







Premium RRBS kit V2

C02030036

Flyleaf

Date of compilation: 2022-02-11

Bill of materials








| Name of substance | Identifier | Number of pieces | Classification acc. to GHS | Pictograms | Page |
|-------------------------------|------------|------------------|--|---|-----------|
| Enzyme buffer | | 1 | | | 3 – 10 |
| Restriction enzyme | | 1 | | | 11 – 19 |
| Ends preparation enzyme | | 1 | | | 20 – 28 |
| dNTP mix | | 1 | | | 29 – 36 |
| Unmethylated spike-in control | | 1 | | | 37 – 44 |
| Methylated spike-in control | | 1 | | | 45 – 52 |
| Adapter dilution buffer | | 1 | | | 53 – 60 |
| Ligation Buffer | | 1 | | | 61 – 68 |
| Ligase | | 1 | | | 69 – 77 |
| Primer mix | | 1 | | | 78 – 85 |
| MethylTaq Plus 2X Master Mix | | 1 | Acute Tox. 3 / H301 STOT SE 1 / H370 |   | 86 – 98 |
| 100x SYBR | | 1 | | | 99 – 106 |
| Resuspension buffer | | 1 | | | 107 – 114 |
| ChIP-seq grade water | | 1 | | | 115 – 122 |
| ChIP DNA Binding Buffer | | 1 | Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 |  | 123 – 132 |
| DNA Wash Buffer | | 1 | | | 133 – 140 |
| BS Conversion Reagent | | 1 | Acute Tox. 4 / H302 Eye Dam. 1 / H318 |   | 141 – 152 |
| BS Dilution Buffer | | 1 | Skin Corr. 1A / H314 Eye Dam. 1 / H318 |  | 153 – 163 |
| BS Solubilization Buffer | | 1 | | | 164 – 172 |

Premium RRBS kit V2

C02030036

Flyleaf

Date of compilation: 2022-02-11

| Name of substance | Identifier | Number of pieces | Classification acc. to GHS | Pictograms | Page |
|----------------------------------|------------|------------------|---|--|-----------|
| BS Reaction Buffer | | 1 | Eye Irrit. 2 / H319 STOT SE 3 / H336 Flam. Liq. 2 / H225 |   | 173 – 184 |
| BS Binding Buffer | | 1 | Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 |  | 185 – 194 |
| BS Wash Buffer (without ethanol) | | 1 | | | 195 – 202 |
| BS Desulphonation Buffer | | 1 | Skin Corr. 1B / H314 Eye Dam. 1 / H318 Carc. 1A / H350 STOT SE 3 / H336 Flam. Liq. 2 / H225 |     | 203 – 216 |
| BS Elution Buffer | | 1 | | | 217 – 224 |

Enzyme buffer

version number: GHS 1.0

date of compilation: 2020-04-28

SECTION 1: Identification

1.1 product identifier

trade name

Enzyme buffer

product code(s)

K09721004/K09821004

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

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

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

Enzyme buffer

version number: GHS 1.0

date of compilation: 2020-04-28

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

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.

Enzyme buffer

version number: GHS 1.0

date of compilation: 2020-04-28

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

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.

Enzyme buffer

version number: GHS 1.0

date of compilation: 2020-04-28

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 | 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 |
|-----------------------------|-----------------------------------|

Enzyme buffer

version number: GHS 1.0

date of compilation: 2020-04-28

| | |
|------------------------------|------------------------------------|
| 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.

Enzyme buffer

version number: GHS 1.0

date of compilation: 2020-04-28

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.

Enzyme buffer

version number: GHS 1.0

date of compilation: 2020-04-28

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**
national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | 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).

Enzyme buffer

version number: GHS 1.0

date of compilation: 2020-04-28

| 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 |
| Cal ARB | California Air Resources Board |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

Restriction enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

SECTION 1: Identification

1.1 product identifier

trade name

Restriction enzyme

product code(s)

K09721001/K09821001

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

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

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

Restriction enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

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 (NO_x), 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.

Restriction enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

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 feedingsuffs.

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

| occupational exposure limit values (Workplace Exposure Limits) | | | | | | | | | | | |
|--|---------------|---------|------------|-----------|--------------------------|------------|---------------------------|-----------------|--------------------------------|--------------|------------------|
| country | name of agent | CAS No | identifier | TWA [ppm] | TWA [mg/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | notation | source |
| US | glycerine | 56-81-5 | REL | | | | | | | mist, appx-D | NIOSH REL |
| US | glycerol | 56-81-5 | PEL | | 15 | | | | | mist, i | 29 CFR 1910.1000 |
| US | glycerol | 56-81-5 | PEL | | 5 | | | | | mist, r | 29 CFR 1910.1000 |

notation

appx-D

Ceiling-C

see Appendix D - Substances with No Established RELs

ceiling value is a limit value above which exposure should not occur

Restriction enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

notation

| | |
|------|--|
| i | inhalable fraction |
| mist | as mists |
| r | respirable fraction |
| 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) |

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 | 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) |

Restriction enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

| | |
|------------------------------|---|
| 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

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.

Restriction enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

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.

Restriction enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

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 national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Restriction enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | none |
| Health | 0 | no significant risk to health |
| Flammability | 1 | material that must be preheated before ignition can occur |
| Physical hazard | 0 | material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive |
| Personal protection | - | |

NFPA® 704

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

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

15.2 Chemical Safety Assessment

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 |
| Cal ARB | California Air Resources Board |
| 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) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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") |
| 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) |

Restriction enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

| abbr. | descriptions of used abbreviations |
|-------|--|
| PBT | Persistent, Bioaccumulative and Toxic |
| PEL | Permissible exposure limit |
| ppm | Parts per million |
| STEL | Short-term exposure limit |
| TWA | Time-weighted average |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

Ends preparation enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

SECTION 1: Identification

1.1 product identifier

trade name

Ends preparation enzyme

product code(s)

K09721003/K09821003

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

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

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

Ends preparation enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

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 (NO_x), 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.

Ends preparation enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

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 feedingsuffs.

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

| occupational exposure limit values (Workplace Exposure Limits) | | | | | | | | | | | |
|--|---------------|---------|-------------|-----------|--------------------------|------------|---------------------------|-----------------|--------------------------------|--------------|-------------------|
| coun-try | name of agent | CAS No | identi-fier | TWA [ppm] | TWA [mg/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | nota-tion | source |
| US | glycerine | 56-81-5 | REL | | | | | | | mist, appx-D | NIOSH REL |
| US | glycerol | 56-81-5 | PEL | | 15 | | | | | mist, i | 29 CFR 1910.100 0 |
| US | glycerol | 56-81-5 | PEL | | 5 | | | | | mist, r | 29 CFR 1910.100 0 |

notation

appx-D

Ceiling-C

see Appendix D - Substances with No Established RELs

ceiling value is a limit value above which exposure should not occur

Ends preparation enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

notation

| | |
|------|--|
| i | inhalable fraction |
| mist | as mists |
| r | respirable fraction |
| 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) |

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 | 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) |

Ends preparation enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

| | |
|------------------------------|---|
| 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

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.

Ends preparation enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

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.

Ends preparation enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

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 national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Ends preparation enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | none |
| Health | 0 | no significant risk to health |
| Flammability | 1 | material that must be preheated before ignition can occur |
| Physical hazard | 0 | material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive |
| Personal protection | - | |

NFPA® 704

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

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

15.2 Chemical Safety Assessment

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 |
| Cal ARB | California Air Resources Board |
| 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) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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") |
| 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) |

Ends preparation enzyme

version number: GHS 1.0

date of compilation: 2020-04-28

| abbr. | descriptions of used abbreviations |
|-------|--|
| PBT | Persistent, Bioaccumulative and Toxic |
| PEL | Permissible exposure limit |
| ppm | Parts per million |
| STEL | Short-term exposure limit |
| TWA | Time-weighted average |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

dNTP mix

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

dNTP mix

product code(s)

K09721005/K09821005

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

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

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

dNTP mix

version number: GHS 1.0

date of compilation: 2020-05-04

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

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.

dNTP mix

version number: GHS 1.0

date of compilation: 2020-05-04

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

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.

dNTP mix

version number: GHS 1.0

date of compilation: 2020-05-04

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 | 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 |
|-----------------------------|-----------------------------------|

dNTP mix

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|------------------------------------|
| 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.

dNTP mix

version number: GHS 1.0

date of compilation: 2020-05-04

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.

dNTP mix

version number: GHS 1.0

date of compilation: 2020-05-04

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**
national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | 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).

dNTP mix

version number: GHS 1.0

date of compilation: 2020-05-04

| 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 |
| Cal ARB | California Air Resources Board |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

Unmethylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

Unmethylated spike-in control

product code(s)

K09721006/K09821006

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

e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

+32 4 364 20 50

this number is only available during the following of-
fice hours: Mon-Fri 09:00 AM - 05:00 PM

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

Unmethylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

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

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.

Unmethylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

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

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.

Unmethylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

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 | 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 |
|-----------------------------|-----------------------------------|

Unmethylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|------------------------------------|
| 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.

Unmethylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

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.

Unmethylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

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**
national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | 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).

Unmethylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

| 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 |
| Cal ARB | California Air Resources Board |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

Methylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

Methylated spike-in control

product code(s)

K09721007/K09821007

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

e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

+32 4 364 20 50

this number is only available during the following of-
fice hours: Mon-Fri 09:00 AM - 05:00 PM

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

Methylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

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

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.

Methylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

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

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.

Methylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

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 | 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 |
|-----------------------------|-----------------------------------|

Methylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|------------------------------------|
| 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.

Methylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

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.

Methylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

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**
national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | 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).

Methylated spike-in control

version number: GHS 1.0

date of compilation: 2020-05-04

| 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 |
| Cal ARB | California Air Resources Board |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

Adapter dilution buffer

version number: GHS 1.0

date of compilation: 2022-02-11

SECTION 1: Identification

1.1 product identifier

trade name

Adapter dilution buffer

product code(s)

K18021007

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

+32 4 364 20 50
this number is only available during the following of-
fice 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

of no significance

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.

Adapter dilution buffer

version number: GHS 1.0

date of compilation: 2022-02-11

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

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.

Adapter dilution buffer

version number: GHS 1.0

date of compilation: 2022-02-11

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

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.

Adapter dilution buffer

version number: GHS 1.0

date of compilation: 2022-02-11

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 |
| particle | not relevant (liquid) |
| 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) |
| 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 |
|-----------------------------|-----------------------------------|

Adapter dilution buffer

version number: GHS 1.0

date of compilation: 2022-02-11

| | |
|------------------------------|------------------------------------|
| 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.

Adapter dilution buffer

version number: GHS 1.0

date of compilation: 2022-02-11

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 endocrine disrupting properties

information on this property is not available.

12.7 other adverse effects

data are not available.

SECTION 13: Disposal considerations

13.1 waste treatment methods

sewage disposal-relevant information

do not empty into drains. avoid release to the environment. 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.

Adapter dilution buffer

version number: GHS 1.0

date of compilation: 2022-02-11

SECTION 14: Transport information

- 14.1 UN number** not subject to transport regulations
- 14.2 UN proper shipping name** not relevant
- 14.3 transport hazard class(es)** 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) - additional information

not subject to transport regulations.

International Maritime Dangerous Goods Code (IMDG) - additional information

not subject to IMDG.

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

not subject to ICAO-IATA.

SECTION 15: Regulatory information

15.1 safety, health and environmental regulations 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).

Adapter dilution buffer

version number: GHS 1.0

date of compilation: 2022-02-11

| 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.

Ligation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

Ligation Buffer

product code(s)

K09721015/K09821015

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

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

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

Ligation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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

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.

Ligation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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.

Ligation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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 | 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 |
|-----------------------------|-----------------------------------|

Ligation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|------------------------------------|
| 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

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)

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.

Ligation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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.

Ligation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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**
national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | none |
| Health | 0 | no significant risk to health |
| 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).

Ligation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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

15.2 Chemical Safety Assessment

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 |
| Cal ARB | California Air Resources Board |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

Ligase

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

Ligase

product code(s)

K09721014/K09821014

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

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

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

Ligase

version number: GHS 1.0

date of compilation: 2020-05-04

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 (NO_x), 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.

Ligase

version number: GHS 1.0

date of compilation: 2020-05-04

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

| occupational exposure limit values (Workplace Exposure Limits) | | | | | | | | | | | |
|--|---------------|---------|------------|-----------|--------------------------|------------|---------------------------|-----------------|--------------------------------|--------------|------------------|
| country | name of agent | CAS No | identifier | TWA [ppm] | TWA [mg/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | notation | source |
| US | glycerine | 56-81-5 | REL | | | | | | | mist, appx-D | NIOSH REL |
| US | glycerol | 56-81-5 | PEL | | 15 | | | | | mist, i | 29 CFR 1910.1000 |
| US | glycerol | 56-81-5 | PEL | | 5 | | | | | mist, r | 29 CFR 1910.1000 |

notation

appx-D

Ceiling-C

see Appendix D - Substances with No Established RELs

ceiling value is a limit value above which exposure should not occur

Ligase

version number: GHS 1.0

date of compilation: 2020-05-04

notation

| | |
|------|--|
| i | inhalable fraction |
| mist | as mists |
| r | respirable fraction |
| 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) |

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 | 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) |

Ligase

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|---|
| 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

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.

Ligase

version number: GHS 1.0

date of compilation: 2020-05-04

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.

Ligase

version number: GHS 1.0

date of compilation: 2020-05-04

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 national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Ligase

version number: GHS 1.0

date of compilation: 2020-05-04

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | none |
| Health | 0 | no significant risk to health |
| Flammability | 1 | material that must be preheated before ignition can occur |
| Physical hazard | 0 | material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive |
| Personal protection | - | |

NFPA® 704

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

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

15.2 Chemical Safety Assessment

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 |
| Cal ARB | California Air Resources Board |
| 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) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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") |
| 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) |

Ligase

version number: GHS 1.0

date of compilation: 2020-05-04

| abbr. | descriptions of used abbreviations |
|-------|--|
| PBT | Persistent, Bioaccumulative and Toxic |
| PEL | Permissible exposure limit |
| ppm | Parts per million |
| STEL | Short-term exposure limit |
| TWA | Time-weighted average |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

Primer mix

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

Primer mix

product code(s)

K09721016/K09821016

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

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

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

Primer mix

version number: GHS 1.0

date of compilation: 2020-05-04

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.

Primer mix

version number: GHS 1.0

date of compilation: 2020-05-04

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.

Primer mix

version number: GHS 1.0

date of compilation: 2020-05-04

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 | 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 |
|-----------------------------|-----------------------------------|

Primer mix

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|------------------------------------|
| 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.

Primer mix

version number: GHS 1.0

date of compilation: 2020-05-04

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.

Primer mix

version number: GHS 1.0

date of compilation: 2020-05-04

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**
national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | 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).

Primer mix

version number: GHS 1.0

date of compilation: 2020-05-04

| 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 |
| Cal ARB | California Air Resources Board |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

MethylTaq Plus 2X Master Mix

version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26

SECTION 1: Identification

1.1 product identifier

trade name **MethylTaq Plus 2X Master Mix**
product code(s) C09010012

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 of-
fice 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) | 3 | Acute Tox. 3 | H301 |
| A.8 | specific target organ toxicity - single exposure | 1 | STOT SE 1 | H370 |

for full text of abbreviations: see SECTION 16.

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

2.2 label elements

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

- signal word **danger**

- pictograms

GHS06, GHS08



MethylTaq Plus 2X Master Mix

version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26

- hazard statements

H301 toxic if swallowed.
H370 causes damage to organs.

- precautionary statements

P260 do not breathe dust/fume/gas/mist/vapors/spray.
P264 wash thoroughly after handling.
P270 do not eat, drink or smoke when using this product.
P301+P310 if swallowed: Immediately call a poison center/doctor.
P307+P311 if exposed: Call a poison center/doctor.
P321 specific treatment (see on this label).
P330 rinse mouth.
P405 store locked up.
P501 dispose of contents/container to industrial combustion plant.

- hazardous ingredients for labelling Tetramethylammonium chloride

2.3 other hazards

of no significance




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 |
|------------------------------|----------------|-------|--|---|
| Tetramethylammonium chloride | CAS No 75-57-0 | ≤ 2.5 | Acute Tox. 2 / H300 Acute Tox. 3 / H311 Skin Irrit. 2 / H315 STOT SE 1 / H370 |    |

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. 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.

MethylTaq Plus 2X Master Mix

version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26

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

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

personal protective equipment: see section 8. incompatible materials: see section 10. disposal considerations: see section 13.

MethylTaq Plus 2X Master Mix

version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26

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

- 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

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 |
| Tetramethylammonium chloride | 75-57-0 | DNEL | 2.9 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Tetramethylammonium chloride | 75-57-0 | DNEL | 0.4 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |

| relevant PNECs of components of the mixture | | | | | | |
|---|---------|----------|-----------------|-------------------|------------------------------|------------------------------|
| name of substance | CAS No | endpoint | threshold level | organism | environmental compartment | exposure time |
| Tetramethylammonium chloride | 75-57-0 | PNEC | 0.6 µg/l | aquatic organisms | freshwater | short-term (single instance) |
| Tetramethylammonium chloride | 75-57-0 | PNEC | 0.06 µg/l | aquatic organisms | marine water | short-term (single instance) |
| Tetramethylammonium chloride | 75-57-0 | PNEC | 6 mg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| Tetramethylammonium chloride | 75-57-0 | PNEC | 35 µg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| Tetramethylammonium chloride | 75-57-0 | PNEC | 3.5 µg/kg | aquatic organisms | marine sediment | short-term (single instance) |

MethylTaq Plus 2X Master Mix

version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26

| relevant PNECs of components of the mixture | | | | | | |
|---|---------|----------|-----------------|-----------------------|---------------------------|------------------------------|
| name of substance | CAS No | endpoint | threshold level | organism | environmental compartment | exposure time |
| Tetramethylammonium chloride | 75-57-0 | PNEC | 6.6 µg/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 | 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 |

MethylTaq Plus 2X Master Mix

version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26

| | |
|------------------------------|---|
| flammability (solid, gas) | not relevant, (fluid) |
| 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

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.

MethylTaq Plus 2X Master Mix

version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26

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

toxic if swallowed.

- acute toxicity estimate (ATE)

oral 250 mg/kg

| acute toxicity estimate (ATE) of components of the mixture | | | |
|--|---------|----------------|-----------|
| name of substance | CAS No | exposure route | ATE |
| Tetramethylammonium chloride | 75-57-0 | oral | 5 mg/kg |
| Tetramethylammonium chloride | 75-57-0 | dermal | 200 mg/kg |

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

causes damage to organs.

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.

MethylTaq Plus 2X Master Mix

version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26

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 endocrine disrupting properties

information on this property is not available.

12.7 other adverse effects

data are not available.

SECTION 13: Disposal considerations

13.1 waste treatment methods

sewage disposal-relevant information

do not empty into drains. avoid release to the environment. 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

| | |
|-----------|------|
| DOT | 2810 |
| IMDG-Code | 2810 |
| ICAO-TI | 2810 |

14.2 UN proper shipping name

| | |
|--|-------------------------------|
| DOT | Toxic liquid, organic, n.o.s. |
| IMDG-Code | TOXIC LIQUID, ORGANIC, N.O.S. |
| ICAO-TI | Toxic liquid, organic, n.o.s. |
| technical name (hazardous ingredients) | Tetramethylammonium chloride |

14.3 transport hazard class(es)

| | |
|-----------|-----|
| DOT | 6.1 |
| IMDG-Code | 6.1 |

MethylTaq Plus 2X Master Mix


version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26


| | |
|--|---|
| ICAO-TI | 6.1 |
| 14.4 packing group | |
| DOT | III |
| IMDG-Code | III |
| ICAO-TI | III |
| 14.5 environmental hazards | non-environmentally hazardous acc. to the dangerous goods regulations |
| 14.6 special precautions for user | 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) - additional information

| | |
|---|---|
| particulars in the shipper's declaration | UN2810, Toxic liquid, organic, n.o.s., (contains: Tetramethylammonium chloride), 6.1, III |
| danger label(s) | 6.1 |
|  | |
| special provisions (SP) | IB3, T7, TP1, TP28 |
| ERG No | 153 |

International Maritime Dangerous Goods Code (IMDG) - additional information

| | |
|---|----------|
| marine pollutant | - |
| danger label(s) | 6.1 |
|  | |
| special provisions (SP) | 223, 274 |
| excepted quantities (EQ) | E1 |
| limited quantities (LQ) | 5 L |
| EmS | F-A, S-A |
| stowage category | A |

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

| | |
|---|--------------|
| danger label(s) | 6.1 |
|  | |
| special provisions (SP) | A3, A4, A137 |
| excepted quantities (EQ) | E1 |
| limited quantities (LQ) | 2 L |

MethylTaq Plus 2X Master Mix

version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26

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 | 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 | 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

indication of changes (revised safety data sheet)

| section | former entry (text/value) | actual entry (text/value) | safety-relevant |
|---------|--|--|-----------------|
| 1.1 | product code(s): K09721018/K09821018 | product code(s): C09010012 | yes |
| 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 e-mail: info@diagenode.com | 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 | yes |
| 1.4 | | poison center: change in the listing (table) | yes |

MethylTaq Plus 2X Master Mix

version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26

| section | former entry (text/value) | actual entry (text/value) | safety-rel- evant |
|---------|---|--|----------------------|
| 2.3 | other hazards | other hazards: of no significance | yes |
| 2.3 | results of PBT and vPvB assessment: this mixture does not contain any substances that are assessed to be a PBT or a vPvB. | | yes |
| 9.1 | explosive limits: not determined | | yes |
| 12.6 | other adverse effects: data are not available. | endocrine disrupting properties: information on this property is not available. | yes |
| 14.1 | UN number: 2810 | UN number | yes |
| 14.1 | | DOT: 2810 | yes |
| 14.1 | | IMDG-Code: 2810 | yes |
| 14.1 | | ICAO-TI: 2810 | yes |
| 14.2 | UN proper shipping name: Toxic liquid, organic, n.o.s. | UN proper shipping name | yes |
| 14.2 | | DOT: Toxic liquid, organic, n.o.s. | yes |
| 14.2 | | IMDG-Code: TOXIC LIQUID, ORGANIC, N.O.S. | yes |
| 14.2 | | ICAO-TI: Toxic liquid, organic, n.o.s. | yes |
| 14.3 | class: 6.1 (toxic substances) | | yes |
| 14.3 | | DOT: 6.1 | yes |
| 14.3 | | IMDG-Code: 6.1 | yes |
| 14.3 | | ICAO-TI: 6.1 | yes |
| 14.4 | packing group: III (substance presenting low danger) | packing group | yes |
| 14.4 | | DOT: III | yes |
| 14.4 | | IMDG-Code: III | yes |
| 14.4 | | ICAO-TI: III | yes |
| 14.7 | index number: 2810 | | yes |
| 14.7 | proper shipping name: Toxic liquid, organic, n.o.s. | | yes |
| 14.7 | class: 6.1 | | yes |

MethylTaq Plus 2X Master Mix

version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26

| section | former entry (text/value) | actual entry (text/value) | safety-rel- evant |
|---------|---|--|----------------------|
| 14.7 | packing group: III | | yes |
| 14.7 | UN number: 2810 | | yes |
| 14.7 | proper shipping name: TOXIC LIQUID, ORGANIC, N.O.S. | | yes |
| 14.7 | class: 6.1 | | yes |
| 14.7 | packing group: III | | yes |
| 14.7 | UN number: 2810 | | yes |
| 14.7 | proper shipping name: Toxic liquid, organic, n.o.s. | | yes |
| 14.7 | class: 6.1 | | yes |
| 14.7 | packing group: III | | yes |
| 15.1 | national regulations (United States) | | yes |
| 15.1 | VOC content: Regulated Volatile Organic Compounds (VOC-EPA): Regulated Volatile Organic Compounds (VOC-Cal ARB): | | yes |
| 16 | | abbreviations and acronyms: change in the listing (table) | yes |

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 |
| DOT | Department of Transportation (USA) |
| EmS | Emergency Schedule |
| ERG No | Emergency Response Guidebook - Number |
| 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 |
| ICAO-TI | Technical instructions for the safe transport of dangerous goods by air |

MethylTaq Plus 2X Master Mix

version number: GHS 2.0
replaces version of: 2020-05-04 (GHS 1)

revision: 2021-01-26

| abbr. | descriptions of used abbreviations |
|----------------|---|
| IMDG | International Maritime Dangerous Goods Code |
| IMDG-Code | 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 |
| PNEC | Predicted No-Effect Concentration |
| RTECS | Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information) |
| Skin Corr. | Corrosive to skin |
| Skin Irrit. | Irritant to skin |
| STOT SE | Specific target organ toxicity - single exposure |
| 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 |
|------|-----------------------------|
| H300 | Fatal if swallowed. |
| H301 | Toxic if swallowed. |
| H311 | Toxic in contact with skin. |
| H315 | Causes skin irritation. |
| H370 | Causes damage to organs. |

disclaimer

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

100x SYBR

version number: GHS 1.0

date of compilation: 2020-05-26

SECTION 1: Identification

1.1 product identifier

trade name

100x SYBR

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

e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

+32 4 364 20 50

this number is only available during the following of-
fice hours: Mon-Fri 09:00 AM - 05:00 PM

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

100x SYBR

version number: GHS 1.0

date of compilation: 2020-05-26

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.

100x SYBR

version number: GHS 1.0

date of compilation: 2020-05-26

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.

100x SYBR

version number: GHS 1.0

date of compilation: 2020-05-26

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 | orange |
| 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 |
|-----------------------------|-----------------------------------|

100x SYBR

version number: GHS 1.0

date of compilation: 2020-05-26

| | |
|------------------------------|------------------------------------|
| 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.

100x SYBR

version number: GHS 1.0

date of compilation: 2020-05-26

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.

100x SYBR

version number: GHS 1.0

date of compilation: 2020-05-26

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**
national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | 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).

100x SYBR

version number: GHS 1.0

date of compilation: 2020-05-26

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

15.2 Chemical Safety Assessment

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 |
| Cal ARB | California Air Resources Board |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

Resuspension buffer

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

Resuspension buffer

product code(s)

K09721017/K09821017

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

e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

+32 4 364 20 50

this number is only available during the following of-
fice hours: Mon-Fri 09:00 AM - 05:00 PM

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

Resuspension buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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

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.

Resuspension buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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

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.

Resuspension buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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 | 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 |
|-----------------------------|-----------------------------------|

Resuspension buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|------------------------------------|
| 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.

Resuspension buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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.

Resuspension buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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**
national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | 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).

Resuspension buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| 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 |
| Cal ARB | California Air Resources Board |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

ChIP-seq grade water

version number: GHS 1.0

date of compilation: 2019-12-23

SECTION 1: Identification

1.1 product identifier

identification of the substance

ChIP-seq grade water

CAS number

7732-18-5

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

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

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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 substance 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
according to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 substances

name of substance

ChIP-seq grade water

identifiers

CAS No

7732-18-5

molecular formula

H₂O

molar mass

18.02 g/mol

ChIP-seq grade water

version number: GHS 1.0

date of compilation: 2019-12-23

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, alcohol resistant foam, BC-powder, carbon dioxide (CO₂)

unsuitable extinguishing media

water jet

5.2 special hazards arising from the substance or mixture

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.

ChIP-seq grade water

version number: GHS 1.0

date of compilation: 2019-12-23

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

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.

ChIP-seq grade water

version number: GHS 1.0

date of compilation: 2019-12-23

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 | odorless |

other safety parameters

| | |
|---|---|
| pH (value) | not determined |
| melting point/freezing point | 0 °C |
| initial boiling point and boiling range | 100 °C |
| flash point | not determined |
| evaporation rate | not determined |
| flammability (solid, gas) | not relevant, (fluid) |
| explosive limits | not determined |
| vapor pressure | not determined |
| density | not determined |
| vapor density | this information is not available |
| relative density | information on this property is not available |

solubility(ies)

| | |
|--------------------|----------------------------|
| - water solubility | miscible in any proportion |
|--------------------|----------------------------|

ChIP-seq grade water

version number: GHS 1.0

date of compilation: 2019-12-23

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

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

this substance 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.

ChIP-seq grade water

version number: GHS 1.0

date of compilation: 2019-12-23

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

waste treatment-relevant information

recycling/reclamation of other inorganic materials.

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.

ChIP-seq grade water

version number: GHS 1.0

date of compilation: 2019-12-23

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**
national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | 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).

ChIP-seq grade water

version number: GHS 1.0

date of compilation: 2019-12-23

| 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

no Chemical Safety Assessment has been carried out for this substance.

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 |
| Cal ARB | California Air Resources Board |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

disclaimer

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

ChIP DNA Binding Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

SECTION 1: Identification

1.1 product identifier

trade name

ChIP DNA Binding Buffer

product code(s)

K07391001

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

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

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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 cat- egory | hazard state- ment |
|---------|-----------------------------------|----------|--------------------------------|-----------------------|
| 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



ChIP DNA Binding Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

- 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 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

| name of substance | identifier | wt% | classification acc. to GHS | pictograms |
|----------------------|-------------------|------|---|---|
| Guanidinium chloride | CAS No 50-01-1 | ≤ 30 | 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.

ChIP DNA Binding Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

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.

ChIP DNA Binding Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

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/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Guanidinium chloride | 50-01-1 | DNEL | 10.5 mg/m ³ | 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.

ChIP DNA Binding Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

- 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 |
|-----------------------------|-----------------------------------|

ChIP DNA Binding Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

| | |
|------------------------------|------------------------------------|
| 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 if inhaled.

- acute toxicity estimate (ATE)

oral 1,855 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 |

ChIP DNA Binding Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

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.

ChIP DNA Binding Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

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**
- national regulations (United States)**
- VOC content**
- Regulated Volatile Organic Compounds (VOC-EPA): Regulated Volatile Organic Compounds (VOC-Cal ARB):
- industry or sector specific available guidance(s)**
- NPCA-HMIS® III**
- Hazardous Materials Identification System. American Coatings Association.

ChIP DNA Binding Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

| 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 |
| Cal ARB | California Air Resources Board |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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) |

ChIP DNA Binding Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

| abbr. | descriptions of used abbreviations |
|----------------|---|
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods Code |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

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

| code | text |
|------|--------------------------------|
| H302 | Harmful if swallowed. |
| 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.

DNA Wash Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

SECTION 1: Identification

1.1 product identifier

trade name

DNA Wash Buffer

product code(s)

K07391002

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

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

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

DNA Wash Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

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 (NO_x)

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.

DNA Wash Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

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.

DNA Wash Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

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 |
|-----------------------------|-----------------------------------|

DNA Wash Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

| | |
|------------------------------|------------------------------------|
| 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.

DNA Wash Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

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.

DNA Wash Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

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**
national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | 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).

DNA Wash Buffer

version number: GHS 1.0

date of compilation: 2020-06-08

| 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 |
| Cal ARB | California Air Resources Board |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

BS Conversion Reagent

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

BS Conversion Reagent

product code(s)

K09791001/K09891001

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

e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

+32 4 364 20 50

this number is only available during the following of-
fice hours: Mon-Fri 09:00 AM - 05:00 PM

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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 cat- egory | hazard state- ment |
|---------|-----------------------------------|----------|--------------------------------|-----------------------|
| A.10 | acute toxicity (oral) | 4 | Acute Tox. 4 | H302 |
| A.3 | serious eye damage/eye irritation | 1 | Eye Dam. 1 | H318 |

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 danger

- pictograms

GHS05, GHS07



- hazard statements

H302

harmful if swallowed.

H318

causes serious eye damage.

BS Conversion Reagent

version number: GHS 1.0

date of compilation: 2020-05-04

- precautionary statements
 - P270 do not eat, drink or smoke when using this product.
 - P280 wear eye protection/face protection.
 - P305+P351+P338 if in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P310 immediately call a poison center/doctor.
 - P330 rinse mouth.
 - P501 dispose of contents/container to industrial combustion plant.
- hazardous ingredients for labelling Disodium disulphite

2.3 other hazards

hazards not otherwise classified

contact with acids liberates toxic gas.
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

| name of substance | identifier | wt% | classification acc. to GHS | pictograms |
|---------------------|---------------------|-----|--|---|
| Disodium disulphite | CAS No 7681-57-4 | 100 | Acute Tox. 4 / H302 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. provide fresh air.

following skin contact

rinse skin with water/shower.

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.

BS Conversion Reagent

version number: GHS 1.0

date of compilation: 2020-05-04

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, foam, ABC-powder

unsuitable extinguishing media

water jet

5.2 special hazards arising from the substance or mixture

hazardous combustion products

sulfur oxides (SO_x)

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, take up mechanically

advice on how to clean up a spill

take up mechanically.

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.

BS Conversion Reagent

version number: GHS 1.0

date of compilation: 2020-05-04

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. take precautionary measures against static discharge. use only in well-ventilated areas. ground/bond container and receiving equipment.

- specific notes/details

dust deposits may accumulate on all deposition surfaces in a technical room. the product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

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

removal of dust deposits.

- ventilation requirements

use local and general ventilation.

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 | particulates not otherwise classified | | REL | | | | | | | appx-D | NIOSH REL |
| US | particulates not otherwise classified (PNOC) | | PEL | 1,766 | 15 | | | | | i, dust | 29 CFR 1910.1000 |
| US | particulates not otherwise classified (PNOC) | | PEL | 529.5 | 5 | | | | | partml, r, dust | 29 CFR 1910.1000 |
| US | Particulates not otherwise regulated | | PEL (CA) | | 10 | | | | | dust | Cal/ OSHA PEL |
| US | Particulates not otherwise regulated | | PEL (CA) | | 5 | | | | | r | Cal/ OSHA PEL |
| US | sodium metabisulfite | 7681-57-4 | PEL (CA) | | 5 | | | | | | Cal/ OSHA PEL |
| US | sodium metabisulfite | 7681-57-4 | REL | | 5 (10 h) | | | | | | NIOSH REL |

BS Conversion Reagent

version number: GHS 1.0

date of compilation: 2020-05-04

| occupational exposure limit values (Workplace Exposure Limits) | | | | | | | | | | | |
|--|----------------------|-----------|------------|-----------|--------------------------|------------|---------------------------|-----------------|--------------------------------|----------|-------------|
| country | name of agent | CAS No | identifier | TWA [ppm] | TWA [mg/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | notation | source |
| US | sodium metabisulfite | 7681-57-4 | TLV® | | 5 | | | | | | ACGIH® 2019 |

notation

appx-D

Ceiling-C

dust

i

partml

r

STEL

TWA

see Appendix D - Substances with No Established RELs

ceiling value is a limit value above which exposure should not occur

as dust

inhalable fraction

particles/ml

respirable fraction

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)

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)

| relevant DNELs of components of the mixture | | | | | | |
|---|-----------|----------|-----------------------|------------------------------------|-------------------|----------------------------|
| name of substance | CAS No | endpoint | threshold level | protection goal, route of exposure | used in | exposure time |
| Disodium disulphite | 7681-57-4 | DNEL | 225 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |

| relevant PNECs of components of the mixture | | | | | | |
|---|-----------|----------|-----------------|-------------------|------------------------------|------------------------------|
| name of substance | CAS No | endpoint | threshold level | organism | environmental compartment | exposure time |
| Disodium disulphite | 7681-57-4 | PNEC | 1 mg/l | aquatic organisms | freshwater | short-term (single instance) |
| Disodium disulphite | 7681-57-4 | PNEC | 0.1 mg/l | aquatic organisms | marine water | short-term (single instance) |
| Disodium disulphite | 7681-57-4 | PNEC | 75.4 mg/l | aquatic organisms | sewage treatment plant (STP) | 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

in the case of wanting to use the gloves again, clean them before taking off and air them well.

- other protection measures

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

respiratory protection

particulate filter device (EN 143).

environmental exposure controls

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

BS Conversion Reagent

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 9: Physical and chemical properties

9.1 information on basic physical and chemical properties

appearance

| | |
|----------------|----------------|
| physical state | solid (powder) |
| color | various |
| odor | characteristic |

other safety parameters

| | |
|---|---|
| pH (value) | not applicable |
| melting point/freezing point | not determined |
| initial boiling point and boiling range | not determined |
| flash point | not applicable |
| evaporation rate | not determined |
| flammability (solid, gas) | non-combustible |
| explosion limits of dust clouds | 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 relevant (solid matter) |
| explosive properties | none |
| oxidizing properties | none |

9.2

other information

there is no additional information

BS Conversion Reagent

version number: GHS 1.0

date of compilation: 2020-05-04

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.

hints to prevent fire or explosion

the product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

10.5 incompatible materials

there is no additional information.

release of toxic materials with:

acids

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 or if inhaled.

- acute toxicity estimate (ATE)

oral 1,420 mg/kg

| acute toxicity estimate (ATE) of components of the mixture | | | |
|--|-----------|----------------|-------------|
| name of substance | CAS No | exposure route | ATE |
| sodium metabisulfite | 7681-57-4 | oral | 1,420 mg/kg |

skin corrosion/irritation

shall not be classified as corrosive/irritant to skin.

serious eye damage/eye irritation

causes serious eye damage.

respiratory or skin sensitization

shall not be classified as a respiratory or skin sensitizer.

BS Conversion Reagent

version number: GHS 1.0

date of compilation: 2020-05-04

germ cell mutagenicity

shall not be classified as germ cell mutagenic.

carcinogenicity

shall not be classified as carcinogenic.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

| name of substance | CAS No | classification | number |
|----------------------|--------|----------------|--------|
| sodium metabisulfite | | 3 | |

legend

3 Not classifiable as to carcinogenicity in humans

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 |
| sodium metabisulfite | 7681-57-4 | LC50 | $\leq 464 \text{ mg/l}$ | fish | 96 h |
| sodium metabisulfite | 7681-57-4 | EC50 | 89 mg/l | aquatic invertebrates | 48 h |
| sodium metabisulfite | 7681-57-4 | ErC50 | 43.8 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.

BS Conversion Reagent

version number: GHS 1.0

date of compilation: 2020-05-04

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**
- national regulations (United States)**
- VOC content**
- Regulated Volatile Organic Compounds (VOC-EPA): Regulated Volatile Organic Compounds (VOC-Cal ARB):
- industry or sector specific available guidance(s)**
- NPCA-HMIS® III**
- Hazardous Materials Identification System. American Coatings Association.

BS Conversion Reagent

version number: GHS 1.0

date of compilation: 2020-05-04

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | none |
| Health | 3 | major injury likely unless prompt action is taken and medical treatment is given |
| Flammability | 0 | material that will not burn under typical fire conditions |
| Physical hazard | 1 | material that is normally stable but can become unstable (self-react) at high temperatures and pressures. Material may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors |
| 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 | 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 | W | material that can react with water with some release of energy, but not violently |

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 |
| Acute Tox. | Acute toxicity |
| ATE | Acute Toxicity Estimate |
| Cal/OSHA PEL | California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs) |
| Cal ARB | California Air Resources Board |
| 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 |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |

BS Conversion Reagent

version number: GHS 1.0

date of compilation: 2020-05-04

| abbr. | descriptions of used abbreviations |
|----------------|--|
| 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 |
| 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") |
| 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) |
| STEL | Short-term exposure limit |
| TLV® | Threshold Limit Values |
| TWA | Time-weighted average |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

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

| code | text |
|------|----------------------------|
| H302 | Harmful if swallowed. |
| H318 | Causes serious eye damage. |

BS Conversion Reagent

version number: GHS 1.0

date of compilation: 2020-05-04

disclaimer

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

BS Dilution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

BS Dilution Buffer

product code(s)

K09791002/K09891002

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

e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

+32 4 364 20 50

this number is only available during the following of-
fice hours: Mon-Fri 09:00 AM - 05:00 PM

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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 state- ment |
|---------|-----------------------------------|----------|---------------------------|-----------------------|
| A.2 | skin corrosion/irritation | 1A | Skin Corr. 1A | H314 |
| A.3 | serious eye damage/eye irritation | 1 | Eye Dam. 1 | H318 |

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.

2.2 label elements

labelling acc. to OSHA "Hazard Communication Standard" [29 CFR 1910.1200]

- signal word danger

BS Dilution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

- pictograms

GHS05



- hazard statements

H314 causes severe skin burns and eye damage.

- precautionary statements

P260 do not breathe dusts or mists.
P280 wear 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.
P405 store locked up.
P501 dispose of contents/container to industrial combustion plant.

- hazardous ingredients for labelling 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 |
|-------------------|---------------------|-----|---|------------|
| Sodium hydroxide | CAS No 1310-73-2 | ≤ 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.

BS Dilution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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

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

personal protective equipment: see section 8. incompatible materials: see section 10. disposal considerations: see section 13.

BS Dilution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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

- 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/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | 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 |

notation

Ceiling-C
STEL

ceiling value is a limit value above which exposure should not occur
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)

| relevant DNELs of components of the mixture | | | | | | |
|---|-----------|----------|---------------------|------------------------------------|-------------------|-------------------------|
| name of substance | CAS No | endpoint | threshold level | protection goal, route of exposure | used in | exposure time |
| Sodium hydroxide | 1310-73-2 | DNEL | 1 mg/m ³ | human, inhalatory | worker (industry) | chronic - local effects |

BS Dilution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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 | 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 |

BS Dilution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|---|
| 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

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)

acute toxicity

shall not be classified as acutely toxic.

skin corrosion/irritation

causes severe skin burns and eye damage.

BS Dilution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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

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

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.

BS Dilution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 14: Transport information

| | |
|--|---|
| 14.1 UN number | 1824 |
| 14.2 UN proper shipping name | Sodium hydroxide solutions |
| 14.3 transport hazard class(es) | |
| class | 8 (corrosive substances) |
| 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 | 1824 |
| proper shipping name | Sodium hydroxide solutions |
| - particulars in the shipper's declaration | UN1824, Sodium hydroxide solutions, 8, II |
| class | 8 |
| packing group | II |
| danger label(s) | 8 |



| | |
|-------------------------|-----------------------|
| special provisions (SP) | B2, IB2, N34, T7, TP2 |
| ERG No | 154 |

International Maritime Dangerous Goods Code (IMDG)

| | |
|----------------------|----------------------------|
| UN number | 1824 |
| proper shipping name | SODIUM HYDROXIDE SOLUTIONS |
| class | 8 |
| marine pollutant | - |
| packing group | II |
| danger label(s) | 8 |




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

BS Dilution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|---|----------------------------|
| segregation group | 18 - Alkalis |
| International Civil Aviation Organization (ICAO-IATA/DGR) | |
| UN number | 1824 |
| proper shipping name | Sodium hydroxide solutions |
| class | 8 |
| packing group | II |
| danger label(s) | 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 national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | none |
| Health | 3 | major injury likely unless prompt action is taken and medical treatment is given |
| 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 | 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.

BS Dilution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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) |
| Cal ARB | California Air Resources Board |
| 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 |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| ERG No | Emergency Response Guidebook - Number |
| Eye Dam. | Seriously damaging to the eye |
| Eye Irrit. | Irritant to the eye |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods Code |
| 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 |
| 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 |
| TLV® | Threshold Limit Values |
| TWA | Time-weighted average |

BS Dilution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| abbr. | descriptions of used abbreviations |
|-------|--|
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

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

| code | text |
|------|--|
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |

disclaimer

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

BS Solubilization Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

BS Solubilization Buffer

product code(s)

K09791003/K09891003

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

e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

+32 4 364 20 50

this number is only available during the following of-
fice hours: Mon-Fri 09:00 AM - 05:00 PM

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

BS Solubilization Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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

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.

BS Solubilization Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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 feedingsuffs.

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

| occupational exposure limit values (Workplace Exposure Limits) | | | | | | | | | | | |
|--|---------------|---------|------------|-----------|--------------------------|------------|---------------------------|-----------------|--------------------------------|--------------|------------------|
| country | name of agent | CAS No | identifier | TWA [ppm] | TWA [mg/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | notation | source |
| US | glycerine | 56-81-5 | REL | | | | | | | mist, appx-D | NIOSH REL |
| US | glycerol | 56-81-5 | PEL | | 15 | | | | | mist, i | 29 CFR 1910.1000 |
| US | glycerol | 56-81-5 | PEL | | 5 | | | | | mist, r | 29 CFR 1910.1000 |

notation

appx-D

Ceiling-C

see Appendix D - Substances with No Established RELs

ceiling value is a limit value above which exposure should not occur

BS Solubilization Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

notation

| | |
|------|--|
| i | inhalable fraction |
| mist | as mists |
| r | respirable fraction |
| 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) |

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 | 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) |

BS Solubilization Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|---|
| 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

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.

BS Solubilization Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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.

BS Solubilization Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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 national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

BS Solubilization Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | none |
| Health | 0 | no significant risk to health |
| Flammability | 1 | material that must be preheated before ignition can occur |
| Physical hazard | 0 | material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive |
| Personal protection | - | |

NFPA® 704

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

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

15.2 Chemical Safety Assessment

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 |
| Cal ARB | California Air Resources Board |
| 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) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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") |
| 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) |

BS Solubilization Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| abbr. | descriptions of used abbreviations |
|-------|--|
| PBT | Persistent, Bioaccumulative and Toxic |
| PEL | Permissible exposure limit |
| ppm | Parts per million |
| STEL | Short-term exposure limit |
| TWA | Time-weighted average |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

BS Reaction Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

BS Reaction Buffer

product code(s)

K09791004/K09891004

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

e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

+32 4 364 20 50

this number is only available during the following of-
fice hours: Mon-Fri 09:00 AM - 05:00 PM

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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 state- ment |
|---------|--|----------|---------------------------|-----------------------|
| A.3 | serious eye damage/eye irritation | 2 | Eye Irrit. 2 | H319 |
| A.8D | specific target organ toxicity - single exposure (narcotic ef- fects, 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

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, GHS07



BS Reaction Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

- hazard statements
 - H225 highly flammable liquid and vapor.
 - H319 causes serious eye irritation.
 - H336 may cause drowsiness or dizziness.
- precautionary statements
 - 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.
 - P261 avoid breathing dust/fume/gas/mist/vapors/spray.
 - P271 use only outdoors or in a well-ventilated area.
 - P280 wear protective gloves/eye protection/face protection.
 - 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.
 - P312 call a poison center/doctor if you feel unwell.
 - 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 Propan-2-ol

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 |
|-------------------|-------------------|------|--|---|
| Propan-2-ol | CAS No 67-63-0 | ≤ 50 | Eye Irrit. 2 / H319 STOT SE 3 / H336 Flam. Liq. 2 / H225 |   |

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. provide fresh air.

BS Reaction Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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, alcohol resistant foam, 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

BS Reaction Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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.

BS Reaction Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | notation | source |
| 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 |
| 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

STEL

TWA

ceiling value is a limit value above which exposure should not occur

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)

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/m ³ | 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 |

| 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) |

BS Reaction Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| 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 | 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) |

BS Reaction Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|---|
| 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) | |
| - water solubility | miscible in any proportion |
| 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.

BS Reaction Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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

shall not be classified as corrosive/irritant to skin.

serious eye damage/eye irritation

causes serious eye irritation.

respiratory or skin sensitization

shall not be classified as a respiratory or skin sensitizer.

germ cell mutagenicity

shall not be classified as germ cell mutagenic.

carcinogenicity

shall not be classified as carcinogenic.

| IARC Monographs on the Evaluation of Carcinogenic Risks to Humans | | | |
|---|---------|----------------|--------|
| name of substance | CAS No | classification | number |
| propan-2-ol | 67-63-0 | 3 | |

legend

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.

BS Reaction Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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 | 1219 |
| 14.2 UN proper shipping name | Isopropanol |
| 14.3 transport hazard class(es) | |
| class | 3 (flammable liquids) |
| 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 | 1219 |
| proper shipping name | Isopropanol |
| - particulars in the shipper's declaration | UN1219, Isopropanol, 3, II |
| class | 3 |
| packing group | II |
| danger label(s) | 3 |

BS Reaction Buffer

version number: GHS 1.0

date of compilation: 2020-05-04



special provisions (SP) IB2, T4, TP1

ERG No 129

International Maritime Dangerous Goods Code (IMDG)

UN number 1219

proper shipping name ISOPROPANOL

class 3

marine pollutant -

packing group II

danger label(s) 3



special provisions (SP) -

excepted quantities (EQ) E2

limited quantities (LQ) 1 L

EmS F-E, S-D

stowage category B

International Civil Aviation Organization (ICAO-IATA/DGR)

UN number 1219

proper shipping name Isopropanol

class 3

packing group II

danger label(s) 3



special provisions (SP) A180

excepted quantities (EQ) E2

limited quantities (LQ) 1 L

SECTION 15: Regulatory information

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

national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

BS Reaction Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | none |
| Health | 2 | temporary or minor injury may occur |
| Flammability | 3 | material that can be ignited under almost all ambient temperature 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 | 3 | material that can be ignited under almost all ambient temperature 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 |
|------------------|--|
| 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) |
| Cal ARB | California Air Resources Board |
| 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 |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| ERG No | Emergency Response Guidebook - Number |
| Eye Dam. | Seriously damaging to the eye |

BS Reaction Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| abbr. | descriptions of used abbreviations |
|----------------|---|
| 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 |
| 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) |
| STEL | Short-term exposure limit |
| STOT SE | Specific target organ toxicity - single exposure |
| TLV® | Threshold Limit Values |
| TWA | Time-weighted average |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

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

| code | text |
|------|------------------------------------|
| H225 | Highly flammable liquid and vapor. |
| H319 | Causes serious eye irritation. |
| H336 | May cause drowsiness or dizziness. |

disclaimer

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

BS Binding Buffer

version number: GHS 1.1

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

BS Binding Buffer

product code(s)

K09791005/K09891005

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

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

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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 cat- egory | hazard state- ment |
|---------|-----------------------------------|----------|--------------------------------|-----------------------|
| 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



BS Binding Buffer

version number: GHS 1.1

date of compilation: 2020-05-04

- 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).
- 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

| 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.

BS Binding Buffer

version number: GHS 1.1

date of compilation: 2020-05-04

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.

BS Binding Buffer

version number: GHS 1.1

date of compilation: 2020-05-04

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/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Guanidinium chloride | 50-01-1 | DNEL | 10.5 mg/m ³ | 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.

BS Binding Buffer

version number: GHS 1.1

date of compilation: 2020-05-04

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 | 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 |
|-----------------------------|-----------------------------------|

BS Binding Buffer

version number: GHS 1.1

date of compilation: 2020-05-04

| | |
|---------------------------|----------------|
| 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 or if inhaled.

- 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 |

BS Binding Buffer

version number: GHS 1.1

date of compilation: 2020-05-04

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.

BS Binding Buffer

version number: GHS 1.1

date of compilation: 2020-05-04

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**
- national regulations (United States)**
- VOC content**
- Regulated Volatile Organic Compounds (VOC-EPA): Regulated Volatile Organic Compounds (VOC-Cal ARB):
- industry or sector specific available guidance(s)**
- NPCA-HMIS® III**
- Hazardous Materials Identification System. American Coatings Association.

BS Binding Buffer

version number: GHS 1.1

date of compilation: 2020-05-04

| 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 |
| Cal ARB | California Air Resources Board |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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) |

BS Binding Buffer

version number: GHS 1.1

date of compilation: 2020-05-04

| abbr. | descriptions of used abbreviations |
|----------------|---|
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods Code |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

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

| code | text |
|------|--------------------------------|
| H302 | Harmful if swallowed. |
| 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.

BS Wash Buffer (without ethanol)

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

BS Wash Buffer (without ethanol)

product code(s)

K09791006/K09891006

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

e-mail: info@diagenode.com

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 |
| | 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.

BS Wash Buffer (without ethanol)

version number: GHS 1.0

date of compilation: 2020-05-04

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.

BS Wash Buffer (without ethanol)

version number: GHS 1.0

date of compilation: 2020-05-04

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.

BS Wash Buffer (without ethanol)

version number: GHS 1.0

date of compilation: 2020-05-04

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 | 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 |
|-----------------------------|-----------------------------------|

BS Wash Buffer (without ethanol)

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|------------------------------------|
| 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.

BS Wash Buffer (without ethanol)

version number: GHS 1.0

date of compilation: 2020-05-04

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.

BS Wash Buffer (without ethanol)

version number: GHS 1.0

date of compilation: 2020-05-04

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**
national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | 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).

BS Wash Buffer (without ethanol)

version number: GHS 1.0

date of compilation: 2020-05-04

| 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 |
| Cal ARB | California Air Resources Board |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

BS Desulphonation Buffer

product code(s)

K09791007/K09891007

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

e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

+32 4 364 20 50

this number is only available during the following of-
fice hours: Mon-Fri 09:00 AM - 05:00 PM

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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 state- ment |
|---------|--|----------|---------------------------|-----------------------|
| 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 ef- fects, 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.

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | 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 1910.100 0 |
| 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 1910.100 0 |
| 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 |

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| 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

STEL

TWA

ceiling value is a limit value above which exposure should not occur

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)

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.

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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 |

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|------------------------------------|
| 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.

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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.

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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 | 1993 |
| 14.2 UN proper shipping name | Flammable liquid, n.o.s. |
| technical name (hazardous ingredients) | propan-2-ol, sodium hydroxide |
| 14.3 transport hazard class(es) | |
| class | 3 (flammable liquids) |
| 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 | 1993 |
| proper shipping name | Flammable liquid, n.o.s. |
| - particulars in the shipper's declaration | UN1993, Flammable liquid, n.o.s., (contains: propan-2-ol, sodium hydroxide), 3, II |
| class | 3 |
| packing group | II |
| danger label(s) | 3 |
|  | |
| special provisions (SP) | IB2, T7, TP1, TP8, TP28 |
| ERG No | 128 |

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

International Maritime Dangerous Goods Code (IMDG)

| | |
|----------------------|--------------------------|
| UN number | 1993 |
| proper shipping name | FLAMMABLE LIQUID, N.O.S. |
| class | 3 |
| marine pollutant | - |
| packing group | II |
| danger label(s) | 3 |



| | |
|--------------------------|-----------------|
| special provisions (SP) | 274 |
| excepted quantities (EQ) | E2 |
| limited quantities (LQ) | 1 L |
| EmS | F-E, <u>S-E</u> |
| stowage category | B |

International Civil Aviation Organization (ICAO-IATA/DGR)

| | |
|----------------------|--------------------------|
| UN number | 1993 |
| proper shipping name | Flammable liquid, n.o.s. |
| class | 3 |
| packing group | II |
| danger label(s) | 3 |



| | |
|--------------------------|-----|
| special provisions (SP) | A3 |
| excepted quantities (EQ) | E2 |
| limited quantities (LQ) | 1 L |

SECTION 15: Regulatory information

15.1 safety, health and environmental regulations specific for the product in question national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|-----------------|--------|--|
| Chronic | * | chronic (long-term) health effects may result from repeated overexposure |
| Health | 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 |
| 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 |

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| category | rating | description |
|---------------------|--------|-------------|
| 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) |
| Cal ARB | California Air Resources Board |
| 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 |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

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

| code | text |
|------|--|
| 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. |

BS Desulphonation Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

disclaimer

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

BS Elution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

SECTION 1: Identification

1.1 product identifier

trade name

BS Elution Buffer

product code(s)

K09791008/K09891008

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
e-mail: info@diagenode.com

1.4 emergency telephone number

emergency information service

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

| poison center | | |
|---------------|--|----------------|
| country | name | telephone |
| | 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.

BS Elution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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.

BS Elution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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.

BS Elution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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 | 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 |
|-----------------------------|-----------------------------------|

BS Elution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| | |
|------------------------------|------------------------------------|
| 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.

BS Elution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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.

BS Elution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

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**
national regulations (United States)

VOC content

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

industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

| category | rating | description |
|---------------------|--------|--|
| Chronic | / | 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).

BS Elution Buffer

version number: GHS 1.0

date of compilation: 2020-05-04

| 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 |
| Cal ARB | California Air Resources Board |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EPA | Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment |
| 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 |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |

key literature references and sources for data

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

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

classification procedure

physical and chemical properties: the classification is based on tested mixture.

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

disclaimer

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