovery periods for skin regeneration. preventive skin protection (barrier creams/ointments) is recommended. wash hands thoroughly after handling.

respiratory protection

in case of inadequate ventilation wear respiratory protection.

environmental exposure controls

use appropriate container to avoid environmental contamination. keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 information on basic physical and chemical properties

appearance

physical state	liquid
color	various
odor	characteristic

other safety parameters

pH (value)	not determined
melting point/freezing point	not determined
initial boiling point and boiling range	not determined
flash point	not determined
evaporation rate	not determined
flammability (solid, gas)	not relevant, (fluid)
explosive limits	not determined

vapor pressure	not determined
density	not determined
vapor density	this information is not available
relative density	information on this property is not available
solubility(ies)	not determined

partition coefficient

- n-octanol/water (log KOW)	this information is not available

auto-ignition temperature	not determined
viscosity	not determined
explosive properties	none
oxidizing properties	none

9.2	**other information**	there is no additional information

SECTION 10: Stability and reactivity

10.1 reactivity

concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

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

there is no additional information.

10.6 hazardous decomposition products

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

SECTION 11: Toxicological information

11.1 information on toxicological effects

test data are not available for the complete mixture.

classification procedure

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

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

this mixture does not meet the criteria for classification.

acute toxicity

shall not be classified as acutely toxic.

GHS of the United Nations, annex 4: may be harmful if swallowed, in contact with skin or if inhaled.

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 sensitization

shall not be classified as a respiratory or skin sensitizer.

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.

SECTION 12: Ecological information

12.1 toxicity

harmful to aquatic life.

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

data are not available.

12.6 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. Refer to special instructions/safety data sheets.

waste treatment of containers/packages

completely emptied packages can be recycled. handle contaminated packages in the same way as the substance itself.

remarks

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

SECTION 14: Transport information

14.1	**UN number**	not subject to transport regulations
14.2	**UN proper shipping name**	not assigned
14.3	**transport hazard class(es)**	not assigned
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 transport in bulk according to Annex II of MARPOL and the IBC Code

the cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

transport of dangerous goods by road or rail (49 CFR US DOT)

not subject to transport regulations.

International Maritime Dangerous Goods Code (IMDG)

not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)

not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

category	rating	description
Chronic	/	none
Health	0	no significant risk to health
Flammability	0	material that will not burn under typical fire conditions
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

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

category	degree of hazard	description
Flammability	0	material that will not burn under typical fire conditions
Health	0	material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

15.2 Chemical Safety Assessment

chemical safety assessments for substances in this mixture were not carried out.

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

abbreviations and acronyms

abbr.	descriptions of used abbreviations
49 CFR US DOT	49 CFR U.S. Department of Transportation
DGR	Dangerous Goods Regulations (see IATA/DGR)
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
vPvB	Very Persistent and very Bioaccumulative

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.
health hazards, environmental hazards: the method for classification of the mixture is based on ingredients of the mixture (additivity formula).

disclaimer

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

diagenode
Innovating Epigenetics Solutions

Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

Binding buffer

version number: GHS 1.0 | date of compilation: 2020-11-05

SECTION 1: Identification

1.1 product identifier

trade name **Binding buffer**

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

relevant identified uses: for research use only, not for use in diagnostic or therapeutic procedures.

1.3 details of the supplier of the safety data sheet

Diagenode SA
LIEGE SCIENCE PARK Rue du Bois Saint-Jean, 3
4102 Seraing
Belgium

telephone: +32 4 364 20 50

1.4 emergency telephone number

emergency information service: +32 4 364 20 50
this number is only available during the following office hours: Mon-Fri 09:00 AM - 05:00 PM

poison center

country	name	telephone
United States	American Association of Poison Control Centers	1-800-222-1222

SECTION 2: Hazard(s) identification

2.1 classification of the substance or mixture

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

section	hazard class	category	hazard class and category	hazard statement
A.10	acute toxicity (oral)	4	Acute Tox. 4	H302
A.2	skin corrosion/irritation	2	Skin Irrit. 2	H315
A.3	serious eye damage/eye irritation	2	Eye Irrit. 2	H319

for full text of abbreviations: see SECTION 16.

2.2 label elements

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

- signal word: warning
- pictograms

GHS07

- hazard statements

H302 harmful if swallowed.
H315 causes skin irritation.
H319 causes serious eye irritation.

- precautionary statements

P270	do not eat, drink or smoke when using this product.
P280	wear protective gloves.
P301+P312	if swallowed: Call a poison center/doctor if you feel unwell.
P302+P352	if on skin: Wash with plenty of water.
P305+P351+P338	if in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	specific treatment (see on this label).
P330	rinse mouth.
P332+P313	if skin irritation occurs: Get medical advice/attention.
P337+P313	if eye irritation persists: Get medical advice/attention.
P362	take off contaminated clothing and wash it before reuse.
P501	dispose of contents/container to industrial combustion plant.

- hazardous ingredients for labelling Guanidinium chloride

2.3 other hazards

hazards not otherwise classified

may be harmful in contact with skin (GHS category 5: acutely toxic - dermal).
harmful to aquatic life (GHS category 3: aquatic toxicity - acute).

results of PBT and vPvB assessment

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

SECTION 3: Composition/information on ingredients

3.1 substances

not relevant (mixture)

3.2 mixtures

description of the mixture

name of substance	identifier	wt%	classification acc. to GHS	pictograms
Guanidinium chloride	CAS No 50-01-1	≤ 60	Acute Tox. 4 / H302 Acute Tox. 4 / H332 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319	

for full text of abbreviations: 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. keep affected person warm, still and covered. take off immediately all contaminated clothing. in all cases of doubt, or when symptoms persist, seek medical advice. in case of unconsciousness place person in the recovery position. Never give anything by mouth.

following inhalation

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

following skin contact

wash with plenty of soap and water.

following eye contact

remove contact lenses, if present and easy to do. Continue rinsing. irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

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

none

SECTION 5: Fire-fighting measures

5.1 extinguishing media

suitable extinguishing media

water spray, BC-powder, carbon dioxide (CO2)

unsuitable extinguishing media

water jet

5.2 special hazards arising from the substance or mixture

hazardous combustion products

carbon monoxide (CO), carbon dioxide (CO2)

5.3 advice for firefighters

in case of fire and/or explosion do not breathe fumes. coordinate firefighting measures to the fire surroundings. do not allow firefighting water to enter drains or water courses. collect contaminated firefighting water separately. fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 personal precautions, protective equipment and emergency procedures

for non-emergency personnel

remove persons to safety.

for emergency responders

wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

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). collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

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

control of the effects

protect against external exposure, such as

frost

7.3 specific end use(s)

see section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 control parameters

this information is not available.

relevant DNELs of components of the mixture

name of substance	CAS No	endpoint	threshold level	protection goal, route of exposure	used in	exposure time
Guanidinium chloride	50-01-1	DNEL	3.5 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Guanidinium chloride	50-01-1	DNEL	10.5 mg/m³	human, inhalatory	worker (industry)	acute - systemic effects
Guanidinium chloride	50-01-1	DNEL	1 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

8.2 exposure controls

appropriate engineering controls

general ventilation.

individual protection measures (personal protective equipment)

eye/face protection

wear eye/face protection.

skin protection

- hand protection

wear suitable gloves. chemical protection gloves are suitable, which are tested according to EN 374. check leak-tightness/impermeability prior to use. in the case of wanting to use the gloves again, clean them before taking off and air them well. 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.

- other protection measures

take recovery periods for skin regeneration. preventive skin protection (barrier creams/ointments) is recommended. wash hands thoroughly after handling.

respiratory protection

in case of inadequate ventilation wear respiratory protection.

environmental exposure controls

use appropriate container to avoid environmental contamination. keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 information on basic physical and chemical properties

appearance

physical state	liquid
color	colorless
odor	characteristic

other safety parameters

pH (value)	not determined
melting point/freezing point	not determined
initial boiling point and boiling range	not determined
flash point	not determined
evaporation rate	not determined
flammability (solid, gas)	not relevant, (fluid)
explosive limits	not determined
vapor pressure	not determined
density	not determined
vapor density	this information is not available
relative density	information on this property is not available
solubility(ies)	not determined

partition coefficient

- n-octanol/water (log KOW)	this information is not available
auto-ignition temperature	not determined
viscosity	not determined
explosive properties	none
oxidizing properties	none

9.2	**other information**	there is no additional information

SECTION 10: Stability and reactivity

10.1 reactivity

concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 chemical stability

see below "Conditions to avoid".

10.3 possibility of hazardous reactions

no known hazardous reactions.

10.4 conditions to avoid

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

10.5 incompatible materials

oxidizers

10.6 hazardous decomposition products

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

SECTION 11: Toxicological information

11.1 information on toxicological effects

test data are not available for the complete mixture.

classification procedure

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

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

acute toxicity

harmful if swallowed.

GHS of the United Nations, annex 4: may be harmful in contact with skin.

- acute toxicity estimate (ATE)

oral 1,113 $^{mg}/_{kg}$

acute toxicity estimate (ATE) of components of the mixture

name of substance	CAS No	exposure route	ATE
guanidinium chloride	50-01-1	oral	556.5 $^{mg}/_{kg}$
guanidinium chloride	50-01-1	inhalation: dust/mist	3.181 $^{mg}/_{l}$/4h

skin corrosion/irritation

causes skin irritation.

serious eye damage/eye irritation

causes serious eye irritation.

respiratory or skin sensitization

shall not be classified as a respiratory or skin sensitizer.

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.

SECTION 12: Ecological information

12.1 toxicity

harmful to aquatic life.

aquatic toxicity (acute) of components of the mixture

name of substance	CAS No	endpoint	value	species	exposure time
guanidinium chloride	50-01-1	LC50	1,758 $^{mg}/_{l}$	fish	48 h
guanidinium chloride	50-01-1	EC50	70.2 $^{mg}/_{l}$	aquatic invertebrates	48 h
guanidinium chloride	50-01-1	ErC50	33.5 $^{mg}/_{l}$	algae	72 h

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

data are not available.

12.6 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. Refer to special instructions/safety data sheets.

waste treatment of containers/packages

completely emptied packages can be recycled. handle contaminated packages in the same way as the substance itself.

remarks

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

SECTION 14: Transport information

14.1	**UN number**	not subject to transport regulations
14.2	**UN proper shipping name**	not assigned
14.3	**transport hazard class(es)**	not assigned
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 transport in bulk according to Annex II of MARPOL and the IBC Code

the cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

transport of dangerous goods by road or rail (49 CFR US DOT)

not subject to transport regulations.

International Maritime Dangerous Goods Code (IMDG)

not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)

not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

category	rating	description
Chronic	/	none
Health	2	temporary or minor injury may occur
Flammability	1	material that must be preheated before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

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

category	degree of hazard	description
Flammability	1	material that must be preheated before ignition can occur
Health	2	material that, under emergency conditions, can cause temporary incapacitation or residual injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

15.2 Chemical Safety Assessment

chemical safety assessments for substances in this mixture were not carried out.

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

abbreviations and acronyms

abbr.	descriptions of used abbreviations
49 CFR US DOT	49 CFR U.S. Department of Transportation
Acute Tox.	Acute toxicity
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
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
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization

abbr.	descriptions of used abbreviations
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
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
vPvB	Very Persistent and very Bioaccumulative

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.
health hazards, environmental hazards: the method for classification of the mixture is based on ingredients of the mixture (additivity formula).

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

code	text
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.

disclaimer

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

diagenode
Innovating Epigenetics Solutions

Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

wash buffer

version number: GHS 1.0 | date of compilation: 2020-11-05

SECTION 1: Identification

1.1 product identifier

trade name: **wash buffer**

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

relevant identified uses: for research use only, not for use in diagnostic or therapeutic procedures.

1.3 details of the supplier of the safety data sheet

Diagenode SA
LIEGE SCIENCE PARK Rue du Bois Saint-Jean, 3
4102 Seraing
Belgium

telephone: +32 4 364 20 50

1.4 emergency telephone number

emergency information service: +32 4 364 20 50
this number is only available during the following office hours: Mon-Fri 09:00 AM - 05:00 PM

poison center

country	name	telephone
United States	American Association of Poison Control Centers	1-800-222-1222

SECTION 2: Hazard(s) identification

2.1 classification of the substance or mixture

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

this mixture does not meet the criteria for classification.

2.2 label elements

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

not required

2.3 other hazards

results of PBT and vPvB assessment

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

SECTION 3: Composition/information on ingredients

3.1 substances

not relevant (mixture)

3.2 mixtures

description of the mixture

This mixture does not contain any potentially hazardous products.

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. keep affected person warm, still and covered. take off immediately all contaminated clothing. in all cases of doubt, or when symptoms persist, seek medical advice. in case of unconsciousness place person in the recovery position. Never give anything by mouth.

following inhalation

if breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. provide fresh air.

following skin contact

wash with plenty of soap and water.

following eye contact

remove contact lenses, if present and easy to do. Continue rinsing. irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

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

none

SECTION 5: Fire-fighting measures

5.1 extinguishing media

suitable extinguishing media

water spray, BC-powder, carbon dioxide (CO2)

unsuitable extinguishing media

water jet

5.2 special hazards arising from the substance or mixture

hazardous combustion products

nitrogen oxides (NOx)

5.3 advice for firefighters

in case of fire and/or explosion do not breathe fumes. coordinate firefighting measures to the fire surroundings. do not allow firefighting water to enter drains or water courses. collect contaminated firefighting water separately. fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 personal precautions, protective equipment and emergency procedures

for non-emergency personnel

remove persons to safety.

for emergency responders

wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

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). collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

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

control of the effects

protect against external exposure, such as

frost

7.3 specific end use(s)

see section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 control parameters

this information is not available.

8.2 exposure controls

appropriate engineering controls

general ventilation.

individual protection measures (personal protective equipment)

eye/face protection

wear eye/face protection.

skin protection

- hand protection

wear suitable gloves. chemical protection gloves are suitable, which are tested according to EN 374. check leak-tightness/ impermeability prior to use. in the case of wanting to use the gloves again, clean them before taking off and air them well. 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.

- other protection measures

take recovery periods for skin regeneration. preventive skin protection (barrier creams/ointments) is recommended. wash hands thoroughly after handling.

respiratory protection

in case of inadequate ventilation wear respiratory protection.

environmental exposure controls

use appropriate container to avoid environmental contamination. keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 information on basic physical and chemical properties

appearance

physical state	liquid
color	colorless
odor	characteristic

other safety parameters

pH (value)	not determined
melting point/freezing point	not determined
initial boiling point and boiling range	not determined
flash point	not determined
evaporation rate	not determined
flammability (solid, gas)	not relevant, (fluid)
explosive limits	not determined
vapor pressure	not determined
density	not determined
vapor density	this information is not available
relative density	information on this property is not available
solubility(ies)	not determined

partition coefficient

- n-octanol/water (log KOW)	this information is not available

	auto-ignition temperature	not determined
	viscosity	not determined
	explosive properties	none
	oxidizing properties	none
9.2	**other information**	there is no additional information

SECTION 10: Stability and reactivity

10.1 reactivity

concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

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

there is no additional information.

10.6 hazardous decomposition products

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

SECTION 11: Toxicological information

11.1 information on toxicological effects

test data are not available for the complete mixture.

classification procedure

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

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

this mixture does not meet the criteria for classification.

acute toxicity

shall not be classified as acutely toxic.

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 sensitization

shall not be classified as a respiratory or skin sensitizer.

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.

SECTION 12: Ecological information

12.1 toxicity

shall not be classified as hazardous to the aquatic environment.

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

data are not available.

12.6 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. Refer to special instructions/safety data sheets.

waste treatment of containers/packages

completely emptied packages can be recycled. handle contaminated packages in the same way as the substance itself.

remarks

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

SECTION 14: Transport information

14.1 UN number not subject to transport regulations

14.2 UN proper shipping name not assigned

14.3 transport hazard class(es) not assigned

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 transport in bulk according to Annex II of MARPOL and the IBC Code

the cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

transport of dangerous goods by road or rail (49 CFR US DOT)

not subject to transport regulations.

International Maritime Dangerous Goods Code (IMDG)

not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)

not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

category	rating	description
Chronic	/	none
Health	0	no significant risk to health
Flammability	0	material that will not burn under typical fire conditions
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

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

category	degree of hazard	description
Flammability	0	material that will not burn under typical fire conditions
Health	0	material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

15.2 Chemical Safety Assessment

chemical safety assessments for substances in this mixture were not carried out.

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

abbreviations and acronyms

abbr.	descriptions of used abbreviations
49 CFR US DOT	49 CFR U.S. Department of Transportation
DGR	Dangerous Goods Regulations (see IATA/DGR)
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
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
vPvB	Very Persistent and very Bioaccumulative

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.
health hazards, environmental hazards: the method for classification of the mixture is based on ingredients of the mixture (additivity formula).

disclaimer

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

diagenode
Innovating Epigenetics Solutions

Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

Desulphonation buffer

version number: GHS 1.0 | date of compilation: 2020-11-05

SECTION 1: Identification

1.1 product identifier

trade name **Desulphonation buffer**

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

relevant identified uses: for research use only, not for use in diagnostic or therapeutic procedures.

uses advised against: do not use for squirting or spraying. do not use for products which come into direct contact with the skin.

1.3 details of the supplier of the safety data sheet

Diagenode SA
LIEGE SCIENCE PARK Rue du Bois Saint-Jean, 3
4102 Seraing
Belgium

telephone: +32 4 364 20 50

1.4 emergency telephone number

emergency information service: +32 4 364 20 50
this number is only available during the following office hours: Mon-Fri 09:00 AM - 05:00 PM

poison center

country	name	telephone
United States	American Association of Poison Control Centers	1-800-222-1222

SECTION 2: Hazard(s) identification

2.1 classification of the substance or mixture

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

section	hazard class	category	hazard class and category	hazard statement
A.2	skin corrosion/irritation	1B	Skin Corr. 1B	H314
A.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
A.6	carcinogenicity	1A	Carc. 1A	H350
A.8D	specific target organ toxicity - single exposure (narcotic effects, drowsiness)	3	STOT SE 3	H336
B.6	flammable liquid	2	Flam. Liq. 2	H225

for full text of abbreviations: see SECTION 16.

the most important adverse physicochemical, human health and environmental effects

skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis. the product is combustible and can be ignited by potential ignition sources.

2.2 label elements

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

- signal word danger

- pictograms

GHS02, GHS05, GHS07, GHS08

- hazard statements

H225	highly flammable liquid and vapor.
H314	causes severe skin burns and eye damage.
H336	may cause drowsiness or dizziness.
H350	may cause cancer.

- precautionary statements

P202	do not handle until all safety precautions have been read and understood.
P210	keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240	ground/bond container and receiving equipment.
P241	use explosion-proof electrical/ventilating/lighting equipment.
P242	use only non-sparking tools.
P243	take precautionary measures against static discharge.
P260	do not breathe dusts or mists.
P271	use only outdoors or in a well-ventilated area.
P280	wear protective gloves/eye protection/face protection.
P301+P330+P331	if swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	if on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	if inhaled: Remove person to fresh air and keep comfortable for breathing.
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.
P321	specific treatment (see on this label).
P363	wash contaminated clothing before reuse.
P370+P378	in case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.
P403+P233	store in a well-ventilated place. Keep container tightly closed.
P403+P235	store in a well-ventilated place. Keep cool.
P405	store locked up.
P501	dispose of contents/container to industrial combustion plant.

- hazardous ingredients for labelling Ethanol, Propan-2-ol, Sodium hydroxide

2.3 other hazards

results of PBT and vPvB assessment

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

SECTION 3: Composition/information on ingredients

3.1 substances

not relevant (mixture)

3.2 mixtures

description of the mixture

name of substance	identifier	wt%	classification acc. to GHS	pictograms
Ethanol	CAS No 64-17-5	30	Carc. 1A / H350 Flam. Liq. 2 / H225	
Propan-2-ol	CAS No 67-63-0	30	Eye Irrit. 2 / H319 STOT SE 3 / H336 Flam. Liq. 2 / H225	
Sodium hydroxide	CAS No 1310-73-2	2.5	Skin Corr. 1A / H314 Eye Dam. 1 / H318	

for full text of abbreviations: 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. keep affected person warm, still and covered. take off immediately all contaminated clothing. in all cases of doubt, or when symptoms persist, seek medical advice. in case of unconsciousness place person in the recovery position. Never give anything by mouth.

following inhalation

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

following skin contact

wash with plenty of soap and water.

following eye contact

remove contact lenses, if present and easy to do. Continue rinsing. irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

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

narcotic effects.

4.3 indication of any immediate medical attention and special treatment needed

none

SECTION 5: Fire-fighting measures

5.1 extinguishing media

suitable extinguishing media

water spray, BC-powder, carbon dioxide (CO2)

unsuitable extinguishing media

water jet

5.2 special hazards arising from the substance or mixture

in case of insufficient ventilation and/or in use, may form flammable/explosive vapor-air mixture. solvent vapors are heavier than air and may spread along floors. places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

hazardous combustion products

carbon monoxide (CO), carbon dioxide (CO2)

5.3 advice for firefighters

in case of fire and/or explosion do not breathe fumes. coordinate firefighting measures to the fire surroundings. do not allow firefighting water to enter drains or water courses. collect contaminated firefighting water separately. fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 personal precautions, protective equipment and emergency procedures

for non-emergency personnel

remove persons to safety.

for emergency responders

wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

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). collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

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. avoidance of ignition sources. keep away from sources of ignition - No smoking. take precautionary measures against static discharge. use only in well-ventilated areas. due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. ground/bond container and receiving equipment. use explosion-proof electrical/ventilating/lighting/equipment. use only non-sparking tools.

- specific notes/details

places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. vapors are heavier than air, spread along floors and form explosive mixtures with air. vapors may form explosive mixtures with air.

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

- explosive atmospheres

keep container tightly closed and in a well-ventilated place. use local and general ventilation. keep cool. protect from sunlight.

- flammability hazards

keep away from sources of ignition - No smoking. keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. take precautionary measures against static discharge. protect from sunlight.

control of the effects

protect against external exposure, such as

frost

- ventilation requirements

use local and general ventilation. ground/bond container and receiving equipment.

- packaging compatibilities

only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

7.3 specific end use(s)

see section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 control parameters

occupational exposure limit values (Workplace Exposure Limits)

country	name of agent	CAS No	identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	notation	source
US	sodium hydroxide	1310-73-2	REL						2		NIOSH REL
US	sodium hydroxide	1310-73-2	TLV®						2		ACGIH® 2019
US	sodium hydroxide	1310-73-2	PEL		2						29 CFR 1910.1000
US	sodium hydroxide (caustic soda)	1310-73-2	PEL (CA)						2		Cal/OSHA PEL
US	ethanol	64-17-5	TLV®			1,000					ACGIH® 2019
US	ethyl alcohol	64-17-5	REL	1,000 (10 h)	1,900 (10 h)						NIOSH REL
US	ethyl alcohol (ethanol)	64-17-5	PEL (CA)	1,000	1,900						Cal/OSHA PEL
US	ethyl alcohol (ethanol)	64-17-5	PEL	1,000	1,900						29 CFR 1910.1000
US	2-propanol	67-63-0	TLV®	200		400					ACGIH® 2019
US	isopropyl alcohol	67-63-0	PEL (CA)	400	980	500	1,225				Cal/OSHA PEL

occupational exposure limit values (Workplace Exposure Limits)

country	name of agent	CAS No	identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	notation	source
US	isopropyl alcohol	67-63-0	REL	400 (10 h)	980 (10 h)	500	1,225				NIOSH REL
US	isopropyl alcohol	67-63-0	PEL	400	980						29 CFR 1910.1000

notation

Ceiling-C	ceiling value is a limit value above which exposure should not occur
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified

biological limit values

country	name of agent	parameter	notation	identifier	value	source
US	isopropanol	acetone		BEI®	40 mg/l	ACGIH® 2019

relevant DNELs of components of the mixture

name of substance	CAS No	endpoint	threshold level	protection goal, route of exposure	used in	exposure time
Propan-2-ol	67-63-0	DNEL	500 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Propan-2-ol	67-63-0	DNEL	888 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Sodium hydroxide	1310-73-2	DNEL	1 mg/m³	human, inhalatory	worker (industry)	chronic - local effects

relevant PNECs of components of the mixture

name of substance	CAS No	endpoint	threshold level	organism	environmental compartment	exposure time
Propan-2-ol	67-63-0	PNEC	140.9 mg/l	aquatic organisms	freshwater	short-term (single instance)
Propan-2-ol	67-63-0	PNEC	140.9 mg/l	aquatic organisms	marine water	short-term (single instance)
Propan-2-ol	67-63-0	PNEC	2,251 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Propan-2-ol	67-63-0	PNEC	552 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Propan-2-ol	67-63-0	PNEC	552 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Propan-2-ol	67-63-0	PNEC	28 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

wear eye/face protection.

skin protection

- hand protection

wear suitable gloves. chemical protection gloves are suitable, which are tested according to EN 374. check leak-tightness/ impermeability prior to use. in the case of wanting to use the gloves again, clean them before taking off and air them well. 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.

- other protection measures

take recovery periods for skin regeneration. preventive skin protection (barrier creams/ointments) is recommended. wash hands thoroughly after handling.

respiratory protection

in case of inadequate ventilation wear respiratory protection.

environmental exposure controls

use appropriate container to avoid environmental contamination. keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 information on basic physical and chemical properties

appearance

physical state	liquid
color	colorless
odor	characteristic

other safety parameters

pH (value)	not determined
melting point/freezing point	not determined
initial boiling point and boiling range	not determined
flash point	not determined
evaporation rate	not determined
flammability (solid, gas)	not relevant, (fluid)
explosive limits	not determined
vapor pressure	not determined
density	not determined
vapor density	this information is not available
relative density	information on this property is not available

solubility(ies)	not determined

partition coefficient

- n-octanol/water (log KOW)	this information is not available

auto-ignition temperature	not determined
viscosity	not determined
explosive properties	none
oxidizing properties	none

9.2	**other information**	there is no additional information

SECTION 10: Stability and reactivity

10.1 reactivity

concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". the mixture contains reactive substance(s). risk of ignition.

if heated:

risk of ignition

10.2 chemical stability

see below "Conditions to avoid".

10.3 possibility of hazardous reactions

no known hazardous reactions.

10.4 conditions to avoid

keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

hints to prevent fire or explosion

use explosion-proof electrical/ventilating/lighting/equipment. use only non-sparking tools. take precautionary measures against static discharge.

10.5 incompatible materials

oxidizers

10.6 hazardous decomposition products

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

SECTION 11: Toxicological information

11.1 information on toxicological effects

test data are not available for the complete mixture.

classification procedure

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

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

acute toxicity

shall not be classified as acutely toxic.

skin corrosion/irritation

causes severe skin burns and eye damage.

serious eye damage/eye irritation

causes serious eye damage.

respiratory or skin sensitization

shall not be classified as a respiratory or skin sensitizer.

germ cell mutagenicity

shall not be classified as germ cell mutagenic.

carcinogenicity

may cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

name of substance	CAS No	classification	number
propan-2-ol	67-63-0	3	
ethanol	64-17-5	1	

legend

1	Carcinogenic to humans
3	Not classifiable as to carcinogenicity in humans

reproductive toxicity

shall not be classified as a reproductive toxicant.

specific target organ toxicity - single exposure

may cause drowsiness or dizziness.

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.

SECTION 12: Ecological information

12.1 toxicity

shall not be classified as hazardous to the aquatic environment.

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

data are not available.

12.6 other adverse effects

data are not available.

SECTION 13: Disposal considerations

13.1 waste treatment methods

waste treatment-relevant information

solvent reclamation/regeneration.

sewage disposal-relevant information

do not empty into drains. avoid release to the environment. Refer to special instructions/safety data sheets.

waste treatment of containers/packages

only packagings which are approved (e.g. acc. to DOT) may be used. 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**	2924
14.2	**UN proper shipping name**	Flammable liquid, corrosive, n.o.s.
	technical name (hazardous ingredients)	propan-2-ol, sodium hydroxide
14.3	**transport hazard class(es)**	
	class	3 (flammable liquids)
	subsidiary risk(s)	8 (corrosive effects)
14.4	**packing group**	II (substance presenting medium danger)
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 transport in bulk according to Annex II of MARPOL and the IBC Code

the cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

transport of dangerous goods by road or rail (49 CFR US DOT)

index number	2924
proper shipping name	Flammable liquid, corrosive, n.o.s.
- particulars in the shipper's declaration	UN2924, Flammable liquid, corrosive, n.o.s., (contains: propan-2-ol, sodium hydroxide), 3 (8), II
class	3
subsidiary risk(s)	8
packing group	II
danger label(s)	3+8

special provisions (SP)	IB2, T11, TP2, TP27

ERG No	132

International Maritime Dangerous Goods Code (IMDG)

UN number	2924
proper shipping name	FLAMMABLE LIQUID, CORROSIVE, N.O.S.
class	3
subsidiary risk(s)	8
marine pollutant	-
packing group	II
danger label(s)	3+8

special provisions (SP)	274
excepted quantities (EQ)	E2
limited quantities (LQ)	1 L
EmS	F-E, S-C
stowage category	B

International Civil Aviation Organization (ICAO-IATA/DGR)

UN number	2924
proper shipping name	Flammable liquid, corrosive, n.o.s.
class	3
subsidiary risk(s)	8
packing group	II
danger label(s)	3+8

special provisions (SP)	A3
excepted quantities (EQ)	E2
limited quantities (LQ)	0,5 L

SECTION 15: Regulatory information

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

category	rating	description
Chronic	*	chronic (long-term) health effects may result from repeated overexposure
Health	3	major injury likely unless prompt action is taken and medical treatment is given
Flammability	3	material that can be ignited under almost all ambient temperature conditions

category	rating	description
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

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

category	degree of hazard	description
Flammability	3	material that can be ignited under almost all ambient temperature conditions
Health	3	material that, under emergency conditions, can cause serious or permanent injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

15.2 Chemical Safety Assessment

chemical safety assessments for substances in this mixture were not carried out.

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

abbreviations and acronyms

abbr.	descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
ACGIH® 2019	From ACGIH®, 2019 TLVs® and BEIs® Book. Copyright 2019. Reprinted with permission. Information on the proper use of the TLVs® and BEIs®: http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presentations/tlv-bei-position-statement
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
Carc.	Carcinogenicity
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
DOT	Department of Transportation (USA)
EmS	Emergency Schedule
ERG No	Emergency Response Guidebook - Number
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association

abbr.	descriptions of used abbreviations
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
STEL	Short-term exposure limit
STOT SE	Specific target organ toxicity - single exposure
TLV®	Threshold Limit Values
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.
health hazards, environmental hazards: the method for classification of the mixture is based on ingredients of the mixture (additivity formula).

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

code	text
H225	Highly flammable liquid and vapor.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.

disclaimer

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

Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

Elution buffer

version number: GHS 1.0 | date of compilation: 2020-11-05

SECTION 1: Identification

1.1 product identifier

trade name: **Elution buffer**

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

relevant identified uses: for research use only, not for use in diagnostic or therapeutic procedures.

1.3 details of the supplier of the safety data sheet

Diagenode SA
LIEGE SCIENCE PARK Rue du Bois Saint-Jean, 3
4102 Seraing
Belgium

telephone: +32 4 364 20 50

1.4 emergency telephone number

emergency information service: +32 4 364 20 50
this number is only available during the following office hours: Mon-Fri 09:00 AM - 05:00 PM

poison center

country	name	telephone
United States	American Association of Poison Control Centers	1-800-222-1222

SECTION 2: Hazard(s) identification

2.1 classification of the substance or mixture

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

this mixture does not meet the criteria for classification.

2.2 label elements

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

not required

2.3 other hazards

results of PBT and vPvB assessment

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

SECTION 3: Composition/information on ingredients

3.1 substances

not relevant (mixture)

3.2 mixtures

description of the mixture

This mixture does not contain any potentially hazardous products.

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. keep affected person warm, still and covered. take off immediately all contaminated clothing. in all cases of doubt, or when symptoms persist, seek medical advice. in case of unconsciousness place person in the recovery position. Never give anything by mouth.

following inhalation

if breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. provide fresh air.

following skin contact

wash with plenty of soap and water.

following eye contact

remove contact lenses, if present and easy to do. Continue rinsing. irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

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

none

SECTION 5: Fire-fighting measures

5.1 extinguishing media

suitable extinguishing media

water spray, BC-powder, carbon dioxide (CO2)

unsuitable extinguishing media

water jet

5.2 special hazards arising from the substance or mixture

hazardous combustion products

nitrogen oxides (NOx)

5.3 advice for firefighters

in case of fire and/or explosion do not breathe fumes. coordinate firefighting measures to the fire surroundings. do not allow firefighting water to enter drains or water courses. collect contaminated firefighting water separately. fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 personal precautions, protective equipment and emergency procedures

for non-emergency personnel

remove persons to safety.

for emergency responders

wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

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). collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

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

control of the effects

protect against external exposure, such as

frost

7.3 specific end use(s)

see section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 control parameters

this information is not available.

8.2 exposure controls

appropriate engineering controls

general ventilation.

individual protection measures (personal protective equipment)

eye/face protection

wear eye/face protection.

skin protection

- hand protection

wear suitable gloves. chemical protection gloves are suitable, which are tested according to EN 374. check leak-tightness/ impermeability prior to use. in the case of wanting to use the gloves again, clean them before taking off and air them well. 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.

- other protection measures

take recovery periods for skin regeneration. preventive skin protection (barrier creams/ointments) is recommended. wash hands thoroughly after handling.

respiratory protection

in case of inadequate ventilation wear respiratory protection.

environmental exposure controls

use appropriate container to avoid environmental contamination. keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 information on basic physical and chemical properties

appearance

physical state	liquid
color	colorless
odor	characteristic

other safety parameters

pH (value)	not determined
melting point/freezing point	not determined
initial boiling point and boiling range	not determined
flash point	not determined
evaporation rate	not determined
flammability (solid, gas)	not relevant, (fluid)
explosive limits	not determined
vapor pressure	not determined
density	not determined
vapor density	this information is not available
relative density	information on this property is not available
solubility(ies)	not determined

partition coefficient

- n-octanol/water (log KOW)	this information is not available

	auto-ignition temperature	not determined
	viscosity	not determined
	explosive properties	none
	oxidizing properties	none
9.2	**other information**	there is no additional information

SECTION 10: Stability and reactivity

10.1 reactivity

concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

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

there is no additional information.

10.6 hazardous decomposition products

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

SECTION 11: Toxicological information

11.1 information on toxicological effects

test data are not available for the complete mixture.

classification procedure

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

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

this mixture does not meet the criteria for classification.

acute toxicity

shall not be classified as acutely toxic.

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 sensitization

shall not be classified as a respiratory or skin sensitizer.

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.

SECTION 12: Ecological information

12.1 toxicity

shall not be classified as hazardous to the aquatic environment.

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

data are not available.

12.6 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. Refer to special instructions/safety data sheets.

waste treatment of containers/packages

completely emptied packages can be recycled. handle contaminated packages in the same way as the substance itself.

remarks

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

SECTION 14: Transport information

14.1 UN number not subject to transport regulations

14.2 UN proper shipping name not assigned

14.3 transport hazard class(es) not assigned

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 transport in bulk according to Annex II of MARPOL and the IBC Code

the cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

transport of dangerous goods by road or rail (49 CFR US DOT)

not subject to transport regulations.

International Maritime Dangerous Goods Code (IMDG)

not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)

not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

category	rating	description
Chronic	/	none
Health	0	no significant risk to health
Flammability	0	material that will not burn under typical fire conditions
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

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

category	degree of hazard	description
Flammability	0	material that will not burn under typical fire conditions
Health	0	material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

15.2 Chemical Safety Assessment

chemical safety assessments for substances in this mixture were not carried out.

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

abbreviations and acronyms

abbr.	descriptions of used abbreviations
49 CFR US DOT	49 CFR U.S. Department of Transportation
DGR	Dangerous Goods Regulations (see IATA/DGR)
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
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
vPvB	Very Persistent and very Bioaccumulative

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.
health hazards, environmental hazards: the method for classification of the mixture is based on ingredients of the mixture (additivity formula).

disclaimer

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

diagenode
Innovating Epigenetics Solutions

Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

Binding Beads

version number: GHS 1.0 date of compilation: 2020-11-09

SECTION 1: Identification

1.1 product identifier

trade name **Binding Beads**

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

relevant identified uses for research use only, not for use in diagnostic or therapeutic procedures.

1.3 details of the supplier of the safety data sheet

Diagenode SA
LIEGE SCIENCE PARK Rue du Bois Saint-Jean, 3
4102 Seraing
Belgium

telephone: +32 4 364 20 50

1.4 emergency telephone number

emergency information service +32 4 364 20 50
this number is only available during the following office hours: Mon-Fri 09:00 AM - 05:00 PM

poison center

country	name	telephone
United States	American Association of Poison Control Centers	1-800-222-1222

SECTION 2: Hazard(s) identification

2.1 classification of the substance or mixture

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

section	hazard class	category	hazard class and category	hazard statement
A.10	acute toxicity (oral)	4	Acute Tox. 4	H302
A.2	skin corrosion/irritation	2	Skin Irrit. 2	H315
A.3	serious eye damage/eye irritation	2	Eye Irrit. 2	H319

for full text of abbreviations: see SECTION 16.

2.2 label elements

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

- signal word warning
- pictograms

GHS07

- hazard statements

H302 harmful if swallowed.
H315 causes skin irritation.
H319 causes serious eye irritation.

- precautionary statements

P270	do not eat, drink or smoke when using this product.
P280	wear protective gloves.
P301+P312	if swallowed: Call a poison center/doctor if you feel unwell.
P302+P352	if on skin: Wash with plenty of water.
P305+P351+P338	if in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	specific treatment (see on this label).
P330	rinse mouth.
P332+P313	if skin irritation occurs: Get medical advice/attention.
P337+P313	if eye irritation persists: Get medical advice/attention.
P362	take off contaminated clothing and wash it before reuse.
P501	dispose of contents/container to industrial combustion plant.

- hazardous ingredients for labelling Guanidinium chloride

2.3 other hazards

hazards not otherwise classified

may be harmful in contact with skin (GHS category 5: acutely toxic - dermal).
harmful to aquatic life (GHS category 3: aquatic toxicity - acute).

results of PBT and vPvB assessment

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

SECTION 3: Composition/information on ingredients

3.1 substances

not relevant (mixture)

3.2 mixtures

description of the mixture

name of substance	identifier	wt%	classification acc. to GHS	pictograms
Guanidinium chloride	CAS No 50-01-1	≤ 60	Acute Tox. 4 / H302 Acute Tox. 4 / H332 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319	

for full text of abbreviations: 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. keep affected person warm, still and covered. take off immediately all contaminated clothing. in all cases of doubt, or when symptoms persist, seek medical advice. in case of unconsciousness place person in the recovery position. Never give anything by mouth.

following inhalation

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

following skin contact

wash with plenty of soap and water.

following eye contact

remove contact lenses, if present and easy to do. Continue rinsing. irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

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

none

SECTION 5: Fire-fighting measures

5.1 extinguishing media

suitable extinguishing media

water spray, BC-powder, carbon dioxide (CO2)

unsuitable extinguishing media

water jet

5.2 special hazards arising from the substance or mixture

hazardous combustion products

carbon monoxide (CO), carbon dioxide (CO2)

5.3 advice for firefighters

in case of fire and/or explosion do not breathe fumes. coordinate firefighting measures to the fire surroundings. do not allow firefighting water to enter drains or water courses. collect contaminated firefighting water separately. fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 personal precautions, protective equipment and emergency procedures

for non-emergency personnel

remove persons to safety.

for emergency responders

wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

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). collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

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

control of the effects

protect against external exposure, such as

frost

7.3 specific end use(s)

see section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 control parameters

this information is not available.

relevant DNELs of components of the mixture

name of substance	CAS No	endpoint	threshold level	protection goal, route of exposure	used in	exposure time
Guanidinium chloride	50-01-1	DNEL	3.5 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Guanidinium chloride	50-01-1	DNEL	10.5 mg/m³	human, inhalatory	worker (industry)	acute - systemic effects
Guanidinium chloride	50-01-1	DNEL	1 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

8.2 exposure controls

appropriate engineering controls

general ventilation.

individual protection measures (personal protective equipment)

eye/face protection

wear eye/face protection.

skin protection

- hand protection

wear suitable gloves. chemical protection gloves are suitable, which are tested according to EN 374. check leak-tightness/impermeability prior to use. in the case of wanting to use the gloves again, clean them before taking off and air them well. 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.

- other protection measures

take recovery periods for skin regeneration. preventive skin protection (barrier creams/ointments) is recommended. wash hands thoroughly after handling.

respiratory protection

in case of inadequate ventilation wear respiratory protection.

environmental exposure controls

use appropriate container to avoid environmental contamination. keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 information on basic physical and chemical properties

appearance

physical state	liquid (suspension)
color	brown
odor	odorless

other safety parameters

pH (value)	not determined
melting point/freezing point	not determined
initial boiling point and boiling range	not determined
flash point	not determined
evaporation rate	not determined
flammability (solid, gas)	not relevant, (fluid)
explosive limits	not determined
vapor pressure	not determined
density	not determined
vapor density	this information is not available
relative density	information on this property is not available
solubility(ies)	not determined

partition coefficient

- n-octanol/water (log KOW)	this information is not available
auto-ignition temperature	not determined
viscosity	not determined
explosive properties	none
oxidizing properties	none

9.2	**other information**	there is no additional information

SECTION 10: Stability and reactivity

10.1 reactivity

concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 chemical stability

see below "Conditions to avoid".

10.3 possibility of hazardous reactions

no known hazardous reactions.

10.4 conditions to avoid

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

10.5 incompatible materials

oxidizers

10.6 hazardous decomposition products

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

SECTION 11: Toxicological information

11.1 information on toxicological effects

test data are not available for the complete mixture.

classification procedure

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

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

acute toxicity

harmful if swallowed.

GHS of the United Nations, annex 4: may be harmful in contact with skin.

- acute toxicity estimate (ATE)

oral 927.5 $^{mg}/_{kg}$

acute toxicity estimate (ATE) of components of the mixture			
name of substance	**CAS No**	**exposure route**	**ATE**
guanidinium chloride	50-01-1	oral	556.5 $^{mg}/_{kg}$
guanidinium chloride	50-01-1	inhalation: dust/mist	3.181 $^{mg}/_{l}$/4h

skin corrosion/irritation

causes skin irritation.

serious eye damage/eye irritation

causes serious eye irritation.

respiratory or skin sensitization

shall not be classified as a respiratory or skin sensitizer.

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.

SECTION 12: Ecological information

12.1 toxicity

harmful to aquatic life.

aquatic toxicity (acute) of components of the mixture

name of substance	CAS No	endpoint	value	species	exposure time
guanidinium chloride	50-01-1	LC50	1,758 $^{mg}/_{l}$	fish	48 h
guanidinium chloride	50-01-1	EC50	70.2 $^{mg}/_{l}$	aquatic invertebrates	48 h
guanidinium chloride	50-01-1	ErC50	33.5 $^{mg}/_{l}$	algae	72 h

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

data are not available.

12.6 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. Refer to special instructions/safety data sheets.

waste treatment of containers/packages

completely emptied packages can be recycled. handle contaminated packages in the same way as the substance itself.

remarks

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

SECTION 14: Transport information

14.1	**UN number**	not subject to transport regulations
14.2	**UN proper shipping name**	not assigned
14.3	**transport hazard class(es)**	not assigned
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 transport in bulk according to Annex II of MARPOL and the IBC Code

the cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

transport of dangerous goods by road or rail (49 CFR US DOT)

not subject to transport regulations.

International Maritime Dangerous Goods Code (IMDG)

not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)

not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

category	rating	description
Chronic	/	none
Health	2	temporary or minor injury may occur
Flammability	1	material that must be preheated before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

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

category	degree of hazard	description
Flammability	1	material that must be preheated before ignition can occur
Health	2	material that, under emergency conditions, can cause temporary incapacitation or residual injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

15.2 Chemical Safety Assessment

chemical safety assessments for substances in this mixture were not carried out.

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

abbreviations and acronyms

abbr.	descriptions of used abbreviations
49 CFR US DOT	49 CFR U.S. Department of Transportation
Acute Tox.	Acute toxicity
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
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
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization

abbr.	descriptions of used abbreviations
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
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
vPvB	Very Persistent and very Bioaccumulative

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.
health hazards, environmental hazards: the method for classification of the mixture is based on ingredients of the mixture (additivity formula).

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

code	text
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.

disclaimer

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