

MATERAL SAFETY DATA SHEET (MSDS)

Kit Name: VitroSure[™] DNA FFPE Tissue Isolation Kit SKU #: VB-5001

Revision Date: 10-16-2023

Components:

| Buffer VTL |
|---------------------|
| RNase A (100mg/ml) |
| Buffer VL |
| Buffer VW1 |
| Buffer VW2 |
| Buffer VTE |
| Proteinase K Powder |
| Proteinase K Buffer |

Buffer VTL MSDS

| | | nce/Mixture and Company |
|----|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Identification of the substan | nce or mixture |
| | Product Name | Buffer VTL |
| | Product number Product Description | Kit Component |
| | Manufacturer/Supplier | |
| | VitroVivo Biotech, LLC. Phone: 301-500-0499 | 405 E Gude Dr. Suite 214,Rockville, MD 20850Toll free: 1-800-260-9817Fax: 844-248-6208 |
| 2. | Composition/information on | ingredients |
| | Composition: | |
| | Name | CAS # |
| | sodium dodecyl sulphate | 151-21-3 |
| | | |
| 3. | Hazards Identification | |
| | Other hazards None known. | |
| 4. | First Aid Measures | |
| | General Advice | Show this safety data sheet to the doctor in attendance. |
| | Eye Contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing. |
| | Skin Contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately. |
| | Inhalation | Remove to fresh air. If not breathing, give artificial respiration. Call a physicial or poison control center immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. |
| | Ingestion | Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. |
| | Most important symptoms and effects | Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe |
| | Notes to Physician | damage to the delicate tissue and danger of perforation \ Treat symptomatically |
| | • | |
| 5. | Fire Fighting Measures | |

| | Specific hazards during fire fighting : Exposure to decomposition products may be a hazard to health.Hazardous combustion products :Carbon oxides Nitrogen oxides (NOx) Sulfur oxidesFurther information :In the event of fire and/or explosion do not breathe fumes.Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary | | | |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| 6. | Accidental Release Measure | 28 | | |
| | Personal Precautions | Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing | | |
| | Environmental Precautions Prevent further leakage or spillage if safe to do so. | | | |
| | Methods for Containment and Clean Up | Keep in suitable, closed containers for disposal. | | |
| 7. | 7. Handling and Storage | | | |
| | Handling | Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from clothing and other combustible materials. | | |
| | Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Do not store near combustible materials. Incompatible Materials. Reducing Agent. Strong acids. Strong reducing agents. Combustible material | | |
| 8. | Exposure Controls, Persona | l Protection | | |

Ingredients with workplace control parameters Contains no substances with occupational exposure limit values.

Personal protective equipment

| Hand protection | |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remarks : | The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break through times, and |
| | of special workplace conditions (mechanical strain, duration of contact). |
| Eye protection : | Safety glasses |
| Skin and body protection : | Choose body protection according to the amount and concentration of the dangerous substance at the work place. Footwear protecting against chemicals |
| Hygiene measures : | Keep away from food and drink. Wash hands before breaks and at the end of workday. |
| | Ensure adequate ventilation, especially in confined areas. Avoid contact with the skin and |
| | the eyes. When using do not eat, drink or smoke. |

9. Physical and Chemical Properties

| Physical State | liquid |
|----------------------------------|--------------------------|
| Appearance | No data available |
| Odor | characteristic |
| Odor Threshold | No information available |
| pH | 8.3 |
| Melting Point/Range | No information available |
| Boiling Point/Range | No information available |
| Flash Point | No information available |
| Evaporation Rate | Not applicable |
| Flammability (solid,gas) | No information available |
| Flammability or explosive limits | |
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | No information available |
| Vapor Density | Not applicable |

| Specific Gravity | 1.03 g/cm3 |
|---------------------------------------|---------------------|
| Partition coefficient; n-octanol/wate | r No data available |
| Autoignition Temperature | Not applicable |
| Decomposition Temperature | No data available |
| Viscosity | Not applicable |

10. Stability and Reactivity

| Reactivity : | No decomposition if stored and applied as directed. |
|----------------------------------|-------------------------------------------------------|
| Chemical stability : | No decomposition if stored and applied as directed. |
| Conditions to avoid : | No data available |
| Incompatible materials : | No data available |
| Hazardous decomposition products | : No decomposition if stored and applied as directed. |

11. Toxicological Information

Acute toxicity

Components:

Not classified based on available information.

| Product: |
|-----------------------------|
| Acute oral toxicity : |
| Acute inhalation toxicity : |
| Acute dermal toxicity : |

sodium dodecyl sulphate: Acute oral toxicity :

Acute dermal toxicity :

Remarks: No data available Remarks: No data available Remarks: No data available

LD50 Oral (Rat): 977 mg/kg LD50 Dermal (Rabbit): 580 mg/kg

Not classified based on available information.

Remarks : May cause skin irritation and/or dermatitis.

Skin corrosion/irritation

Product: Components: sodium dodecyl sulphate: Species : Exposure time : Result :

Rabbit 24 h Irritating to skin.

Serious eye damage/eye irritation Not classified based on available information. Product: Reman

Product: Remarks : The product causes irritation of eyes, skin and mucous membranes.
Components:

| sodium dodecyl sulphate: | |
|-----------------------------------|--------------------------------------------------------------------------|
| Species : | Rabbit |
| Result : | Risk of serious damage to eyes. |
| Method : | OECD Test Guideline 405 |
| Respiratory or skin sensitization | |
| Skin sensitization | Not classified based on available information. |
| Respiratory sensitization | Not classified based on available information. |
| Product: | Remarks : No data available |
| Germ cell mutagenicity | Not classified based on available information. |
| Carcinogenicity | Not classified based on available information. |
| IARC | No ingredient of this product present at levels greater than or equal to |
| | 0.1% is identified as probable, possible or confirmed human |
| | carcinogen by IARC. |
| OSHA | No component of this product present at levels greater than or equal |
| | to 0.1% is on OSHA's list of regulated carcinogens. |
| NTP | No ingredient of this product present at levels greater than or equal to |
| | 0.1% is identified as a known or anticipated carcinogen by NTP. |
| Reproductive toxicity | Not classified based on available information. STOT-single exposure |
| - | Not classified based on available information. |

| time: 96 h LC50 (Oncorhynchus mykiss (rainbow trout)): 3.6 mg/l Exposur time: 96 h LC50 (Oncorhynchus mykiss (rainbow trout)): 3.6 mg/l Exposur time: 96 h Concorhynchus mykiss (rainbow trout)): 3.6 mg/l Exposur time: 96 h Proticity to algae/aquatic : (Pseudokirchneriella subcapitata (green algae)): 2.68 mg/l Exposure time: 150 h Test Type: Growth inhibition No data available Bioaccumulative potential Product: Bioaccumulation : Remarks: No data available Components: sodium dodecyl sulphate: Partition coefficient: n-octanol/water : log Pow: 1.6 Mobility in soil No data available Other adverse effects Product: Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection Stratospheric Ozone - CAA Section 602 Class I Substances Rem This product neither contains, nor was manufactured with a Cla | | Components: sodium dodecyl sulphate: Routes of exposure : Assessment : | Inhalation May cause respiratory irritation. |
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| Remarks : No data available 12. Ecological Information Ecotoxicity Product: Toxicity to fish : Remarks: No data available Toxicity to fish : Remarks: No data available Toxicity to fish : Remarks: No data available Toxicity to fish : NOEC (Oncorhynchus mykiss (rainbow trout)): 19.5 mg/l Exposutime: 96 h Toxicity to algae/aquatic : (Pseudokirchneriella subcapitata (green algae)): 2.68 mg/l Plants Exposure time: 96 h Persistence and degradability No data available Bioaccumulative potential Product: Bioaccumulation : Remarks: No data available Bioaccumulation : Remarks: No data available Bioaccumulation : Remarks: No data available Obter adverse effects Product: Product: No data available Other adverse effects Product: Product: No data available Other adverse effects Product: Product: Regulation: 40 CFR Protection of Environment; Part 82 Protection of Cass II ODS as defined by the U.S. Clean Air Act Section 60 CFR 82, Subpt. A, App.A + B). Additional ecological information No data available Usate from res | | Aspiration toxicity Further information | |
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| Domestic regulation | | - | |
| | | | |
| | | - | Not regulated as a dangerous good |
| Special precautions for user | | Special precautions for user | |
| VitroSure [™] DNA FFPE Tissue Isolation Kit MSDS Page [©] | | TM | ASDS Page 5/41 |

| | Remarks : | Not classified as dangerous in the meaning of transport regulations. | |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 15. | Regulatory Information | | |
| | CERCLA Reportable Quantity Listed substances in the product are a | at low enough levels to not be expected to exceed the RQ | |
| | SARA 304 Extremely Hazardous Substances Reportable Quantity This material does not contain any components with a section 304 EHS RQ. | | |
| | SARA 302 Extremely Hazardous Substances Threshold Planning Quantity This material does not contain any components with a section 302 EHS TPQ. | | |
| | SARA 311/312 Hazards : | No SARA Hazards | |
| | SARA 313 : | This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting | |
| | TSCA list | levels established by SARA Title III, Section 313. No substances are subject to a Significant New Use Rule. No substances are subject to TSCA 12(b) export notification | |

16. Other Information

This information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of the material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

requirements.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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RNase A MSDS

| 1. Identification of the Substan | Identification of the Substance/Mixture and Company | | |
|------------------------------------------------|-------------------------------------------------------------|---------------------------------------|--|
| Identification of the substance or mixture | | | |
| Product Name | RNase A | | |
| Product number | | | |
| Product Description | Kit Component | | |
| Manufacturer/Supplier | | | |
| VitroVivo Biotech, LLC. Phone: 301-500-0499 | 405 E Gude Dr. Suite 214, Rock Toll free: 1-800-260-9817 | cville, MD 20850 Fax: 844-248-6208 | |

2. Composition/information on ingredients

Chemical Description: An aqueous solution of ferric chloride and hydrochloric acid.

| Name | CAS #. |
|---------|-----------|
| RNase A | 9001-99-4 |

3. Hazards Identification

| | GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) | |
|----|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| | Respiratory sensitization : | Category 1 |
| | Skin sensitization : | Category 1 |
| | GHS label elements | |
| | Hazard pictograms : | |
| | Signal Word : | Danger |
| | Hazard Statements : | H317 May cause an allergic skin reaction. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| | Precautionary Statements : | Prevention: |
| | 2 | P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. |
| | | P280 Wear protective gloves/ protective clothing/ eye protection |
| | | face protection. |
| | | P285 In case of inadequate ventilation wear respiratory protection. |
| | | Response: |
| | | P304 + P341 IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. P |
| | | 333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. |
| | | P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor. |
| | | |
| | | P363 Wash contaminated clothing before reuse. |
| | | Disposal: D501 Dimess of contents/ container to an emmoused waste disposal plant |
| | | P501 Dispose of contents/ container to an approved waste disposal plant. |
| | Other hazards | None known. |
| 4. | First Aid Measures | |
| | | |
| | General advice : | Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. |
| | If inhaled : | If unconscious, place in recovery position and seek medical advice. |
| | | Keep respiratory tract clear. If symptoms persist, call a physician. |
| | In case of skin contact : | Wash off immediately with soap and plenty of water while removing all |

contaminated clothes and shoes. If symptoms persist, call a physician.

water for at least 15 minutes and consult a physician.

Remove contact lenses. Protect unharmed eye. Rinse thoroughly with plenty of

In case of eye contact :

| If swallowed : | If accidentally swallowed obtain immediate medical attention. Rinse mouth | |
|---------------------------------------------------------------|----------------------------------------------------------------------------|--|
| | with water. Never give anything by mouth to an unconscious person. | |
| Most important symptoms and effects, both acute and delayed : | | |
| | May cause an allergic skin reaction. | |
| | May cause allergy or asthma symptoms or breathing difficulties if inhaled. | |
| | No information available. | |
| Notes to physician : | No information available. | |
| | | |

5. Fire Fighting Measures

| Suitable extinguishing media : | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Specific hazards during fire fighting : | Exposure to decomposition products may be a hazard to health. |
| Hazardous combustion products : | Carbon oxides Nitrogen oxides (NOx) |
| Further information : | In the event of fire and/or explosion do not breathe fumes. |
| Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if | |
| | necessary |

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures :

Use personal protective equipment. Ensure adequate ventilation. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

Environmental precautions :

Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up :

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal

7. Handling and Storage

Advice on protection against fire and explosion :

Normal measures for preventive fire protection.

Advice on safe handling :

Avoid formation of aerosol. Do not breathe vapors/dust.

Avoid exposure - obtain special instructions before use.

Avoid contact with skin and eyes.

For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.

Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.

Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage :

Keep container tightly closed in a dry and well-ventilated place.

Further information on storage

Keep container tightly closed in a dry and well-ventilated place.

Further information on storage stability :

No decomposition if stored and applied as directed

8. Exposure Controls / Personal Protection

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

| Respiratory protection : | In the case of vapor formation use a respirator with an approved filter. |
|----------------------------|----------------------------------------------------------------------------------|
| Hand protection | |
| Material : | Protective gloves |
| Material : | Nitrile rubber |
| Break through time : | 480 min |
| Glove thickness : | 0.35 mm |
| Remarks : | The choice of an appropriate glove does not only depend on its |
| | material but also on other quality features and is different from one |
| | producer to the other. Take note of the information given by the |
| | producer concerning permeability and break through times, and of |
| | special workplace conditions (mechanical strain, duration of contact). |
| | Gloves should be discarded and replaced if there is any indication of |
| | degradation or chemical breakthrough. If used in solution, or mixed |
| | with other substances, and under conditions which differ from EN |
| | 374, contact the supplier of the EC approved gloves. |
| Eye protection : | Tightly fitting safety goggles Do not wear contact lenses. |
| Skin and body protection : | Choose body protection according to the amount and concentration of |
| | the dangerous substance at the work place. Footwear protecting against chemicals |
| Hygiene measures : | Keep away from food and drink. Wash hands before breaks and at the |
| Trygrene measures . | end of workday. Ensure adequate ventilation, especially in confined |
| | areas. Keep working clothes separately. Avoid contact with the skin |
| | and the eyes. When using do not eat, drink or smoke |
| | and the eyes. when using do not eat, drink of smoke |

Physical and Chemical Properties 9.

| Appearance :liquidColor :No data availableOdor :characteristic | |
|----------------------------------------------------------------------|--|
| Odor : characteristic | |
| | |
| Odor Threshold : No data available | |
| pH : No data available | |
| Melting point/range : No data available | |
| Boiling point/boiling range : No data available | |
| Flash point : Not applicable | |
| Evaporation rate : No data available | |
| Burning rate : No data available | |
| Upper explosion limit / Upper flammability limit : No data available | |
| Lower explosion limit / Lower flammability limit : No data available | |
| Vapor pressure : No data available | |
| Relative vapor density : No data available | |
| Relative density : No data available | |
| Density : No data available | |
| Solubility(ies) | |
| Water solubility : No data available | |
| Solubility in other solvents : No data available | |
| Partition coefficient: n-octanol/water : No data available | |
| Autoignition temperature : not determined | |
| Decomposition temperature : No data available | |
| Viscosity | |
| Viscosity, dynamic : No data available | |
| Viscosity, kinematic : No data available | |
| Explosive properties : No data available | |
| Oxidizing properties : No data available | |
| Stability and Reactivity Data | |

10. and Reactivity Data

| Reactivity : | No decomposition if stored and applied as directed. |
|--------------------------|-----------------------------------------------------|
| Chemical stability : | No decomposition if stored and applied as directed. |
| Conditions to avoid : | No data available |
| Incompatible materials : | No data available Hazardous decomposition products |

11. Toxicological Information

| Acute toxicity Not classified based on available information. | | Not classified based on available information. | |
|---------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Product: | | Demonitor Ne data and labor | |
| | Acute oral toxicity : Acute inhalation toxicity : | Remarks: No data available Remarks: No data available | |
| | Acute dermal toxicity : | Remarks: No data available | |
| | The domain to money . | | |
| | Skin corrosion/irritation Not classified based on available info | rmation. | |
| | Product: | | |
| | Remarks : | May cause skin irritation and/or dermatitis. | |
| | Serious eye damage/eye irritation | Not classified based on available information. | |
| | Product: | | |
| | Remarks : | The product causes irritation of eyes, skin and mucous membranes. | |
| | Respiratory or skin sensitization | | |
| | Skin sensitization | May cause an allergic skin reaction. | |
| | Respiratory sensitization | May cause allergy or asthma symptoms or breathing difficulties if inhaled. | |
| | Product: | | |
| | Remarks : | Causes sensitization. | |
| | | May cause sensitization by inhalation and skin contact. | |
| | Germ cell mutagenicity | Not classified based on available information. | |
| | Carcinogenicity | Not classified based on available information. | |
| | IARC | No ingredient of this product present at levels greater than or equal to 0.1% is identified as matching, possible or confirmed hyperpresent | |
| | | 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. | |
| | OSHA | No component of this product present at levels greater than or equal | |
| | NTTD | to 0.1% is on OSHA's list of regulated carcinogens. | |
| | NTP | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. | |
| | Reproductive toxicity | Not classified based on available information | |
| | STOT-single exposure | Not classified based on available information. | |
| | STOT-repeated exposure | Not classified based on available information. | |
| | Aspiration toxicity | Not classified based on available information. | |
| | Further information | | |
| | Product: Remarks : | No data available | |
| 12. | Ecological Information | | |
| | Ecotoxicity | | |
| | Product: | | |
| | Toxicity to fish : | Remarks: No data available | |
| | Toxicity to algae/aquatic plants : | Remarks: No data available | |
| | Toxicity to microorganisms : | Remarks: No data available | |
| | Persistence and degradability | No data available | |
| | Bioaccumulative potential | | |
| | Product: | | |
| | Bioaccumulation : | Remarks: No data available | |
| | Mobility in soil | No data available | |
| | Other adverse effects | | |
| | Product: | | |
| | Ozone-Depletion Potential : | Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances | |

| | Additional ecological information : | Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). No data available |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13. | Disposal Considerations | |
| | Disposal methods Waste from residues : Contaminated packaging : | Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of as unused product. Do not re-use empty containers. |
| 14 | Turner and Information | |
| 14. | Transport Information | |
| | International Regulations UNRTDG IATA-DGR IMDG-Code Transport in bulk according to Ann Not applicable for product as supplied | Not regulated as a dangerous good Not regulated as a dangerous good Not regulated as a dangerous good ex II of MARPOL 73/78 and the IBC Code . Domestic regulation |
| | 49 CFR | Not regulated as a dangerous good |
| 15. | Regulatory Information | |
| | CERCLA Reportable Quantity This material does not contain any components with a CERCLA RQ. SARA 304 Extremely Hazardous Substances Reportable Quantity This material does not contain any components with a section 304 EHS RQ. SARA 302 Extremely Hazardous Substances Threshold Planning Quantity This material does not contain any components with a section 302 EHS TPQ. | |
| | SARA 311/312 Hazards : | Respiratory or skin sensitization |
| | SARA 313 : | This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313. |
| | Clean Air Act Clean Water Act | This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61). This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F). The following chemical(s) are listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F): hydrogen chloride 7647-01-0 This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489) This product does not contain any Hazardous Substances listed under |
| | | the U.S. CleanWater Act, Section 311, Table 116.4A. This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3. This product does not contain any toxic pollutants listed under the U.S. Clean Water Act |

| US State Regulations Pennsylvania Right To Know | related to the U.S. Clean Water Act. |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| water ribonuclease | 9001-99-4 |
| Hoondelease | 5001-55- - |
| Maine Chemicals of High Concern | This product does not contain any chemicals that are listed as Maine Chemicals of High Concern. |
| Maine Chemicals of High Concern | This product does not contain any listed chemicals |
| New Jersey Right To Know | |
| water | 7732-18-5 |
| ribonuclease | 9001-99-4 |
| TSCA list | No substances are subject to a Significant New Use Rule. No substances are subject to TSCA 12(b) export notification requirements. |

Section 307 This product does not contain any priority pollutants

16. Other Information

This information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of the material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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Buffer VL MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Product number Product Description Buffer VL

Kit Component

Manufacturer/Supplier

VitroVivo Biotech, LLC. Phone: 301-500-0499

405 E Gude Dr. Suite 214, Rockville, MD 29850 Toll free: 1-800-260-9817 Fax: 844-248-6208

2. Composition/information on ingredients

Composition:

| Composition | CAS # |
|-------------------------|---------|
| Guanidine Hydrochloride | 50-01-1 |

Hazards Identification 3.

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

| Skin irritation : Eye irritation : Skin sensitization : | Category 2 Category 2A Category 1 |
|---------------------------------------------------------------|------------------------------------------------------------------------------------|
| GHS label elements Hazard pictograms : | |
| Signal Word : | Warning |
| Hazard Statements : | H315 Causes skin irritation. |
| | H317 May cause an allergic skin reaction. |
| | H319 Causes serious eye irritation. |
| Precautionary Statements : | Prevention: |
| - | P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| | Response: |
| | P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. |
| Other hazards | P362 Take off contaminated clothing and wash before reuse. None known. |
| Other hazarus | None kilowii. |

| 4. | First Aid Measures | |
|----|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | |
| | General advice : | Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. |
| | If inhaled : | If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician. |
| | In case of skin contact : | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician. |
| | In case of eye contact : | Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. |
| | If swallowed : | If accidentally swallowed obtain immediate medical attention. Rinse mouth |

with water. Never give anything by mouth to an unconscious person.Most important symptoms and effects, both acute and delayed : No information available. Causes skin
irritation. May cause an allergic skin reaction. Causes serious eye irritation.Notes to physician :No information available.

5. Fire Fighting Measures

| Suitable extinguishing media : | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. | |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------|--|
| Specific hazards during fire fighting : | Exposure to decomposition products may be a hazard to health. | |
| Hazardous combustion : | Carbon oxides | |
| products | Nitrogen oxides (NOx) | |
| Further information : | In the event of fire and/or explosion do not breathe fumes. | |
| Special protective equipment for fire-fighters : | | |
| Wear self-contained breathing apparatus for firefighting if necessary | | |

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures :

Use personal protective equipment. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up :

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

7. Handling and Storage

8.

| Advice on protection against fire and explosion | : Normal measures for preventive fire protection. |
|-------------------------------------------------|--------------------------------------------------------------|
| Advice on safe handling : | Do not breathe vapors/dust. Avoid exposure - obtain |
| | special instructions before use. Avoid contact with skin and |
| | eyes. For personal protection see section 8. Smoking, |
| | eating and drinking should be prohibited in the application |
| | area. Dispose of rinse water in accordance with local and |
| | national regulations. Persons susceptible to skin |
| | sensitization problems or asthma, allergies, chronic or |
| | recurrent respiratory disease should not be employed in any |
| | process in which this mixture is being used. |
| Conditions for safe storage : | Keep container tightly closed in a dry and well-ventilated |
| | place. |
| Further information storage stability: | No decomposition if stored and applied as directed |
| Exposure Controls / Personal Protection | |

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

| Hand protection | |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Material : | Protective gloves |
| Remarks : | The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break. through times, and of special workplace |
| | conditions (mechanical strain, duration of contact). |
| Eye protection : | Safety glasses Wear face-shield and protective suit for abnormal processing problems. Ensure that eyewash |
| | stations and safety showers are close to the workstation |
| | location. |
| Skin and body protection : | Choose body protection according to the amount and |
| | |

Hygiene measures :

concentration of the dangerous substance at the work place. Footwear protecting against chemicals Keep away from food and drink. Wash hands before breaks and at the end of workday. Ensure adequate ventilation, especially in confined areas. Keep working clothes separately. Avoid contact with the skin and the eyes. When using do not eat, drink or smoke.

| 9. | Physical and Chemical Properties | |
|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Appearance : | liquid |
| | Color : | No data available |
| | Odor : | characteristic |
| | Odor Threshold : | No data available |
| | | |
| | pH: | 6 |
| | Melting point/range : | No data available |
| | Boiling point/boiling range : | No data available |
| | Flash point : | No data available |
| | Evaporation rate : | No data available |
| | Burning rate : | No data available |
| Upper explosion limit / Upper flammability limit : No data available | | bility limit : No data available |
| | Lower explosion limit / Lower flamma | |
| | Vapor pressure : | No data available |
| | Relative vapor density : | No data available |
| | Relative density : | No data available |
| | Density : | 1.16 g/cm3 Solubility(ies) |
| | Water solubility : | No data available |
| | | No data available |
| | Solubility in other solvents : | |
| | Partition coefficient: n-octanol/water : | |
| | Autoignition temperature : | not determined |
| | Decomposition temperature : | No data available |
| | Viscosity | |
| | Viscosity, dynamic : | No data available |
| | Viscosity, kinematic : | No data available |
| | Explosive properties : | No data available |
| | Oxidizing properties : | No data available |
| 10. | Stability and Reactivity Data | |
| | | |
| | Reactivity : | No decomposition if stored and applied as directed. |
| | Chemical stability : | No decomposition if stored and applied as directed. |
| | Conditions to avoid : | No data available |
| | Incompatible materials : | No data available |
| | Hazardous decomposition products | No decomposition if stored and applied as directed. |
| | Toxicological Information | |
| 11. | | |
| 11. | Acute toxicity | Not classified based on available information |
| 11. | Acute toxicity Product: | Not classified based on available information. |
| 11. | Product: | |
| 11. | Product: Acute oral toxicity : | Remarks: No data available |
| 11. | Product: Acute oral toxicity : Acute inhalation toxicity : | Remarks: No data available Remarks: No data available |
| 11. | Product: Acute oral toxicity : Acute inhalation toxicity : Acute dermal toxicity : | Remarks: No data available Remarks: No data available Remarks: No data available |
| 11. | Product: Acute oral toxicity : Acute inhalation toxicity : | Remarks: No data available Remarks: No data available Remarks: No data available ide: |
| 11. | Product: Acute oral toxicity : Acute inhalation toxicity : Acute dermal toxicity : Components: guanidine hydrochlor | Remarks: No data available Remarks: No data available Remarks: No data available ide: |
| 11. | Product: Acute oral toxicity : Acute inhalation toxicity : Acute dermal toxicity : Components: guanidine hydrochlor Acute oral toxicity : LD50 Oral (Rat): | Remarks: No data available Remarks: No data available Remarks: No data available ide: 1,120 mg/kg |
| 11. | Product: Acute oral toxicity : Acute inhalation toxicity : Acute dermal toxicity : Components: guanidine hydrochlor Acute oral toxicity : LD50 Oral (Rat): Skin corrosion/irritation | Remarks: No data available Remarks: No data available Remarks: No data available ide: 1,120 mg/kg |
| 11. | Product: Acute oral toxicity : Acute inhalation toxicity : Acute dermal toxicity : Components: guanidine hydrochlor Acute oral toxicity : LD50 Oral (Rat): Skin corrosion/irritation Product: Remarks : | Remarks: No data available Remarks: No data available Remarks: No data available ide: 1,120 mg/kg Causes skin irritation. |
| 11. | Product: Acute oral toxicity : Acute inhalation toxicity : Acute dermal toxicity : Components: guanidine hydrochlor Acute oral toxicity : LD50 Oral (Rat): Skin corrosion/irritation Product: Remarks : Respiratory or skin sensitization | Remarks: No data available Remarks: No data available Remarks: No data available ide: 1,120 mg/kg Causes skin irritation. May cause skin irritation and/or dermatitis. |
| 11. | Product: Acute oral toxicity : Acute inhalation toxicity : Acute dermal toxicity : Components: guanidine hydrochlor Acute oral toxicity : LD50 Oral (Rat): Skin corrosion/irritation Product: Remarks : | Remarks: No data available Remarks: No data available Remarks: No data available ide: 1,120 mg/kg Causes skin irritation. |

| Product: | Remarks : Causes sensitization. |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Germ cell mutagenicity | Not classified based on available information. Carcinogenicity Not classified based on available information. |
| IARC | No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| OSHA | No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens. |
| NTP | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| Reproductive toxicity | Not classified based on available information |
| STOT-single exposure STOT-repeated exposure | Not classified based on available information Not classified based on available information. |
| Aspiration toxicity Product: | Not classified based on available information. Further information Remarks : No data available |

12. Ecological Information

| | Ecotoxicity Product: | |
|-----|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Toxicity to fish : | Remarks: No data available |
| | Toxicity to algae/aquatic plants : | Remarks: No data available |
| | Toxicity to microorganisms : | Remarks: No data available |
| | Persistence and degradability | |
| | Components: | |
| | guanidine hydrochloride: Biodegradability : | Method: OECD Test Guideline 301C Remarks: According to the results of tests of biodegradability this product is not readily biodegradable. |
| | Bioaccumulative potential Product: | |
| | Bioaccumulation : | Remarks: No data available |
| | Components: guanidine hydrochloride: | |
| | Partition coefficient: n-octanol/water : Mobility in soil | log Pow: ca1.7 (68 °F / 20 °C) No data available |
| | Other adverse effects | |
| | Product: | |
| | Ozone-Depletion Potential : | Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). |
| | Additional ecological information : | No data available |
| 13. | Disposal Considerations | |
| | Disposal methods Waste from residues : | Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. |
| | Contaminated packaging : | Dispose of as unused product. Do not re-use empty containers |
| 14. | Transport Information | |

International Regulations

| UNRTDG | Not regulated as a dangerous good | |
|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--|
| IATA-DGR | Not regulated as a dangerous good | |
| IMDG-Code | Not regulated as a dangerous good | |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable for product as supplied. | | |
| Domestic regulation 49 CFR | Not regulated as a dangerous good | |
| Special precautions for user | Remarks : Not classified as dangerous in the meaning of transport regulations | |
| Regulatory Information | | |

CERCLA Reportable Quantity

15.

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

| SARA 311/312 Hazards : | Respiratory or skin sensitization Skin corrosion or irritation Serious |
|------------------------|------------------------------------------------------------------------|
| | eye damage or eye irritation |
| SARA 313 : | This material does not contain any chemical components with known |
| | CAS numbers that exceed the threshold (De Minimis) reporting |
| | levels established by SARA Title III, Section 313. |
| TSCA list | No substances are subject to a Significant New Use Rule. No |
| | substances are subject to TSCA 12(b) export notification |
| | requirements. |

16. Other Information

This information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of the material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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Buffer VW1 MSDS

| | tification of the Substance/Mixture and Company |
|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Identification of the substand | ce or mixture |
| Product Name Product number | Buffer VW1 |
| Product Description | Kit Component |
| Manufacturer/Supplier | |
| VitroVivo Biotech, LLC. | 405 E Gude Dr. Suite 214, Rockville, MD 20850 |
| Phone: 301-500-0499 | Toll free: 1-800-260-9817 Fax: 844-248-6208 |
| 2. | Composition/information on ingredients |
| Composition | CAS# |
| Guanidine Hydrochloride | 50-01-1 |
| | |
| 3. Hazards Identification | |
| GHS classification in accord 1910.1200) | ance with the OSHA Hazard Communication Standard (29 CFR |
| Acute toxicity (Oral) : | Category 4 |
| | Costo a serie A |
| Acute toxicity (Inhalation) : | Category 4 |
| Skin irritation : | Category 2 |
| • | |
| Skin irritation : Eye irritation : GHS label elements | Category 2 |
| Skin irritation : Eye irritation : GHS label elements Hazard pictograms : | Category 2 Category 2A |
| Skin irritation : Eye irritation : GHS label elements Hazard pictograms : Signal Word : | Category 2 Category 2A Warning |
| Skin irritation : Eye irritation : GHS label elements Hazard pictograms : | Category 2 Category 2A Warning H302 + H332 Harmful if swallowed or if inhaled. |
| Skin irritation : Eye irritation : GHS label elements Hazard pictograms : Signal Word : | Category 2 Category 2A Warning H302 + H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. |
| Skin irritation : Eye irritation : GHS label elements Hazard pictograms : Signal Word : Hazard Statements : | Category 2 Category 2A Warning H302 + H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. H319 Causes serious eye irritation |
| Skin irritation : Eye irritation : GHS label elements Hazard pictograms : Signal Word : | Category 2 Category 2A Warning H302 + H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. H319 Causes serious eye irritation Prevention : |
| Skin irritation : Eye irritation : GHS label elements Hazard pictograms : Signal Word : Hazard Statements : | Category 2 Category 2A Warning H302 + H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. H319 Causes serious eye irritation Prevention : P271 Use only outdoors or in a well-ventilated area. |
| Skin irritation : Eye irritation : GHS label elements Hazard pictograms : Signal Word : Hazard Statements : | Category 2 Category 2A Warning H302 + H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. H319 Causes serious eye irritation Prevention : P271 Use only outdoors or in a well-ventilated area. |
| Skin irritation : Eye irritation : GHS label elements Hazard pictograms : Signal Word : Hazard Statements : | Category 2 Category 2A Warning H302 + H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. H319 Causes serious eye irritation Prevention : P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing/ eye protection/ |
| Skin irritation : Eye irritation : GHS label elements Hazard pictograms : Signal Word : Hazard Statements : | Category 2 Category 2A Warning H302 + H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. H319 Causes serious eye irritation Prevention : P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| Skin irritation : Eye irritation : GHS label elements Hazard pictograms : Signal Word : Hazard Statements : | Category 2 Category 2A Warning H302 + H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. H319 Causes serious eye irritation Prevention : P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. Response: P362 Take off contaminated clothing and wash before reuse. Disposal: |
| Skin irritation : Eye irritation : GHS label elements Hazard pictograms : Signal Word : Hazard Statements : | Category 2 Category 2A Warning H302 + H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. H319 Causes serious eye irritation Prevention: P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. Response: P362 Take off contaminated clothing and wash before reuse. |

| General advice : | Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If inhaled : | If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician. |
| In case of skin contact : | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician. |
| In case of eye contact : | Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. |
| If swallowed : | If accidentally swallowed obtain immediate medical attention. Rinse mouth with water. Never give anything by mouth to an unconscious person. |
| Most important symptoms | and effects, both acute and delayed : No information available. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. |
| Notes to physician : | No information available. |

5. Fire Fighting Measures

| Suitable extinguishing media : | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. | |
|--------------------------------------------------|--------------------------------------------------------------------------|--|
| Specific hazards during fire fighting : | Exposure to decomposition products may be a hazard to health. | |
| Hazardous combustion : | Carbon oxides | |
| products | Nitrogen oxides (NOx) | |
| Further information : | In the event of fire and/or explosion do not breathe fumes. | |
| Special protective equipment for fire-fighters : | | |
| Wear self-contained breathing apparat | us for firefighting if necessary | |

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures :

Use personal protective equipment. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up :

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

7. Handling and Storage

| | | Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. |
|----|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 0 | Keep container tightly closed in a dry and well-ventilated place. |
| | Further information storage stability: | No decomposition if stored and applied as directed |
| 8. | Exposure Controls / Personal Protection | |

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

| Personal protective equipment Hand protection | |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Material : | Protective gloves |
| Remarks : | The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break. through times, and of special workplace conditions (mechanical strain, duration of contact). |
| Eye protection : | Safety glasses Wear face-shield and protective suit for abnormal processing problems. Ensure that eyewash stations and safety showers are close to the workstation location. |
| Skin and body protection : | Choose body protection according to the amount and concentration of the dangerous substance at the work place. Footwear protecting against chemicals |
| Hygiene measures : | Keep away from food and drink. Wash hands before breaks |

and at the end of workday. Ensure adequate ventilation, especially in confined areas. Keep working clothes separately. Avoid contact with the skin and the eyes. When using do not eat, drink or smoke.

| 9. | Physical and Chemical Properties | |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Appearance : | liquid |
| | Color : | No data available |
| | Odor : | characteristic |
| | Odor Threshold : | No data available |
| | pH : | 6 |
| | Melting point/range : | No data available |
| | Boiling point/boiling range : | No data available |
| | Flash point : | No data available |
| | Evaporation rate : | No data available |
| | Burning rate : | No data available |
| | Upper explosion limit / Upper flammability lin | |
| | Lower explosion limit / Lower flammability lin | |
| | Vapor pressure : | No data available |
| | Relative vapor density : | No data available |
| | Relative density : | No data available |
| | Density : | 1.16 g/cm3 Solubility(ies) |
| | | No data available |
| | Water solubility : Solubility in other solvents : | No data available |
| | | |
| | Partition coefficient: n-octanol/water : | No data available |
| | Autoignition temperature : | not determined |
| | Decomposition temperature : | No data available |
| | Viscosity | NT 1.4 111 |
| | Viscosity, dynamic : | No data available |
| | Viscosity, kinematic : | No data available |
| | Explosive properties : | No data available |
| | Oxidizing properties : | No data available |
| 10. | Stability and Reactivity Data | |
| | Reactivity : | No decomposition if stored and applied as directed. |
| | Chemical stability : | No decomposition if stored and applied as directed. |
| | Possibility of hazardous reactions : | Stable under recommended storage conditions. Hazardou |
| | rossionity of hazardous reactions . | decomposition products formed under fire conditions. Keep away from oxidizing agents, and acidic or alkaline |
| | | products. |
| | a 11.1 | No data available |
| | Conditions to avoid : | |
| | Conditions to avoid : Incompatible materials | |
| | Incompatible materials : | No data available |
| | Incompatible materials : Hazardous decomposition products | |
| 11. | Incompatible materials : | No data available |
| 11. | Incompatible materials : Hazardous decomposition products Toxicological Information Acute toxicity | No data available |
| 11. | Incompatible materials : Hazardous decomposition products Toxicological Information Acute toxicity Product: | No data available No decomposition if stored and applied as directed. Not classified based on available information. |
| 11. | Incompatible materials : Hazardous decomposition products Toxicological Information Acute toxicity Product: Acute oral toxicity : | No data available No decomposition if stored and applied as directed. Not classified based on available information. Remarks: No data available |
| 11. | Incompatible materials : Hazardous decomposition products Toxicological Information Acute toxicity Product: Acute oral toxicity : Acute inhalation toxicity : | No data available No decomposition if stored and applied as directed. Not classified based on available information. Remarks: No data available Remarks: No data available |
| 11. | Incompatible materials : Hazardous decomposition products Toxicological Information Acute toxicity Product: Acute oral toxicity : | No data available No decomposition if stored and applied as directed. Not classified based on available information. Remarks: No data available |
| 11. | Incompatible materials : Hazardous decomposition products Toxicological Information Acute toxicity Product: Acute oral toxicity : Acute inhalation toxicity : | No data available No decomposition if stored and applied as directed. Not classified based on available information. Remarks: No data available Remarks: No data available Remarks: No data available |
| 11. | Incompatible materials : Hazardous decomposition products Toxicological Information Acute toxicity Product: Acute oral toxicity : Acute inhalation toxicity : Acute dermal toxicity : Components: guanidine hydrochloride: | No data available No decomposition if stored and applied as directed. Not classified based on available information. Remarks: No data available Remarks: No data available Remarks: No data available |
| 11. | Incompatible materials : Hazardous decomposition products Toxicological Information Acute toxicity Product: Acute oral toxicity : Acute inhalation toxicity : Acute dermal toxicity : Components: guanidine hydrochloride: Acute oral toxicity : LD50 Oral (Rat): 1,120 m Skin corrosion/irritation | No data available No decomposition if stored and applied as directed. |
| 11. | Incompatible materials : Hazardous decomposition products Toxicological Information Acute toxicity Product: Acute oral toxicity : Acute inhalation toxicity : Acute dermal toxicity : Components: guanidine hydrochloride: Acute oral toxicity : LD50 Oral (Rat): 1,120 m | No data available No decomposition if stored and applied as directed. |
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| 11. | Incompatible materials : Hazardous decomposition products Toxicological Information Acute toxicity Product: Acute oral toxicity : Acute inhalation toxicity : Acute dermal toxicity : Components: guanidine hydrochloride: Acute oral toxicity : LD50 Oral (Rat): 1,120 m Skin corrosion/irritation Product: Remarks : Respiratory or skin sensitization | No data available No decomposition if stored and applied as directed. |
| 11. | Incompatible materials : Hazardous decomposition products Toxicological Information Acute toxicity Product: Acute oral toxicity : Acute inhalation toxicity : Acute dermal toxicity : Components: guanidine hydrochloride: Acute oral toxicity : LD50 Oral (Rat): 1,120 m Skin corrosion/irritation Product: Remarks : Respiratory or skin sensitization Skin sensitization May ca | No data available No decomposition if stored and applied as directed. |

| Product: | Remarks : Causes sensitization. |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Germ cell mutagenicity | Not classified based on available information. Carcinogenicity Not classified based on available information. |
| IARC | No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| OSHA | No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens. |
| NTP | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| Reproductive toxicity | Not classified based on available information |
| STOT-single exposure | Not classified based on available information |
| STOT-repeated exposure | Not classified based on available information. |
| Aspiration toxicity Product: | Not classified based on available information. Further information Remarks : No data available |

12. Ecological Information

| Toxicity to fish :Remarks: No data availableToxicity to algae/aquatic plants :Remarks: No data availableToxicity to microorganisms :Remarks: No data availableToxicity to microorganisms :Remarks: No data availablePersistence and degradability Components: guanidine hydrochloride: Biodegradability :Method: OECD Test Guideline 301C Remarks: According to the results of tests of biodegradability this product is not readily biodegradabile.Bioaccumulative potential Product: Bioaccumulation :Remarks: No data availableComponents: guanidine hydrochloride: Partition coefficient: n-octanol/water :log Pow: ca1.7 (68 °F / 20 °C) No data availableOther adverse effects Product: Ozone-Depletion Potential :Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).Additional ecological information :No data availableIsoposal methods Waste from residues :Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Contaminated packaging :Dispose of as unused product. Do not re-use empty containers | | Ecotoxicity Product: | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to algae/aquatic plants :Remarks: No data availableToxicity to microorganisms :Remarks: No data availablePersistence and degradability Components: guanidine hydrochloride: Biodegradability :Method: OECD Test Guideline 301C Remarks: According to the | | | Remarks: No data available |
| Toxicity to microorganisms : Remarks: No data available Persistence and degradability Components: guanidine hydrochloride: Biodegradability : Method: OECD Test Guideline 301C Remarks: According to the results of tests of biodegradability this product is not readily biodegradable. Bioaccumulative potential Product: Bioaccumulation : Remarks: No data available Components: guanidine hydrochloride: Partition coefficient: n-octanol/water : Partition coefficient: n-octanol/water : Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). Additional ecological information : No data available Disposal methods Waste from residues : Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of as unused product. Do not re-use empty containers | | | |
| Components: guanidine hydrochloride: Biodegradability : Method: OECD Test Guideline 301C Remarks: According to the results of tests of biodegradability this product is not readily biodegradable. Bioaccumulative potential Product: Bioaccumulation : Bioaccumulation : Remarks: No data available Components: guanidine hydrochloride: Partition coefficient: n-octanol/water : log Pow: ca1.7 (68 °F / 20 °C) Mobility in soil No data available Other adverse effects Product: Product: Ozone-Depletion Potential : Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). Additional ecological information : No data available 13. Disposal methods Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Contaminated packaging : Dispose of as unused product. Do not re-use empty containers | | | Remarks: No data available |
| Biodegradability : Method: OECD Test Guideline 301C Remarks: According to the results of tests of biodegradability this product is not readily biodegradabil. Bioaccumulative potential Product: Bioaccumulation : Remarks: No data available Components: guanidine hydrochloride: Remarks: No data available Partition coefficient: n-octanol/water : log Pow; ca1.7 (68 °F / 20 °C) Mobility in soil No data available Other adverse effects No data available Product: Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). Additional ecological information : No data available Disposal methods Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of as unused product. Do not re-use empty containers | | Components: | |
| Bioaccumulative potential Product: Bioaccumulation : Remarks: No data available Components: guanidine hydrochloride: Partition coefficient: n-octanol/water : log Pow: ca1.7 (68 °F / 20 °C) No data available Other adverse effects Product: Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). Additional ecological information : No data available Disposal methods Waste from residues : Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of as unused product. Do not re-use empty containers | | | results of tests of biodegradability this product is not readily |
| Bioaccumulation : Remarks: No data available Components: guanidine hydrochloride: Partition coefficient: n-octanol/water : log Pow: ca1.7 (68 °F / 20 °C) Mobility in soil No data available Other adverse effects No data available Product: Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). Additional ecological information : No data available Disposal Considerations No data available Disposal methods Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Contaminated packaging : | | Bioaccumulative potential | 6 |
| Components: guanidine hydrochloride: Partition coefficient: n-octanol/water : log Pow: ca1.7 (68 °F / 20 °C) Mobility in soil No data available Other adverse effects No data available Product: Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). Additional ecological information : No data available Disposal methods Waste from residues : Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Contaminated packaging : Dispose of as unused product. Do not re-use empty containers | | | |
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| Partition coefficient: n-octanol/water : log Pow: ca1.7 (68 °F / 20 °C) No data available Mobility in soil Other adverse effects Product: Ozone-Depletion Potential : No data available Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). Additional ecological information : No data available 13. Disposal Considerations Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of as unused product. Do not re-use empty containers | | | |
| Mobility in soil No data available Other adverse effects Product: Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). Additional ecological information : No data available 13. Disposal Considerations Waste from residues : Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Contaminated packaging : Dispose of as unused product. Do not re-use empty containers | | | log Pow: ca1.7 (68 °F / 20 °C) |
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| Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). Additional ecological information : No data available 13. Disposal Considerations Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Contaminated packaging : | | | |
| Disposal Considerations Disposal methods Waste from residues : Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Contaminated packaging : Dispose of as unused product. Do not re-use empty containers | | | Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 |
| Disposal methods Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Contaminated packaging : Dispose of as unused product. Do not re-use empty containers | | Additional ecological information : | No data available |
| Waste from residues : Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Contaminated packaging : Dispose of as unused product. Do not re-use empty containers | 13. | Disposal Considerations | |
| Waste from residues : Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Contaminated packaging : Dispose of as unused product. Do not re-use empty containers | | Disposal mathada | |
| Contaminated packaging : Dispose of as unused product. Do not re-use empty containers | | | Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. |
| 14 Twonsnowt Information | | Contaminated packaging : | |
| 14. Transport information | 14. | Transport Information | |

International Regulations

| | UNRTDG | Not regulated as a dangerous good |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | IATA-DGR | Not regulated as a dangerous good |
| | IMDG-Code | Not regulated as a dangerous good |
| | Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable for product as supplied. | |
| | Domestic regulation 49 CFR | Not regulated as a dangerous good |
| | Special precautions for user | Remarks : Not classified as dangerous in the meaning of transport regulations |
| 15. | Regulatory Information | |
| | CERCLA Reportable Quantity Listed substances in the product are a | t low enough levels to not be expected to exceed the RQ |
| | Listed substances in the product are a SARA 304 Extremely Hazardous Su This material does not contain any co SARA 302 Extremely Hazardous Su | |
| | Listed substances in the product are a SARA 304 Extremely Hazardous Su This material does not contain any co SARA 302 Extremely Hazardous Su | ubstances Reportable Quantity mponents with a section 304 EHS RQ. ubstances Threshold Planning Quantity mponents with a section 302 EHS TPQ. Respiratory or skin sensitization Skin corrosion or irritation Serious |
| | Listed substances in the product are a SARA 304 Extremely Hazardous Se This material does not contain any co SARA 302 Extremely Hazardous Se This material does not contain any co | ubstances Reportable Quantity mponents with a section 304 EHS RQ. ubstances Threshold Planning Quantity mponents with a section 302 EHS TPQ. |

16. Other Information

This information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of the material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

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IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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Buffer VW2 MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Product number Product Description Buffer VW2 Kit Component

<u>Manufacturer/Supplier</u>

VitroVivo Biotech, LLC. Phone: 301-500-0499 405 E Gude Dr. Suite 214, Rockville, MD 20850 Toll free: 1-800-260-9817 Fax: 844-248-6208

2. Composition/information on ingredients

Composition:

| Name | Components |
|---------|--------------------------|
| Mixture | No hazardous ingredients |

3. Hazards Identification

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

First Aid Measures 4. **General Advice** Show this safety data sheet to the doctor in attendance. Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing. **Skin Contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately. Remove to fresh air. If not breathing, give artificial respiration. Call a physician Inhalation or poison control center immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Ingestion Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Most important symptoms Causes burns by all exposure routes. Product is a corrosive material. Use of and effects gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation $\$ Notes to Physician Treat symptomatically **Fire Fighting Measures** 5. Suitable extinguishing media . Use extinguishing measures that are appropriate to local

| ose extinguisning measures that are appropriate to local |
|-----------------------------------------------------------------|
| circumstances and the surrounding environment. |
| : Exposure to decomposition products may be a hazard to health. |
| Carbon oxides Nitrogen oxides (NOx) Sulfur oxides |
| |

| | Further information : Special protective equipme | In the event of fire and/or explosion do not breathe fumes. nt for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary |
|----|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6. | Accidental Release Measures | |
| | Personal Precautions | Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing |
| | Environmental Precautions | s Prevent further leakage or spillage if safe to do so. |
| | Methods for Containment Keep in suitable, closed containers for disposal. and Clean Up | |
| 7. | Handling and Storage | |
| | Handling | Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from clothing and other combustible materials. |
| | Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Do not store near combustible materials. Incompatible Materials. Reducing Agent. Strong acids. Strong reducing agents. Combustible material |
| 8. | Exposure Controls, Persona | l Protection |

Ingredients with workplace control parameters Contains no substances with occupational exposure limit values.

Personal protective equipment

| Hand protection | |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remarks : | The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break through times, and |
| | of special workplace conditions (mechanical strain, duration of contact). |
| Eye protection : | Safety glasses |
| Skin and body protection : | Choose body protection according to the amount and concentration of the dangerous substance at the work place. Footwear protecting against chemicals |
| Hygiene measures : | Keep away from food and drink. Wash hands before breaks and at the end of workday. Ensure adequate ventilation, especially in confined areas. Avoid contact with the skin and the eyes. When using do not eat, drink or smoke. |

9. **Physical and Chemical Properties**

| Physical State | liquid | |
|----------------------------------|--------------------------|--|
| Appearance | No data available | |
| Odor | characteristic | |
| Odor Threshold | No information available | |
| рН | 7.5 | |
| Melting Point/Range | No information available | |
| Boiling Point/Range | No information available | |
| Flash Point | No information available | |
| Evaporation Rate | Not applicable | |
| Flammability (solid,gas) | No information available | |
| Flammability or explosive limit | ts | |
| Upper | No data available | |
| Lower | No data available | |
| Vapor Pressure | No information available | |
| Vapor Density | Not applicable | |
| Specific Gravity | 1.01 g/cm3 | |
| Partition coefficient; n-octanol | /water No data available | |

| | Autoignition Temperature Decomposition Temperature Viscosity | Not applicable No data available Not applicable |
|-----|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10. | Stability and Reactivity | |
| | Reactivity : Chemical stability : Conditions to avoid : Incompatible materials : Hazardous decomposition products | No decomposition if stored and applied as directed. No decomposition if stored and applied as directed. No data available No data available : No decomposition if stored and applied as directed. |
| 11. | Toxicological Information | |
| | Acute toxicity Not classified based on available infor | mation. |
| | Product: | |
| | Acute oral toxicity : | Remarks: No data available |
| | Acute inhalation toxicity : Acute dermal toxicity : | Remarks: No data available Remarks: No data available |
| | Acute definal toxicity . | Kemarks. No data avanable |
| | Serious eye damage/eye irritation | |
| | Not classified based on available infor Product: | |
| | Product. | Remarks : The product causes irritation of eyes, skin and mucous membranes. |
| | B • 4 • 10 • 40 40 | |
| | Respiratory or skin sensitization Skin sensitization | Not classified based on available information. |
| | Respiratory sensitization | Not classified based on available information. |
| | Product: | Remarks : No data available |
| | Germ cell mutagenicity | Not classified based on available information. |
| | Carcinogenicity IARC | Not classified based on available information. No ingredient of this product present at levels greater than or equal to |
| | LARC | 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| | OSHA | No component of this product present at levels greater than or equal |
| | NTP | to 0.1% is on OSHA's list of regulated carcinogens. No ingredient of this product present at levels greater than or equal to |
| | | 0.1% is identified as a known or anticipated carcinogen by NTP. |
| | Reproductive toxicity | Not classified based on available information. STOT-single exposure |
| | Components | Not classified based on available information. |
| | Components: sodium dodecyl sulphate: | |
| | Routes of exposure : | Inhalation |
| | Assessment : | May cause respiratory irritation. |
| | STOT-repeated exposure | Not classified based on available information. |
| | Aspiration toxicity | Not classified based on available information. |
| | Further information | |
| | Product: Remarks : | No data available |
| 10 | | |
| 12. | Ecological Information | |
| | Ecotoxicity | |
| | Product: | |
| | Toxicity to fish : Toxicity to algae/aquatic plants : | Remarks: No data available Remarks: No data available |
| | Toxicity to microorganisms : | Remarks: No data available |
| | | |
| | Components: sodium dodecyl sulpha | ate: No data available |
| | Toxicity to fish : | INO UALA AVAIIAUIC |

| | Toxicity to algae/aquatic : plants | No data available |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Persistence and degradability Bioaccumulative potential | No data available |
| | Product: Bioaccumulation : Mobility in soil | Remarks: No data available No data available |
| | Other adverse effects | |
| | Product: Ozone-Depletion Potential : | Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product n either contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). |
| | Additional ecological information : | No data available |
| 13. | Disposal Information | |
| | Waste Disposal Methods Waste from residues : Contaminated packaging : | Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of as unused product. Do not re-use empty containers. |
| 14. | . Transport Information | |
| | International Regulations UNRTDG IATA-DGR IMDG-Code Transport in bulk according to Ann Not applicable for product as supplied Domestic regulation 49 CFR | Not regulated as a dangerous good Not regulated as a dangerous good Not regulated as a dangerous good ex II of MARPOL 73/78 and the IBC Code Not regulated as a dangerous good |
| | Special precautions for user Remarks : | Not classified as dangerous in the meaning of transport regulations. |
| 15. | Regulatory Information | |
| | CERCLA Reportable Quantity Listed substances in the product are at low enough levels to not be expected to exceed the RQ SARA 304 Extremely Hazardous Substances Reportable Quantity This material does not contain any components with a section 304 EHS RQ. | |
| | | |
| | SARA 302 Extremely Hazardous Substances Threshold Planning Quantity This material does not contain any components with a section 302 EHS TPQ. | |
| | SARA 311/312 Hazards : | No SARA Hazards |
| | SARA 313 : TSCA list | This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313. No substances are subject to a Significant New Use Rule. |
| | 1 SCA IISI | No substances are subject to a Significant New Ose Rule. No substances are subject to TSCA 12(b) export notification |

16. Other Information

This information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances

requirements.

of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of the material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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Buffer VTE MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Product number Product Description Buffer VTE Kit Component

Manufacturer/Supplier

VitroVivo Biotech, LLC. Phone: 301-500-0499 405 E Gude Dr. Suite 214, Rockville, MD 20850 Toll free: 1-800-260-9817 Fax: 844-248-6208

2. Composition/information on ingredients

Composition:

| Name | Components |
|---------|--------------------------|
| Mixture | No hazardous ingredients |

3. Hazards Identification

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

4. First Aid Measures **General Advice** Show this safety data sheet to the doctor in attendance. Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing. **Skin Contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately. Remove to fresh air. If not breathing, give artificial respiration. Call a physician Inhalation or poison control center immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Ingestion Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Most important symptoms Causes burns by all exposure routes. Product is a corrosive material. Use of and effects gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation $\$ Notes to Physician Treat symptomatically **Fire Fighting Measures** 5.

| Suitable extinguishing media : | Use extinguishing measures that are appropriate to local |
|---------------------------------------|-------------------------------------------------------------------|
| | circumstances and the surrounding environment. |
| Specific hazards during fire fighting | g : Exposure to decomposition products may be a hazard to health. |
| Hazardous combustion products : | Carbon oxides Nitrogen oxides (NOx) Sulfur oxides |

| | Further information : Special protective equipment | In the event of fire and/or explosion do not breathe fumes. nt for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary | |
|----|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 6. | Accidental Release Measure | \$ | |
| | Personal Precautions | Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing | |
| | Environmental Precautions Prevent further leakage or spillage if safe to do so. | | |
| | Methods for Containment and Clean Up | Keep in suitable, closed containers for disposal. | |
| 7. | Handling and Storage | | |
| | Handling | Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from clothing and other combustible materials. | |
| | Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Do not store near combustible materials. Incompatible Materials. Reducing Agent. Strong acids. Strong reducing agents. Combustible material | |
| 8. | Exposure Controls, Persona | l Protection | |

Ingredients with workplace control parameters Contains no substances with occupational exposure limit values.

Personal protective equipment

| Hand protection | |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remarks : | The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break through times, and |
| | of special workplace conditions (mechanical strain, duration of contact). |
| Eye protection : | Safety glasses |
| Skin and body protection : | Choose body protection according to the amount and concentration of the dangerous substance at the work place. Footwear protecting against chemicals |
| Hygiene measures : | Keep away from food and drink. Wash hands before breaks and at the end of workday. Ensure adequate ventilation, especially in confined areas. Avoid contact with the skin and the eyes. When using do not eat, drink or smoke. |

9. **Physical and Chemical Properties**

| Physical State | liquid | |
|-----------------------------------|--------------------------|--|
| Appearance | No data available | |
| Odor | characteristic | |
| Odor Threshold | No information available | |
| рН | 8.3 | |
| Melting Point/Range | No information available | |
| Boiling Point/Range | No information available | |
| Flash Point | No information available | |
| Evaporation Rate | Not applicable | |
| Flammability (solid,gas) | No information available | |
| Flammability or explosive limit | ts | |
| Upper | No data available | |
| Lower | No data available | |
| Vapor Pressure | No information available | |
| Vapor Density | Not applicable | |
| Specific Gravity | No data available | |
| Partition coefficient; n-octanol/ | water No data available | |

| | Autoignition Temperature Decomposition Temperature Viscosity | Not applicable No data available Not applicable |
|-----|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10. | Stability and Reactivity | |
| | Reactivity : Chemical stability : Conditions to avoid : Incompatible materials : Hazardous decomposition products | No decomposition if stored and applied as directed. No decomposition if stored and applied as directed. No data available No data available : No decomposition if stored and applied as directed. |
| 11. | Toxicological Information | |
| | Acute toxicity Not classified based on available infor | mation. |
| | Product: | |
| | Acute oral toxicity : | Remarks: No data available |
| | Acute inhalation toxicity : Acute dermal toxicity : | Remarks: No data available Remarks: No data available |
| | Acute dermar toxicity : | Remarks: No data avanable |
| | Serious eye damage/eye irritation | |
| | Not classified based on available infor | |
| | Product: | Remarks : The product causes irritation of eyes, skin and mucous membranes. |
| | | inchioranes. |
| | Respiratory or skin sensitization | |
| | Skin sensitization | Not classified based on available information. |
| | Respiratory sensitization Product: | Not classified based on available information. Remarks : No data available |
| | Germ cell mutagenicity | Not classified based on available information. |
| | Carcinogenicity | Not classified based on available information. |
| | IARC | No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| | OSHA | No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens. |
| | NTP | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| | Reproductive toxicity | Not classified based on available information. STOT-single exposure Not classified based on available information. |
| | Components: | |
| | sodium dodecyl sulphate: Routes of exposure : | Inhalation |
| | Assessment : | May cause respiratory irritation. |
| | STOT-repeated exposure | Not classified based on available information. |
| | Aspiration toxicity Further information | Not classified based on available information. |
| | Product: | |
| | Remarks : | No data available |
| 12. | Ecological Information | |
| | Ecotoxicity | |
| | Product: | |
| | Toxicity to fish : | Remarks: No data available |
| | Toxicity to algae/aquatic plants : | Remarks: No data available |
| | Toxicity to microorganisms : | Remarks: No data available |
| | Components: sodium dodecyl sulpha Toxicity to fish : | ate: No data available |
| | | |

| | Toxicity to algae/aquatic : plants | No data available |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Persistence and degradability Bioaccumulative potential | No data available |
| | Product: | |
| | Bioaccumulation : | Remarks: No data available No data available |
| | Mobility in soil | No data avallable |
| | Other adverse effects | |
| | Product: | |
| | Ozone-Depletion Potential : | Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product n either contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). |
| | Additional ecological information : | No data available |
| 13. | Disposal Information | |
| | | |
| | Waste Disposal Methods Waste from residues : | Sand to a liganzad wasta managament company. Dispass of as |
| | waste from residues . | Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. |
| | Contaminated packaging : | Dispose of as unused product. Do not re-use empty containers. |
| 14. | Transport Information | |
| | • | |
| | International Regulations | |
| | UNRTDG IATA-DGR | Not regulated as a dangerous good Not regulated as a dangerous good |
| | IMDG-Code | Not regulated as a dangerous good |
| | Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | |
| | Not applicable for product as supplied. | |
| | Domestic regulation 49 CFR | Not regulated as a dangerous good |
| | 47 CFK | Not regulated as a daligerous good |
| | Special precautions for user | |
| | Remarks : | Not classified as dangerous in the meaning of transport regulations. |
| 15. | Regulatory Information | |
| | | |
| | CERCLA Reportable Quantity Listed substances in the product are at low enough levels to not be expected to exceed the RQ SARA 304 Extremely Hazardous Substances Reportable Quantity This material does not contain any components with a section 304 EHS RQ. | |
| | | |
| | SARA 302 Extremely Hazardous Substances Threshold Planning Quantity This material does not contain any components with a section 302 EHS TPQ. | |
| | SARA 311/312 Hazards : | No SARA Hazards |
| | SARA 313 : | This material does not contain any chemical components with known |
| | | CAS numbers that exceed the threshold (De Minimis) reporting |
| | | levels established by SARA Title III, Section 313. |
| | TSCA list | No substances are subject to a Significant New Use Rule. No substances are subject to TSCA 12(b) export notification |

16. Other Information

This information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances

requirements.

of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of the material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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Proteinase K Powder MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

| Product Name | |
|-----------------------|--|
| Product number | |
| Product Description | |
| | |
| Manufacturer/Supplier | |

Proteinase K Powder Kit Component

VitroVivo Biotech, LLC. Phone: 301-500-0499

405 E Gude Dr. Suite 214, Rockville, MD 20850 Toll free: 1-800-260-9817

Fax: 844-248-6208

Composition/information on ingredients 2.

Composition:

| Name | CAS No. |
|--------------|------------|
| Proteinase K | 39450-01-6 |

3. **Hazards Identification**

| GHS classification in accord 1910.1200) | lance with the OSHA Hazard Communication Standard (29 CFR |
|-----------------------------------------|-----------------------------------------------------------------------------------------------|
| Respiratory sensitization : | Category 1 |
| GHS label elements | |
| Hazard pictograms : | |
| Signal Word : | Danger |
| Hazard Statements : | H334 May cause allergy or asthma symptoms or breathing |
| | difficulties if inhaled. |
| Precautionary Statements : | Prevention: |
| | P261 Avoid breathing mist or vapors. |
| | P280 Wear protective gloves/ protective clothing/ eye protection/ |
| | face protection. |
| | P285 In case of inadequate ventilation wear respiratory protection. |
| | Response: |
| | P304 + P341 IF INHALED: If breathing is difficult, remove person |
| | to fresh air and keep comfortable for breathing. P342 + P311 If |
| | experiencing respiratory symptoms: Call a POISON CENTER/ |
| | doctor. |
| Other hazards | None known. |
| First Aid Measures | |
| General advice : | Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. |

| General advice : | Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| If inhaled : | If unconscious, place in recovery position and seek medical advice. Keep respiratory tract clear. If symptoms persist, call a physician. |
| In case of skin contac | |
| In case of eye contact | |
| If swallowed : | If accidentally swallowed obtain immediate medical attention. Rinse mouth with water. Never give anything by mouth to an unconscious person. |
| Most important sympt | toms and effects, both acute and delayed : |
| | May cause allergy or asthma symptoms or breathing difficulties if inhaled. No information available. |
| Notes to physician : | No information available |

5. Fire Fighting Measures

VitroSure[™] DNA FFPE Tissue Isolation Kit MSDS

| | Suitable extinguishing med | lia : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. | |
|----|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--|
| | Specific hazards during fir | e fighting : Exposure to decomposition products may be a hazard to health. | |
| | Hazardous combustion pro | | |
| | Further information : | In the event of fire and/or explosion do not breathe fumes. | |
| | Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if | | |
| | | necessary | |
| 6. | Accidental Release Measures | | |
| | Personal Precautions | Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing | |

Environmental Precautions Prevent further leakage or spillage if safe to do so.

Methods for Containment Keep in suitable, closed containers for disposal. and Clean Up

| 7. Handling and Storage | | |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Handling | Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from clothing and other combustible materials. | |
| Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Do not store near combustible materials. Incompatible Materials. Reducing Agent. Strong acids. Strong reducing agents. Combustible material | |
| 8. Exposure Controls, Pers | 8. Exposure Controls, Personal Protection | |

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

(

| i ersonar protective equipment | | |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Hand protection | | |
| Remarks : | The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). | |
| Eye protection : | Safety glasses | |
| Skin and body protection : | Choose body protection according to the amount and concentration of the dangerous substance at the work place. Footwear protecting against chemicals | |
| Hygiene measures : | Keep away from food and drink. Wash hands before breaks and at the end of workday. Ensure adequate ventilation, especially in confined areas. Avoid contact with the skin and the eyes. When using do not eat, drink or smoke. | |

9. Physical and Chemical Properties

| Physical State | Solid |
|----------------------------------|--------------------------|
| Appearance | White |
| Odor | characteristic |
| Odor Threshold | No information available |
| pH | No information available |
| Melting Point/Range | No information available |
| Boiling Point/Range | No information available |
| Flash Point | No information available |
| Evaporation Rate | Not applicable |
| Flammability (solid,gas) | No information available |
| Flammability or explosive limits | |
| Upper | No data available |

| Lower | No data available |
|----------------------------------------|--------------------------|
| Vapor Pressure | No information available |
| Vapor Density | Not applicable |
| Specific Gravity | No data available |
| Partition coefficient; n-octanol/water | ·No data available |
| Autoignition Temperature | Not applicable |
| Decomposition Temperature | No data available |
| Viscosity | Not applicable |

10. Stability and Reactivity

| Reactivity : | No decomposition if stored and applied as directed. | |
|----------------------------------------------------------------------------------------|-----------------------------------------------------|--|
| Chemical stability : | No decomposition if stored and applied as directed. | |
| Conditions to avoid : | No data available | |
| Incompatible materials : | No data available | |
| Hazardous decomposition products : No decomposition if stored and applied as directed. | | |

11. Toxicological Information

Acute toxicity

Not classified based on available information.

| Product: | |
|-----------------------------|----------------------------|
| Acute oral toxicity : | Remarks: No data available |
| Acute inhalation toxicity : | Remarks: No data available |
| Acute dermal toxicity : | Remarks: No data available |

Serious eye damage/eye irritation

Not classified based on available information. Product: Remarks : The product causes irritation of eyes, skin and mucous membranes.

| | Respiratory or skin sensitization | |
|-----|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Skin sensitization | Not classified based on available information. |
| | Respiratory sensitization | Not classified based on available information. |
| | Product: | Remarks : No data available |
| | Germ cell mutagenicity | Not classified based on available information. |
| | Carcinogenicity | Not classified based on available information. |
| | IARC | No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| | OSHA | No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens. |
| | NTP | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| | Reproductive toxicity | Not classified based on available information. STOT-single exposure Not classified based on available information. |
| | Components: sodium dodecyl sulphate: | |
| | Routes of exposure : | Inhalation |
| | Assessment : | May cause respiratory irritation. |
| | STOT-repeated exposure | Not classified based on available information. |
| | Aspiration toxicity | Not classified based on available information. |
| | Further information | |
| | Product: | |
| | Remarks : | No data available |
| 12. | Ecological Information | |
| | Ecotoxicity Persistence and Degradability | Do not empty into drains. Soluble in water Persistence is unlikely based on information |

available.

| | Bioaccumulation/ Accumulation Mobility | No information available. Will likely be mobile in the environment due to its water |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13. | Disposal Information | |
| | Waste Disposal Methods | Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate class |
| 14. | Transport Information | |
| | International Regulations UNRTDG IATA-DGR IMDG-Code | Not regulated as a dangerous good Not regulated as a dangerous good Not regulated as a dangerous good |
| 15. | Regulatory Information | |
| | Other International Regulations Mexico - Grade | Not applicable This product does not contain any Proposition 65 chemicals. ns Not applicable N N rity This product does not contain any DHS chemicals. No information available |
| | Authorisation/Restrictions according to EU REAC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) Not applicable | |
| Safety, health and environmental regulations/legislation specific for the substance or mixture Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements Not applicable | | |
| 16. | Other Information | |
| This information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of the material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1. | | |
| | Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the | |

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous GoodsDOT: US Department of TransportationIATA: International Air Transport AssociationACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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Proteinase K Buffer MSDS

Identification of the Substance/Mixture and Company 1 Identification of the substance or mixture Proteinase K Buffer Product Name **Product number Product Description** Kit Component Manufacturer/Supplier VitroVivo Biotech, LLC. 405 E Gude Dr. Suite 214, Rockville, MD 20850 Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208 2 **Composition/information on ingredients Composition:** Name Components Mixture No hazardous ingredients **Hazards Identification** 3. GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) Not a hazardous substance or mixture. **GHS** label elements Not a hazardous substance or mixture. Other hazards None known. 4. **First Aid Measures General Advice** Show this safety data sheet to the doctor in attendance. If inhaled : Move to fresh air. If symptoms persist, call a physician. In case of skin contact : Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician. In case of eye contact : Remove contact lenses. Protect unharmed eye. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. If swallowed : If accidentally swallowed obtain immediate medical attention. Rinse mouth with water. Never give anything by mouth to an unconscious person. Most important symptoms and effects, both acute and delayed : No information available. Notes to physician : No information available. **Fire Fighting Measures** 5. Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Specific hazards during fire fighting : Exposure to decomposition products may be a hazard to health. Hazardous combustion products : No hazardous combustion products are known Further information : In the event of fire and/or explosion do not breathe fumes. Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary **Accidental Release Measures** 6.

| | | e personal protective equipment as required. Evacuate personnel to safe as. Avoid contact with skin, eyes or clothing |
|----|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Environmental Precautions D | o not allow uncontrolled discharge of product into the environment. |
| | Methods for Containment Ke and Clean Up | ep in suitable, closed containers for disposal. |
| 7. | Handling and Storage | |
| | Advice on safe handling : Further information on storage | |
| 8. | Exposure Controls, Personal Pr | otection |
| | Components with workplace control parameters Contains no substances with occupational exposure limit values. | |
| | Personal protective equipment Hand protection | Remarks : The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). |
| | Eye protection : Skin and body protection : Hygiene measures : | Safety glasses Choose body protection according to the amount and concentration of the dangerous substance at the work place. Footwear protecting against chemicals Keep away from food and drink. When using do not eat, |
| | | drink or smoke. |
| 9. | Physical and Chemical Proper | ties |
| | Physical State | liquid |
| | Appearance Odor | No data available characteristic |
| | Odor Odor Threshold | No information available |
| | pH | 8.0 |
| | Melting Point/Range | No information available |
| | Boiling Point/Range | No information available |
| | Flash Point | No information available |
| | Evaporation Rate | Not applicable |
| | Flammability (solid,gas) | No information available |
| | Flammability or explosive limi Upper | S No data available |
| | Lower | No data available |
| | Vapor Pressure | No information available |
| | Vapor Density | Not applicable |
| | Relative density : | No data available |
| | Density | No data available |
| | Partition coefficient; n-octanol | |
| | Autoignition Temperature | Not applicable |
| | Decomposition Temperature | No data available |
| | Viscosity | Not applicable |

10. Stability and Reactivity

| Reactivity : | No decomposition if stored and applied as directed. |
|------------------------------|-----------------------------------------------------|
| Chemical stability : | No decomposition if stored and applied as directed. |
| Conditions to avoid : | No data available |

 Incompatible materials :
 No data available

 Hazardous decomposition products :
 No decomposition if stored and applied as directed.

11. Toxicological Information

Acute toxicity

Not classified based on available information.

| Product: | |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Acute oral toxicity : | Remarks: No data available |
| Acute inhalation toxicity : | Remarks: No data available |
| Acute dermal toxicity : | Remarks: No data available |
| Respiratory or skin sensitization | |
| Skin sensitization | Not classified based on available information. |
| Respiratory sensitization | Not classified based on available information. |
| Product: | Remarks : No data available |
| Germ cell mutagenicity | Not classified based on available information. |
| Carcinogenicity | Not classified based on available information. |
| IARC | No ingredient of this product present at levels greater than or equal to |
| | 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| OSHA | No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens. |
| NTP | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| Reproductive toxicity | Not classified based on available information. STOT-single exposure |
| | Not classified based on available information. |
| STOT-repeated exposure | Not classified based on available information. |
| Aspiration toxicity | Not classified based on available information. |
| Further information | |
| Product: | |
| Remarks : | No data available |

12. Ecological Information

| Ecotoxicity Product: | |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish : | Remarks: No data available |
| Toxicity to algae/aquatic plants : | Remarks: No data available |
| Toxicity to microorganisms : | Remarks: No data available |
| Persistence and degradability | No data available |
| Bioaccumulative potential | |
| Product: | |
| Bioaccumulation : | Remarks: No data available |
| Mobility in soil | No data available |
| Other adverse effects | |
| Product: | |
| Ozone-Depletion Potential : | Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product n either contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). |
| Additional ecological information : | No data available |
| 13. Disposal Information | |

| Disposal methods | |
|--------------------------|---------------------------------------------------------------------|
| Waste from residues : | Dispose of contents/container in accordance with local regulation. |
| Contaminated packaging : | Empty containers should be taken to an approved waste handling site |

14. Transport Information

| | International Regulations | |
|-----|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| | UNRTDG | Not regulated as a dangerous good |
| | IATA-DGR | Not regulated as a dangerous good |
| | IMDG-Code | Not regulated as a dangerous good |
| | Transport in bulk according to Ann | ex II of MARPOL 73/78 and the IBC Code |
| | Not applicable for product as supplied | |
| | Domestic regulation | |
| | 49 CFR | Not regulated as a dangerous good |
| | | |
| | Special precautions for user | |
| | Remarks : | Not classified as dangerous in the meaning of transport regulations. |
| | | |
| 15. | Regulatory Information | |
| | | |
| | CERCLA Reportable Quantity | |
| | Listed substances in the product are at low enough levels to not be expected to exceed the RQ | |
| | | |
| | SARA 304 Extremely Hazardous Substances Reportable Quantity | |
| | This material does not contain any components with a section 304 EHS RQ. | |
| | | |
| | SARA 302 Extremely Hazardous Substances Threshold Planning Quantity | |
| | This material does not contain any components with a section 302 EHS TPQ. | |
| | | |
| | SARA 311/312 Hazards : | No SARA Hazards |
| | SADA 212 . | This motorial days not contain any shamical common ants with Imaxim |

| SARA 313 : | This material does not contain any chemical components with known |
|------------|-------------------------------------------------------------------|
| | CAS numbers that exceed the threshold (De Minimis) reporting |
| | levels established by SARA Title III, Section 313. |
| TSCA list | No substances are subject to a Significant New Use Rule. |
| | No substances are subject to TSCA 12(b) export notification |
| | requirements. |
| | |

16. Other Information

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LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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