



# RNAgard<sup>®</sup> Blood RNA Purification Kit

## Safety Data Sheet (SDS)

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**REF** CE-12000-001

**CE** **IVD**

**For in vitro diagnostic use.**

# Biomātrica<sup>®</sup>



**Biomatrica, Inc.**  
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**EMERGO EUROPE**  
Prinsessegracht 20  
2514 AP The Hague  
The Netherlands

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

**1.1. Product identifier**

**Trade name or designation of the mixture** RNAgard Blood RNA Precipitation Buffer  
**Registration number** -  
**Synonyms** CE-12180-001 (product code)  
**Document number** 8602  
**Issue date** 18-July-2017  
**Version number** 02  
**Revision date** 18-July-2017  
**Supersedes date** 18-July-2017

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

**Identified uses** Purification of RNA in blood.  
**Uses advised against** None known.

**1.3. Details of the supplier of the safety data sheet**

**Manufacturer** Biomātrica  
**Address** 5627 Oberlin Drive, Suite 120  
 San Diego, CA 92121  
 USA  
**Telephone** 1-858-550-0308  
**Contact person** Steven Schaefer  
**Email** info@biomatrica.com

**1.4. Emergency telephone number** 1-858-550-0308  
**Information on operation hours** 8:30am – 5:30pm PT

**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

**Classification according to Regulation (EC) No 1272/2008 as amended**

**Health hazards**

|  |   |  |
|--|---|--|
| Acute toxicity, oral                             | Category 4                              | H302 - Harmful if swallowed.             |
| Skin corrosion/irritation                        | Category 2                              | H315 - Causes skin irritation.           |
| Serious eye damage/eye irritation                | Category 2                              | H319 - Causes serious eye irritation.    |
| Specific target organ toxicity - single exposure | Category 3 respiratory tract irritation | H335 - May cause respiratory irritation. |

**Environmental hazards**

|  |            |   |
|--|------------|---|
| Hazardous to the aquatic environment, long-term aquatic hazard | Category 3 | H412 - Harmful to aquatic life with long lasting effects. |
|--|------------|---|

**Hazard summary** Harmful if swallowed. Causes serious eye irritation. Causes skin irritation. May cause irritation to the respiratory system. Dangerous for the environment if discharged into watercourses.

**2.2. Label elements**

**Label according to Regulation (EC) No. 1272/2008 as amended**

**Contains:** Guanidinium chloride, TS-092853

**Hazard pictograms**



**Signal word** Warning

## Hazard statements

|      |  |
|------|--|
| H302 | Harmful if swallowed.                              |
| H315 | Causes skin irritation.                            |
| H319 | Causes serious eye irritation.                     |
| H335 | May cause respiratory irritation.                  |
| H412 | Harmful to aquatic life with long lasting effects. |

## Precautionary statements

### Prevention

|      |   |
|------|---|
| P261 | Avoid breathing mist or vapour.                 |
| P264 | Wash thoroughly after handling.                 |
| P280 | Wear protective gloves and eye/face protection. |

### Response

|                    |  |
|--------------------|--|
| P304 + P340        | IF INHALED: Remove person to fresh air and keep comfortable for breathing.   |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |

### Storage

|             |  |
|-------------|--|
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
|-------------|--|

### Disposal

Not assigned.

Supplemental label information None.

2.3. Other hazards Not a PBT or vPvB substance or mixture.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### General information

| Chemical name          | %   | CAS-No. / EC No.     | REACH Registration No. | Index No.    | Notes |
|------------------------|---|----------------------|------------------------|--------------|-------|
| Guanidinium chloride   | 30-45   | 50-01-1<br>200-002-3 | -                      | 607-148-00-0 |       |
| <b>Classification:</b> | Acute Tox. 4;H302, Skin Irrit. 2;H315, Eye Irrit. 2;H319, Acute Tox. 4;H332, STOT SE 3;H335 |                      |                        |              |       |
| TS-092853              | 1-10  | -                    | -                      | -            |       |
| <b>Classification:</b> | Acute Tox. 4;H302, Eye Irrit. 2;H319, Aquatic Chronic 2;H411                                |                      |                        |              |       |

#### Composition comments

The full text for all H-statements is displayed in section 16.  
All concentrations are in percent by weight unless otherwise indicated.  
Components not listed are either non-hazardous or are below reportable limits.  
Chemical ingredient identity and/or concentration information withheld for some or all components present is confidential business information.

## SECTION 4: First aid measures

#### General information

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

#### 4.1. Description of first aid measures

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell.   |
| <b>Skin contact</b> | Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.  |
| <b>Eye contact</b>  | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. |
| <b>Ingestion</b>    | Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.   |

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

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

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

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: Firefighting measures

#### General fire hazards

This material will not burn until the water has evaporated. Residue can burn. When dry may form combustible dust concentrations in air.

|   |   |
|---|---|
| <b>5.1. Extinguishing media</b>                                   |   |
| <b>Suitable extinguishing media</b>                               | Product: Use extinguishing agent suitable for type of surrounding fire. Dried product: Foam. Powder.                                      |
| <b>Unsuitable extinguishing media</b>                             | Do not use water jet as an extinguisher, as this may spread the fire.   |
| <b>5.2. Special hazards arising from the substance or mixture</b> | During fire, gases hazardous to health may be formed. Combustion products may include: Carbon oxides, nitrogen oxides, hydrogen chloride. |
| <b>5.3. Advice for firefighters</b>                               |   |
| <b>Special protective equipment for firefighters</b>              | Self-contained breathing apparatus and full protective clothing must be worn in case of fire.   |
| <b>Special fire fighting procedures</b>                           | Move containers from fire area if you can do so without risk.   |
| <b>Specific methods</b>   | Use standard firefighting procedures and consider the hazards of other involved materials.  |

## SECTION 6: Accidental release measures

|   |  |
|---|--|
| <b>6.1. Personal precautions, protective equipment and emergency procedures</b> |  |
| <b>For non-emergency personnel</b>  | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapour. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.  |
| <b>For emergency responders</b>   | Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.  |
| <b>6.2. Environmental precautions</b>   | Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.   |
| <b>6.3. Methods and material for containment and cleaning up</b>                | Keep wetted with water. Do not allow to dry. This product is miscible in water. Prevent product from entering drains.<br><br>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.<br><br>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.<br><br>Never return spills to original containers for re-use. |
| <b>6.4. Reference to other sections</b>   | For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.  |

## SECTION 7: Handling and storage

|  |  |
|--|--|
| <b>7.1. Precautions for safe handling</b>                                | Do not taste or swallow. Avoid breathing mist or vapour. Avoid contact with eyes, skin, and clothing. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. |
| <b>7.2. Conditions for safe storage, including any incompatibilities</b> | Store locked up. Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS).   |
| <b>7.3. Specific end use(s)</b>  | Purification of RNA in blood.  |

## SECTION 8: Exposure controls/personal protection

|   |   |
|---|---|
| <b>8.1. Control parameters</b>                    |   |
| <b>Occupational exposure limits</b>               | No exposure limits noted for ingredient(s).   |
| <b>Biological limit values</b>                    | No biological exposure limits noted for the ingredient(s).  |
| <b>Recommended monitoring procedures</b>          | Follow standard monitoring procedures.  |
| <b>Derived no effect levels (DNELs)</b>           | Not available.  |
| <b>Predicted no effect concentrations (PNECs)</b> | Not available.  |
| <b>8.2. Exposure controls</b>                     |   |
| <b>Appropriate engineering controls</b>           | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Eye wash fountain and emergency showers are recommended. |

## Individual protection measures, such as personal protective equipment

|  |  |
|--|--|
| <b>General information</b>             | Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.   |
| <b>Eye/face protection</b>             | Wear safety glasses with side shields (or goggles). Face shield is recommended.  |
| <b>Skin protection</b>                 |  |
| - Hand protection                      | Wear appropriate chemical resistant gloves.  |
| - Other                                | Wear appropriate chemical resistant clothing.  |
| <b>Respiratory protection</b>          | In case of insufficient ventilation, wear suitable respiratory equipment.  |
| <b>Thermal hazards</b>                 | Wear appropriate thermal protective clothing, when necessary.  |
| <b>Hygiene measures</b>                | Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |
| <b>Environmental exposure controls</b> | Inform appropriate managerial or supervisory personnel of all environmental releases.  |

## SECTION 9: Physical and chemical properties

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

#### Appearance

|  |                 |
|--|-----------------|
| <b>Physical state</b>                          | Liquid.         |
| <b>Form</b>                                    | Liquid.         |
| <b>Colour</b>                                  | Not available.  |
| <b>Odour</b>                                   | Not available.  |
| <b>Odour threshold</b>                         | Not available.  |
| <b>pH</b>                                      | 9 - 9.4         |
| <b>Melting point/freezing point</b>            | Not available.  |
| <b>Initial boiling point and boiling range</b> | Not available.  |
| <b>Flash point</b>                             | Not available.  |
| <b>Evaporation rate</b>                        | Not available.  |
| <b>Flammability (solid, gas)</b>               | Not applicable. |

#### Upper/lower flammability or explosive limits

|  |                              |
|--|------------------------------|
| <b>Flammability limit - lower (%)</b>          | Not available.               |
| <b>Flammability limit - upper (%)</b>          | Not available.               |
| <b>Vapour pressure</b>                         | Not available.               |
| <b>Vapour density</b>                          | Not available.               |
| <b>Relative density</b>                        | Not available.               |
| <b>Solubility(ies)</b>                         | Completely soluble in water. |
| <b>Partition coefficient (n-octanol/water)</b> | Not available.               |
| <b>Auto-ignition temperature</b>               | Not available.               |
| <b>Decomposition temperature</b>               | Not available.               |
| <b>Viscosity</b>                               | Not available.               |
| <b>Explosive properties</b>                    | Not explosive.               |
| <b>Oxidising properties</b>                    | Not oxidising.               |

**9.2. Other information** Not relevant additional information available.

## SECTION 10: Stability and reactivity

|   |   |
|---|---|
| <b>10.1. Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>10.2. Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>10.3. Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.                                   |
| <b>10.4. Conditions to avoid</b>                | Contact with incompatible materials. Drying of product and subsequent generation of dust.     |
| <b>10.5. Incompatible materials</b>             | Strong oxidising agents.  |

**10.6. Hazardous decomposition products**

No hazardous decomposition products are known.

**SECTION 11: Toxicological information**

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

**Information on likely routes of exposure**

**Inhalation** May cause irritation to the respiratory system.

**Skin contact** Causes skin irritation.

**Eye contact** Causes serious eye irritation.

**Ingestion** Harmful if swallowed.

**Symptoms** Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

**11.1. Information on toxicological effects**

**Acute toxicity** Harmful if swallowed.

| Components                         | Species | Test results        |
|------------------------------------|---------|---------------------|
| Guanidinium chloride (CAS 50-01-1) |         |                     |
| <b>Acute</b>                       |         |                     |
| <b>Dermal</b>                      |         |                     |
| LD50                               | Rabbit  | > 2000 mg/kg        |
| <b>Inhalation</b>                  |         |                     |
| <i>Dust</i>                        |         |                     |
| LC50                               | Rat     | 3.181 mg/l, 4 Hours |
| <b>Oral</b>                        |         |                     |
| LD50                               | Rat     | 474.6 mg/kg         |

**Skin corrosion/irritation** Causes skin irritation.

**Serious eye damage/eye irritation** Causes serious eye irritation.

**Respiratory sensitisation** Due to partial or complete lack of data the classification is not possible.

**Skin sensitisation** Based on available data, the classification criteria are not met.

**Germ cell mutagenicity** Based on available data, the classification criteria are not met.

**Carcinogenicity** Due to partial or complete lack of data the classification is not possible.

**Reproductive toxicity** Based on available data, the classification criteria are not met.

**Specific target organ toxicity - single exposure** May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure** Based on available data, the classification criteria are not met.

**Aspiration hazard** Due to partial or complete lack of data the classification is not possible.

**Mixture versus substance information** No information available.

**Other information** None known.

**SECTION 12: Ecological information**

**12.1. Toxicity** Harmful to aquatic life with long lasting effects. Based on available data, the classification criteria are not met for hazardous to the aquatic environment, acute hazard.

**12.2. Persistence and degradability** No data is available on the degradability of this product.

**12.3. Bioaccumulative potential** No data available.

**Partition coefficient n-octanol/water (log Kow)** Not available.

**Bioconcentration factor (BCF)** Not available.

**12.4. Mobility in soil** This product is miscible in water.

**12.5. Results of PBT and vPvB assessment** Not a PBT or vPvB substance or mixture.

**12.6. Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|                                     |  |
|-------------------------------------|--|
| <b>Residual waste</b>               | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.  |
| <b>Contaminated packaging</b>       | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.   |
| <b>EU waste code</b>                | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Disposal methods/information</b> | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| <b>Special precautions</b>          | Dispose in accordance with all applicable regulations.   |

## SECTION 14: Transport information

### ADR

14.1. - 14.6.: Not regulated as dangerous goods.

### RID

14.1. - 14.6.: Not regulated as dangerous goods.

### ADN

14.1. - 14.6.: Not regulated as dangerous goods.

### IATA

14.1. - 14.6.: Not regulated as dangerous goods.

### IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code** Not established.

## SECTION 15: Regulatory information

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

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

TS-092853 (CAS -)

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

TS-092853 (CAS -)

#### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended**

Not listed.

#### Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

## Other EU regulations

### Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

## Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

## National regulations

Follow national regulation for work with chemical agents.

## 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

### List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.  
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road.  
CAS: Chemical Abstracts Service.  
CEN: European Committee for Standardisation.  
ECHA: European Chemicals Agency  
IATA: International Air Transport Association.  
IMDG Code: International Maritime Dangerous Goods Code.  
PBT: Persistent, bioaccumulative, toxic.  
REACH: Registration, Evaluation and Authorization of Chemicals (REGULATION (EC) No 1907/2006 concerning Registration, Evaluation Authorization and Restriction of Chemicals).  
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.  
vPvB: very Persistent, very Bioaccumulative.

### References

ECHA registered substances database

### Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

### Full text of any H-statements not written out in full under Sections 2 to 15

H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.  
H411 Toxic to aquatic life with long lasting effects.

### Training information

Follow training instructions when handling this material.

### Disclaimer

Biomatrix, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.



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

**1.1. Product identifier**

**Trade name or designation of the mixture** Resuspension Buffer  
**Registration number** -  
**Synonyms** RS1-001 (product code)  
**Document number** 8902  
**Issue date** 18-July-2017  
**Version number** 02  
**Revision date** 18-July-2017  
**Supersedes date** 18-July-2017

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

**Identified uses** Purification of RNA in blood.  
**Uses advised against** None known.

**1.3. Details of the supplier of the safety data sheet**

**Manufacturer** Biomātrica  
**Address** 5627 Oberlin Drive, Suite 120  
 San Diego, CA 92121  
 USA  
**Telephone** 1-858-550-0308  
**Contact person** Steven Schaefer  
**Email** info@biomatrica.com

**1.4. Emergency telephone number** 1-858-550-0308  
**Information on operation hours** 8:30am – 5:30pm PT

**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

**Classification according to Regulation (EC) No 1272/2008 as amended**

**Health hazards**

|                                   |            |                                       |
|-----------------------------------|------------|---------------------------------------|
| Acute toxicity, oral              | Category 4 | H302 - Harmful if swallowed.          |
| Acute toxicity, dermal            | Category 4 | H312 - Harmful in contact with skin.  |
| Acute toxicity, inhalation        | Category 4 | H332 - Harmful if inhaled.            |
| Skin corrosion/irritation         | Category 2 | H315 - Causes skin irritation.        |
| Serious eye damage/eye irritation | Category 2 | H319 - Causes serious eye irritation. |

**Environmental hazards**

|  |            |   |
|--|------------|---|
| Hazardous to the aquatic environment, long-term aquatic hazard | Category 3 | H412 - Harmful to aquatic life with long lasting effects. |
|--|------------|---|

**Hazard summary** Harmful if inhaled. Harmful in contact with skin. Harmful if swallowed. Causes serious eye irritation. Causes skin irritation. Dangerous for the environment if discharged into watercourses.

**2.2. Label elements**

**Label according to Regulation (EC) No. 1272/2008 as amended**

**Contains:** TS-589599, TS-642137

**Hazard pictograms**



|                          |  |
|--------------------------|--|
| <b>Signal word</b>       | Warning  |
| <b>Hazard statements</b> |  |
| H302                     | Harmful if swallowed.                              |
| H312                     | Harmful in contact with skin.                      |
| H315                     | Causes skin irritation.                            |
| H319                     | Causes serious eye irritation.                     |
| H332                     | Harmful if inhaled.                                |
| H412                     | Harmful to aquatic life with long lasting effects. |

#### Precautionary statements

##### Prevention

|      |  |
|------|--|
| P261 | Avoid breathing mist/vapours/spray.  |
| P264 | Wash thoroughly after handling.  |
| P270 | Do not eat, drink or smoke when using this product.                        |
| P273 | Avoid release to the environment.  |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |

##### Response

|                    |  |
|--------------------|--|
| P301 + P312        | IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.  |
| P302 + P352        | IF ON SKIN: Wash with plenty of water.   |
| P304 + P340        | IF INHALED: Remove person to fresh air and keep comfortable for breathing.   |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P362 + P364        | Take off contaminated clothing and wash it before reuse.   |

**Storage** Not assigned.

**Disposal** Not assigned.

**Supplemental label information** EUH031 - Contact with acids liberates toxic gas.

**2.3. Other hazards** Not a PBT or vPvB substance or mixture.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

##### General information

| Chemical name          | %   | CAS-No. / EC No. | REACH Registration No. | Index No. | Notes |
|------------------------|---|------------------|------------------------|-----------|-------|
| TS-589599              | 40-55   | -                | -                      | -         |       |
| <b>Classification:</b> | Acute Tox. 4;H302, Acute Tox. 4;H312, Acute Tox. 4;H332, Aquatic Chronic 3;H412 |                  |                        |           | A     |
| TS-642137              | 1-10  | -                | -                      | -         |       |
| <b>Classification:</b> | Skin Irrit. 2;H315, Eye Irrit. 2;H319, STOT SE 3;H335                           |                  |                        |           |       |

##### List of abbreviations and symbols that may be used above

Note A: Without prejudice to Article 17(2), the name of the substance must appear on the label in the form of one of the designations given in Part 3. In Part 3, use is sometimes made of a general description such as "... compounds" or "... salts". In this case, the supplier is required to state on the label the correct name, due account being taken of section 1.1.1.4.

##### Composition comments

The full text for all H-statements is displayed in section 16.  
 All concentrations are in percent by weight unless otherwise indicated.  
 Components not listed are either non-hazardous or are below reportable limits.  
 Chemical ingredient identity and/or concentration information withheld for some or all components present is confidential business information.

### SECTION 4: First aid measures

##### General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

#### 4.1. Description of first aid measures

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTRE or doctor/physician if you feel unwell.       |
| <b>Skin contact</b> | Remove contaminated clothing. Wash with plenty of soap and water. Get medical advice/attention if you feel unwell. If skin irritation occurs: Get medical advice/attention.                         |
| <b>Eye contact</b>  | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. |
| <b>Ingestion</b>    | Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.   |

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

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

**4.3. Indication of any immediate medical attention and special treatment needed** Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: Firefighting measures

**General fire hazards** Dried residue from the product will burn.

**5.1. Extinguishing media**

**Suitable extinguishing media** Use extinguishing agent suitable for type of surrounding fire.

**Unsuitable extinguishing media** None known.

**5.2. Special hazards arising from the substance or mixture** During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides, nitrogen oxides, cyanide compounds, sulfur oxides.

**5.3. Advice for firefighters**

**Special protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Special fire fighting procedures** Move containers from fire area if you can do so without risk.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapours and spray mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

**For emergency responders** Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

**6.2. Environmental precautions** Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up**

This product is miscible in water. Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

**6.4. Reference to other sections** For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling** Do not taste or swallow. Avoid inhalation of vapours and spray mists. Avoid contact with eyes, skin, and clothing. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

**7.2. Conditions for safe storage, including any incompatibilities** Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see section 10 of the SDS). Keep away from acids.

**7.3. Specific end use(s)** Purification of RNA in blood.

## SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**

**Occupational exposure limits** No exposure limits noted for ingredient(s).

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Recommended monitoring procedures** Follow standard monitoring procedures.

**Derived no effect levels (DNELs)** Not available.

**Predicted no effect concentrations (PNECs)** Not available.

## 8.2. Exposure controls

### Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Eye wash fountain and emergency showers are recommended.

### Individual protection measures, such as personal protective equipment

#### General information

Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

#### Eye/face protection

Wear safety glasses; chemical goggles (if splashing is possible).

#### Skin protection

##### - Hand protection

Wear appropriate chemical resistant gloves.

##### - Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

#### Respiratory protection

Wear a CEN approved respirator, with appropriate cartridge or canister, suitable for airborne concentration levels present.

#### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

### Hygiene measures

Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

### Environmental exposure controls

Inform appropriate managerial or supervisory personnel of all environmental releases.

## SECTION 9: Physical and chemical properties

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

#### Appearance

##### Physical state

Liquid.

##### Form

Liquid.

##### Colour

Not available.

#### Odour

Not available.

#### Odour threshold

Not available.

#### pH

5.5 - 6.2

#### Melting point/freezing point

Not available.

#### Initial boiling point and boiling range

Not available.

#### Flash point

Not available.

#### Evaporation rate

Not available.

#### Flammability (solid, gas)

Not applicable.

#### Upper/lower flammability or explosive limits

##### Flammability limit - lower (%)

Not available.

##### Flammability limit - upper (%)

Not available.

#### Vapour pressure

Not available.

#### Vapour density

Not available.

#### Relative density

Not available.

#### Solubility(ies)

Completely soluble in water.

#### Partition coefficient (n-octanol/water)

Not available.

#### Auto-ignition temperature

Not available.

#### Decomposition temperature

Not available.

#### Viscosity

Not available.

#### Explosive properties

Not explosive.

#### Oxidising properties

Not oxidising.

### 9.2. Other information

No relevant additional information available.

## SECTION 10: Stability and reactivity

|   |   |
|---|---|
| <b>10.1. Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport.     |
| <b>10.2. Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>10.3. Possibility of hazardous reactions</b> | Contact with acids liberates toxic gases. Reacts with acids and generates thiocyanic acid (HSCN). |
| <b>10.4. Conditions to avoid</b>                | Contact with incompatible materials.  |
| <b>10.5. Incompatible materials</b>             | Acids. Strong oxidising agents.   |
| <b>10.6. Hazardous decomposition products</b>   | No hazardous decomposition products are known.  |

## SECTION 11: Toxicological information

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

### Information on likely routes of exposure

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Harmful if inhaled.                                   |
| <b>Skin contact</b> | Harmful in contact with skin. Causes skin irritation. |
| <b>Eye contact</b>  | Causes serious eye irritation.                        |
| <b>Ingestion</b>    | Harmful if swallowed.                                 |

**Symptoms** Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

### 11.1. Information on toxicological effects

|   |   |
|---|---|
| <b>Acute toxicity</b>                                     | Harmful if inhaled. Harmful in contact with skin. Harmful if swallowed.     |
| <b>Skin corrosion/irritation</b>                          | Causes skin irritation.   |
| <b>Serious eye damage/eye irritation</b>                  | Causes serious eye irritation.  |
| <b>Respiratory sensitisation</b>                          | Due to partial or complete lack of data the classification is not possible. |
| <b>Skin sensitisation</b>                                 | Due to partial or complete lack of data the classification is not possible. |
| <b>Germ cell mutagenicity</b>                             | Due to partial or complete lack of data the classification is not possible. |
| <b>Carcinogenicity</b>                                    | Due to partial or complete lack of data the classification is not possible. |
| <b>Reproductive toxicity</b>                              | Due to partial or complete lack of data the classification is not possible. |
| <b>Specific target organ toxicity - single exposure</b>   | Due to partial or complete lack of data the classification is not possible. |
| <b>Specific target organ toxicity - repeated exposure</b> | Due to partial or complete lack of data the classification is not possible. |
| <b>Aspiration hazard</b>                                  | Due to partial or complete lack of data the classification is not possible. |
| <b>Mixture versus substance information</b>               | No information available.   |
| <b>Other information</b>                                  | None known.   |

## SECTION 12: Ecological information

|  |   |
|--|---|
| <b>12.1. Toxicity</b>                                  | Harmful to aquatic life with long lasting effects. Based on available data, the classification criteria are not met for hazardous to the aquatic environment, acute hazard.             |
| <b>12.2. Persistence and degradability</b>             | No data is available on the degradability of this product.  |
| <b>12.3. Bioaccumulative potential</b>                 | No data available.  |
| <b>Partition coefficient n-octanol/water (log Kow)</b> | Not available.  |
| <b>Bioconcentration factor (BCF)</b>                   | Not available.  |
| <b>12.4. Mobility in soil</b>                          | This product is water soluble and may disperse in soil.   |
| <b>12.5. Results of PBT and vPvB assessment</b>        | Not a PBT or vPvB substance or mixture.   |
| <b>12.6. Other adverse effects</b>                     | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**Residual waste** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

|                                     |  |
|-------------------------------------|--|
| <b>Contaminated packaging</b>       | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.   |
| <b>EU waste code</b>                | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Disposal methods/information</b> | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| <b>Special precautions</b>          | Dispose in accordance with all applicable regulations.   |

## SECTION 14: Transport information

### ADR

14.1. - 14.6.: Not regulated as dangerous goods.

### RID

14.1. - 14.6.: Not regulated as dangerous goods.

### ADN

14.1. - 14.6.: Not regulated as dangerous goods.

### IATA

14.1. - 14.6.: Not regulated as dangerous goods.

### IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code** Not established.

## SECTION 15: Regulatory information

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

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**  
Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**  
Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**  
Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**  
Not listed.

#### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended**  
Not listed.

#### Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**  
Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**  
Not listed.

#### Other EU regulations

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**  
Not listed.

#### Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

**National regulations** Follow national regulation for work with chemical agents.

**15.2. Chemical safety assessment** No Chemical Safety Assessment has been carried out.

## **SECTION 16: Other information**

### **List of abbreviations**

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road.

CAS: Chemical Abstracts Service.

CEN: European Committee for Standardisation.

ECHA: European Chemicals Agency

IATA: International Air Transport Association.

IMDG Code: International Maritime Dangerous Goods Code.

PBT: Persistent, bioaccumulative, toxic.

REACH: Registration, Evaluation and Authorization of Chemicals (REGULATION (EC) No 1907/2006 concerning Registration, Evaluation Authorization and Restriction of Chemicals).

RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.

vPvB: very Persistent, very Bioaccumulative.

### **References**

ECHA registered substances database

### **Information on evaluation method leading to the classification of mixture**

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

### **Full text of any H-statements not written out in full under Sections 2 to 15**

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

### **Training information**

Follow training instructions when handling this material.

### **Disclaimer**

Biomatrica, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

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

**1.1. Product identifier**

**Name of the substance** DNase I  
**Identification number** 232-667-0 (EC number)  
**Registration number** -  
**Synonyms** BMC15100-50-4 (product code)  
**Document number** 81202  
**Issue date** 18-July-2017  
**Version number** 02  
**Revision date** 18-July-2017  
**Supersedes date** 18-July-2017

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

**Identified uses** Purification of RNA in blood.  
**Uses advised against** None known.

**1.3. Details of the supplier of the safety data sheet**

**Manufacturer** Biomātrica  
**Address** 5627 Oberlin Drive, Suite 120  
 San Diego, CA 92121  
 USA  
**Telephone** 1-858-550-0308  
**Contact person** Steven Schaefers  
**Email** info@biomatrica.com

**1.4. Emergency telephone number** 1-858-550-0308  
**Information on operation hours** 8:30am – 5:30pm PT

**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

**Classification according to Regulation (EC) No 1272/2008 as amended**


**Health hazards**  
 Respiratory sensitisation Category 1 H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Hazard summary** Exposure to powder or dusts may be irritating to eyes, nose and throat. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**2.2. Label elements**

**Label according to Regulation (EC) No. 1272/2008 as amended**

**Contains:** DNase I

**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 dust.



P284 Wear respiratory protection.

**Response**

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTRE/doctor.

**Storage** Not assigned.

**Disposal**

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Supplemental label information** The health hazard evaluation is based on the toxicological properties of a similar material.

**2.3. Other hazards** Not a PBT or vPvB substance or mixture.

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

**General information**

| Chemical name          | %                  | CAS-No. / EC No.       | REACH Registration No. | Index No. | Notes |
|------------------------|--------------------|------------------------|------------------------|-----------|-------|
| DNase I                | 95-100             | 9003-98-9<br>232-667-0 | -                      | -         |       |
| <b>Classification:</b> | Resp. Sens. 1;H334 |                        |                        |           |       |

**Composition comments** The full text for all H-statements is displayed in section 16.  
All concentrations are in percent by weight unless otherwise indicated.

### SECTION 4: First aid measures

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

#### 4.1. Description of first aid measures

**Inhalation** If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.

**Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact** Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion** Rinse mouth. Get medical attention if symptoms occur.

**4.2. Most important symptoms and effects, both acute and delayed** Dusts may irritate the respiratory tract, skin and eyes. Difficulty in breathing.

**4.3. Indication of any immediate medical attention and special treatment needed** Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

### SECTION 5: Firefighting measures

**General fire hazards** Material will burn in a fire.

#### 5.1. Extinguishing media

**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

**5.2. Special hazards arising from the substance or mixture** During fire, gases hazardous to health may be formed.

#### 5.3. Advice for firefighters

**Special protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Special fire fighting procedures** Use water spray to cool unopened containers.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

### SECTION 6: Accidental release measures

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

**For non-emergency personnel** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Ensure adequate ventilation. In case of inadequate ventilation, use respiratory protection. Local authorities should be advised if significant spillages cannot be contained.

|  |   |
|--|---|
| <b>For emergency responders</b>                                  | Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.   |
| <b>6.2. Environmental precautions</b>                            | Avoid discharge into drains, water courses or onto the ground.  |
| <b>6.3. Methods and material for containment and cleaning up</b> | Minimise dust generation and accumulation. Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk.<br><br>Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.<br><br>Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. |
| <b>6.4. Reference to other sections</b>                          | For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.   |

## SECTION 7: Handling and storage

|  |   |
|--|---|
| <b>7.1. Precautions for safe handling</b>                                | Minimise dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid breathing dust. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. |
| <b>7.2. Conditions for safe storage, including any incompatibilities</b> | Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see section 10 of the SDS).   |
| <b>7.3. Specific end use(s)</b>  | Purification of RNA in blood.   |

## SECTION 8: Exposure controls/personal protection

|  |   |
|--|---|
| <b>8.1. Control parameters</b>   |   |
| <b>Occupational exposure limits</b>  | No exposure limits noted for ingredient(s).   |
| <b>Biological limit values</b>   | No biological exposure limits noted for the ingredient(s).  |
| <b>Recommended monitoring procedures</b>                                     | Follow standard monitoring procedures.  |
| <b>Derived no effect levels (DNELs)</b>                                      | Not available.  |
| <b>Predicted no effect concentrations (PNECs)</b>                            | Not available.  |
| <b>8.2. Exposure controls</b>  |   |
| <b>Appropriate engineering controls</b>                                      | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. |
| <b>Individual protection measures, such as personal protective equipment</b> |   |
| <b>General information</b>   | Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.   |
| <b>Eye/face protection</b>   | Use dust-tight, unvented chemical safety goggles when there is potential for eye contact.   |
| <b>Skin protection</b>   |   |
| <b>- Hand protection</b>   | Wear appropriate chemical resistant gloves.   |
| <b>- Other</b>   | Wear suitable protective clothing.  |
| <b>Respiratory protection</b>  | Wear a CEN approved respirator, with appropriate cartridge or canister, suitable for airborne concentration levels present. Respirator type: Chemical respirator with organic vapour cartridge, full facepiece, dust and mist filter.   |
| <b>Thermal hazards</b>   | Wear appropriate thermal protective clothing, when necessary.   |
| <b>Hygiene measures</b>  | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.   |
| <b>Environmental exposure controls</b>                                       | Environmental manager must be informed of all major releases.   |

## SECTION 9: Physical and chemical properties

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

#### Appearance

|                       |        |
|-----------------------|--------|
| <b>Physical state</b> | Solid. |
| <b>Form</b>           | Solid. |
| <b>Colour</b>         | White. |

|   |   |
|---|---|
| <b>Odour</b>  | Odourless.                                    |
| <b>Odour threshold</b>                              | Not available.                                |
| <b>pH</b>   | Not available.                                |
| <b>Melting point/freezing point</b>                 | Not available.                                |
| <b>Initial boiling point and boiling range</b>      | Not available.                                |
| <b>Flash point</b>                                  | Not available.                                |
| <b>Evaporation rate</b>                             | Not available.                                |
| <b>Flammability (solid, gas)</b>                    | Will burn if involved in a fire.              |
| <b>Upper/lower flammability or explosive limits</b> |   |
| <b>Flammability limit - lower (%)</b>               | Not available.                                |
| <b>Flammability limit - upper (%)</b>               | Not available.                                |
| <b>Vapour pressure</b>                              | Not available.                                |
| <b>Vapour density</b>                               | Not available.                                |
| <b>Relative density</b>                             | Not available.                                |
| <b>Solubility(ies)</b>                              | Not available.                                |
| <b>Partition coefficient (n-octanol/water)</b>      | Not available.                                |
| <b>Auto-ignition temperature</b>                    | Not available.                                |
| <b>Decomposition temperature</b>                    | Not available.                                |
| <b>Viscosity</b>                                    | Not available.                                |
| <b>Explosive properties</b>                         | Not explosive.                                |
| <b>Oxidising properties</b>                         | Not oxidising.                                |
| <b>9.2. Other information</b>                       | No relevant additional information available. |

## SECTION 10: Stability and reactivity

|   |   |
|---|---|
| <b>10.1. Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>10.2. Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>10.3. Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.                                   |
| <b>10.4. Conditions to avoid</b>                | Contact with incompatible materials. Minimise dust generation and accumulation.               |
| <b>10.5. Incompatible materials</b>             | Strong oxidising agents.  |
| <b>10.6. Hazardous decomposition products</b>   | No hazardous decomposition products are known.  |

## SECTION 11: Toxicological information

|   |   |
|---|---|
| <b>General information</b>                        | Occupational exposure to the substance or mixture may cause adverse effects.  |
| <b>Information on likely routes of exposure</b>   |   |
| <b>Inhalation</b>                                 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. Dust may irritate respiratory system.  |
| <b>Skin contact</b>                               | Dust or powder may irritate the skin.   |
| <b>Eye contact</b>                                | Dust may irritate the eyes.   |
| <b>Ingestion</b>                                  | May cause discomfort if swallowed.  |
| <b>Symptoms</b>                                   | Dusts may irritate the respiratory tract, skin and eyes. Difficulty in breathing.   |
| <b>11.1. Information on toxicological effects</b> |   |
| <b>Acute toxicity</b>                             | Not expected to be acutely toxic.   |
| <b>Skin corrosion/irritation</b>                  | Due to partial or complete lack of data the classification is not possible.   |
| <b>Serious eye damage/eye irritation</b>          | Due to partial or complete lack of data the classification is not possible.   |
| <b>Respiratory sensitisation</b>                  | May cause allergy or asthma symptoms or breathing difficulties if inhaled.  |
| <b>Skin sensitisation</b>                         | Due to partial or complete lack of data the classification is not possible. However: A sensitizing effect on particularly sensitive individuals cannot be excluded. |
| <b>Germ cell mutagenicity</b>                     | Due to partial or complete lack of data the classification is not possible.   |
| <b>Carcinogenicity</b>                            | Due to partial or complete lack of data the classification is not possible.   |

|   |   |
|---|---|
| <b>Reproductive toxicity</b>                              | Due to partial or complete lack of data the classification is not possible.     |
| <b>Specific target organ toxicity - single exposure</b>   | Due to partial or complete lack of data the classification is not possible.     |
| <b>Specific target organ toxicity - repeated exposure</b> | Due to partial or complete lack of data the classification is not possible.     |
| <b>Aspiration hazard</b>                                  | Not an aspiration hazard.   |
| <b>Mixture versus substance information</b>               | The product is a substance.   |
| <b>Other information</b>                                  | The toxicological properties of this material have not been fully investigated. |

## SECTION 12: Ecological information

|  |   |
|--|---|
| <b>12.1. Toxicity</b>                                  | Due to partial or complete lack of data the classification for hazardous to the aquatic environment, is not possible.   |
| <b>12.2. Persistence and degradability</b>             | No data is available on the degradability of this product.  |
| <b>12.3. Bioaccumulative potential</b>                 | No data available.  |
| <b>Partition coefficient n-octanol/water (log Kow)</b> | Not available.  |
| <b>Bioconcentration factor (BCF)</b>                   | Not available.  |
| <b>12.4. Mobility in soil</b>                          | No data available.  |
| <b>12.5. Results of PBT and vPvB assessment</b>        | Not a PBT or vPvB substance or mixture.   |
| <b>12.6. Other adverse effects</b>                     | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|                                     |  |
|-------------------------------------|--|
| <b>Residual waste</b>               | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.                        |
| <b>Contaminated packaging</b>       | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |
| <b>EU waste code</b>                | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Disposal methods/information</b> | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.                   |
| <b>Special precautions</b>          | Dispose in accordance with all applicable regulations.   |

## SECTION 14: Transport information

### ADR

14.1. - 14.6.: Not regulated as dangerous goods.

### RID

14.1. - 14.6.: Not regulated as dangerous goods.

### ADN

14.1. - 14.6.: Not regulated as dangerous goods.

### IATA

14.1. - 14.6.: Not regulated as dangerous goods.

### IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code** Not applicable.

## SECTION 15: Regulatory information

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

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**  
Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**  
Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**  
Not listed.

#### **Authorisations**

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended**  
Not listed.

#### **Restrictions on use**

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**  
Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**  
Not listed.

#### **Other EU regulations**

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**  
Not listed.

#### **Other regulations**

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

#### **National regulations**

Follow national regulation for work with chemical agents.

#### **15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out.

### **SECTION 16: Other information**

#### **List of abbreviations**

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.  
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road.  
CAS: Chemical Abstracts Service.  
CEN: European Committee for Standardisation.  
ECHA: European Chemicals Agency  
IATA: International Air Transport Association.  
IMDG Code: International Maritime Dangerous Goods Code.  
PBT: Persistent, bioaccumulative, toxic.  
REACH: Registration, Evaluation and Authorization of Chemicals (REGULATION (EC) No 1907/2006 concerning Registration, Evaluation, Authorization and Restriction of Chemicals).  
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.  
vPvB: very Persistent, very Bioaccumulative.

#### **References**

Enzymes REACH Consortium  
Enzyme Technical Association

#### **Information on evaluation method leading to the classification of mixture**

The information given is based on data available for the material, the components of the material, and similar materials. The classification of this substance is based on analogy with other similar substances.

#### **Full text of any H-statements not written out in full under Sections 2 to 15**

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### **Training information**

Follow training instructions when handling this material.

#### **Disclaimer**

Biomatrix, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

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

### 1.1. Product identifier

|   |                              |
|---|------------------------------|
| <b>Trade name or designation of the mixture</b> | DNase I Buffer               |
| <b>Registration number</b>                      | -                            |
| <b>Synonyms</b>                                 | BMC15100-50-1 (product code) |
| <b>Document number</b>                          | 81302                        |
| <b>Issue date</b>                               | 18-July-2017                 |
| <b>Version number</b>                           | 02                           |
| <b>Revision date</b>                            | 18-July-2017                 |
| <b>Supersedes date</b>                          | 18-July-2017                 |

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

|                             |                               |
|-----------------------------|-------------------------------|
| <b>Identified uses</b>      | Purification of RNA in blood. |
| <b>Uses advised against</b> | None known.                   |

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

|                       |   |
|-----------------------|---|
| <b>Manufacturer</b>   | Biomatrica  |
| <b>Address</b>        | 5627 Oberlin Drive, Suite 120<br>San Diego, CA 92121<br>USA |
| <b>Telephone</b>      | 1-858-550-0308  |
| <b>Contact person</b> | Steven Schaefer   |
| <b>Email</b>          | info@biomatrica.com   |

### 1.4. Emergency telephone number

|                                       |                    |
|---------------------------------------|--------------------|
| <b>Information on operation hours</b> | 8:30am – 5:30pm PT |
|---------------------------------------|--------------------|

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

#### Classification according to Regulation (EC) No 1272/2008 as amended

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

**Hazard summary** Low hazard for usual industrial or commercial handling by trained personnel.

### 2.2. Label elements

#### Label according to Regulation (EC) No. 1272/2008 as amended

|                          |  |
|--------------------------|--|
| <b>Hazard pictograms</b> | None.  |
| <b>Signal word</b>       | None.  |
| <b>Hazard statements</b> | The mixture does not meet the criteria for classification. |

#### Precautionary statements

|                   |  |
|-------------------|--|
| <b>Prevention</b> | Observe good industrial hygiene practices.                                     |
| <b>Response</b>   | Wash hands after handling.   |
| <b>Storage</b>    | Store away from incompatible materials.  |
| <b>Disposal</b>   | Dispose of waste and residues in accordance with local authority requirements. |

**Supplemental label information** None.

### 2.3. Other hazards

Not a PBT or vPvB substance or mixture.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

## General information

| Chemical name          | %   | CAS-No. / EC No.       | REACH Registration No. | Index No. | Notes |
|------------------------|---|------------------------|------------------------|-----------|-------|
| Magnesium chloride     | <5  | 7786-30-3<br>232-094-6 | -                      | -         |       |
| <b>Classification:</b> | Acute Tox. 4;H302                                     |                        |                        |           |       |
| Tris-HCl               | <5  | 1185-53-1<br>214-684-5 | -                      | -         |       |
| <b>Classification:</b> | Skin Irrit. 2;H315, Eye Irrit. 2;H319, STOT SE 3;H335 |                        |                        |           |       |

**Composition comments** The full text for all H-statements is displayed in section 16.  
All concentrations are in percent by weight unless otherwise indicated.  
Components not listed are either non-hazardous or are below reportable limits.

## SECTION 4: First aid measures

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 4.1. Description of first aid measures

**Inhalation** Move to fresh air. Call a physician if symptoms develop or persist.  
**Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.  
**Eye contact** Rinse with water. Get medical attention if irritation develops and persists.  
**Ingestion** Rinse mouth. Get medical attention if symptoms occur.

**4.2. Most important symptoms and effects, both acute and delayed** Direct contact with eyes may cause temporary irritation. May cause mild skin irritation.

**4.3. Indication of any immediate medical attention and special treatment needed** Treat symptomatically.

## SECTION 5: Firefighting measures

**General fire hazards** No unusual fire or explosion hazards noted.

### 5.1. Extinguishing media

**Suitable extinguishing media** Use extinguishing agent suitable for type of surrounding fire.  
**Unsuitable extinguishing media** None known.

**5.2. Special hazards arising from the substance or mixture** During fire, gases hazardous to health may be formed. Combustion products may include: nitrogen oxides, hydrogen chloride, metal oxides.

### 5.3. Advice for firefighters

**Special protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.  
**Special fire fighting procedures** Move containers from fire area if you can do so without risk.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

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

**For non-emergency personnel** Keep unnecessary personnel away.  
**For emergency responders** Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

**6.2. Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up** Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

**6.4. Reference to other sections** For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

|  |   |
|--|---|
| <b>7.1. Precautions for safe handling</b>                                | Avoid contact with eyes, skin, and clothing. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. |
| <b>7.2. Conditions for safe storage, including any incompatibilities</b> | Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS).                         |
| <b>7.3. Specific end use(s)</b>  | Purification of RNA in blood.   |

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

|   |  |
|---|--|
| <b>Occupational exposure limits</b>               | No exposure limits noted for ingredient(s).                |
| <b>Biological limit values</b>                    | No biological exposure limits noted for the ingredient(s). |
| <b>Recommended monitoring procedures</b>          | Follow standard monitoring procedures.                     |
| <b>Derived no effect levels (DNELs)</b>           | Not available.   |
| <b>Predicted no effect concentrations (PNECs)</b> | Not available.   |

### 8.2. Exposure controls

|   |   |
|---|---|
| <b>Appropriate engineering controls</b> | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. |
|---|---|

### Individual protection measures, such as personal protective equipment

|  |   |
|--|---|
| <b>General information</b>             | Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.   |
| <b>Eye/face protection</b>             | Wear safety glasses; chemical goggles (if splashing is possible).   |
| <b>Skin protection</b>                 |   |
| - Hand protection                      | Wear appropriate chemical resistant gloves.   |
| - Other                                | Wear suitable protective clothing.  |
| <b>Respiratory protection</b>          | In case of insufficient ventilation, wear suitable respiratory equipment.   |
| <b>Thermal hazards</b>                 | Wear appropriate thermal protective clothing, when necessary.   |
| <b>Hygiene measures</b>                | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |
| <b>Environmental exposure controls</b> | Environmental manager must be informed of all major releases.   |

## SECTION 9: Physical and chemical properties

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

#### Appearance

|  |                 |
|--|-----------------|
| <b>Physical state</b>                          | Liquid.         |
| <b>Form</b>                                    | Liquid.         |
| <b>Colour</b>                                  | Colourless.     |
| <b>Odour</b>                                   | Odourless.      |
| <b>Odour threshold</b>                         | Not available.  |
| <b>pH</b>                                      | 7 - 8           |
| <b>Melting point/freezing point</b>            | Not available.  |
| <b>Initial boiling point and boiling range</b> | Not available.  |
| <b>Flash point</b>                             | Not available.  |
| <b>Evaporation rate</b>                        | Not available.  |
| <b>Flammability (solid, gas)</b>               | Not applicable. |

#### Upper/lower flammability or explosive limits

|                                       |                |
|---------------------------------------|----------------|
| <b>Flammability limit - lower (%)</b> | Not available. |
| <b>Flammability limit - upper (%)</b> | Not available. |



|   |   |
|---|---|
| Vapour pressure                         | Not available.                                |
| Vapour density                          | Not available.                                |
| Relative density                        | Not available.                                |
| Solubility(ies)                         | Not available.                                |
| Partition coefficient (n-octanol/water) | Not available.                                |
| Auto-ignition temperature               | Not available.                                |
| Decomposition temperature               | Not available.                                |
| Viscosity                               | Not available.                                |
| Explosive properties                    | Not explosive.                                |
| Oxidising properties                    | Not oxidising.                                |
| 9.2. Other information                  | No relevant additional information available. |

## SECTION 10: Stability and reactivity

|  |   |
|--|---|
| 10.1. Reactivity                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| 10.2. Chemical stability                 | Material is stable under normal conditions.   |
| 10.3. Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use.                                   |
| 10.4. Conditions to avoid                | Contact with incompatible materials.  |
| 10.5. Incompatible materials             | Strong oxidising agents.  |
| 10.6. Hazardous decomposition products   | No hazardous decomposition products are known.  |

## SECTION 11: Toxicological information

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Spray mists may cause respiratory tract irritation.      |
| <b>Skin contact</b> | May cause mild skin irritation.                          |
| <b>Eye contact</b>  | Direct contact with eyes may cause temporary irritation. |
| <b>Ingestion</b>    | May cause discomfort if swallowed.                       |

**Symptoms** Direct contact with eyes may cause temporary irritation. May cause mild skin irritation.

### 11.1. Information on toxicological effects

**Acute toxicity** Not expected to be acutely toxic.

| Components  | Species   | Test results           |
|---|---|------------------------|
| Magnesium chloride (CAS 7786-30-3)                        |   |                        |
| <b>Acute</b>  |   |                        |
| <b>Dermal</b>   |   |                        |
| LD50  | Rat   | > 2000 mg/kg, 24 Hours |
| <b>Oral</b>   |   |                        |
| LD50  | Rat   | 300 - 2000 mg/kg       |
| <b>Skin corrosion/irritation</b>                          | Based on available data, the classification criteria are not met.           |                        |
| <b>Serious eye damage/eye irritation</b>                  | Based on available data, the classification criteria are not met.           |                        |
| <b>Respiratory sensitisation</b>                          | Due to partial or complete lack of data the classification is not possible. |                        |
| <b>Skin sensitisation</b>                                 | Due to partial or complete lack of data the classification is not possible. |                        |
| <b>Germ cell mutagenicity</b>                             | Due to partial or complete lack of data the classification is not possible. |                        |
| <b>Carcinogenicity</b>                                    | Due to partial or complete lack of data the classification is not possible. |                        |
| <b>Reproductive toxicity</b>                              | Due to partial or complete lack of data the classification is not possible. |                        |
| <b>Specific target organ toxicity - single exposure</b>   | Based on available data, the classification criteria are not met.           |                        |
| <b>Specific target organ toxicity - repeated exposure</b> | Due to partial or complete lack of data the classification is not possible. |                        |
| <b>Aspiration hazard</b>                                  | Due to partial or complete lack of data the classification is not possible. |                        |
| <b>Mixture versus substance information</b>               | No information available.   |                        |

Other information None known.

## SECTION 12: Ecological information

**12.1. Toxicity** Based on available data, the classification criteria are not met for hazardous to the aquatic environment.

**12.2. Persistence and degradability** The majority of components in this product are inorganic compounds that are not biodegradable. No data is available for the organic components.

**12.3. Bioaccumulative potential** No data available.

**Partition coefficient n-octanol/water (log K<sub>ow</sub>)** Not available.

**Bioconcentration factor (BCF)** Not available.

**12.4. Mobility in soil** This product is miscible in water.

**12.5. Results of PBT and vPvB assessment** Not a PBT or vPvB substance or mixture.

**12.6. Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**Residual waste** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**EU waste code** The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Disposal methods/information** Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

**Special precautions** Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

14.1. - 14.6.: Not regulated as dangerous goods.

### RID

14.1. - 14.6.: Not regulated as dangerous goods.

### ADN

14.1. - 14.6.: Not regulated as dangerous goods.

### IATA

14.1. - 14.6.: Not regulated as dangerous goods.

### IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code** Not established.

## SECTION 15: Regulatory information

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

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

#### **Authorisations**

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended**

Not listed.

#### **Restrictions on use**

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

#### **Other EU regulations**

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

Not listed.

#### **Other regulations**

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

#### **National regulations**

Follow national regulation for work with chemical agents.

#### **15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out.

### **SECTION 16: Other information**

#### **List of abbreviations**

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.  
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road.  
CAS: Chemical Abstracts Service.  
CEN: European Committee for Standardisation.  
ECHA: European Chemicals Agency  
IATA: International Air Transport Association.  
IMDG Code: International Maritime Dangerous Goods Code.  
PBT: Persistent, bioaccumulative, toxic.  
REACH: Registration, Evaluation and Authorization of Chemicals (REGULATION (EC) No 1907/2006 concerning Registration, Evaluation Authorization and Restriction of Chemicals).  
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.  
vPvB: very Persistent, very Bioaccumulative.

#### **References**

ECHA registered substances database

#### **Information on evaluation method leading to the classification of mixture**

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

#### **Full text of any H-statements not written out in full under Sections 2 to 15**

H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.

#### **Training information**

Follow training instructions when handling this material.

#### **Disclaimer**

Biomatrix, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

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

**1.1. Product identifier**

**Trade name or designation of the mixture** Wash Buffer 1  
**Registration number** -  
**Synonyms** RW1-001 (product code)  
**Document number** 81002  
**Issue date** 18-July-2017  
**Version number** 02  
**Revision date** 18-July-2017  
**Supersedes date** 18-July-2017

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

**Identified uses** Purification of RNA in blood.  
**Uses advised against** None known.

**1.3. Details of the supplier of the safety data sheet**

**Manufacturer** Biomātrica  
**Address** 5627 Oberlin Drive, Suite 120  
 San Diego, CA 92121  
 USA  
**Telephone** 1-858-550-0308  
**Contact person** Steven Schaefer  
**Email** info@biomatrica.com

**1.4. Emergency telephone number** 1-858-550-0308  
**Information on operation hours** 8:30am – 5:30pm PT

**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

**Classification according to Regulation (EC) No 1272/2008 as amended**

**Health hazards**

|                                   |            |                                       |
|-----------------------------------|------------|---------------------------------------|
| Acute toxicity, oral              | Category 4 | H302 - Harmful if swallowed.          |
| Skin corrosion/irritation         | Category 2 | H315 - Causes skin irritation.        |
| Serious eye damage/eye irritation | Category 2 | H319 - Causes serious eye irritation. |

**Hazard summary** Harmful if swallowed. Causes serious eye irritation. Causes skin irritation.

**2.2. Label elements**

**Label according to Regulation (EC) No. 1272/2008 as amended**

**Contains:** Lithium chloride

**Hazard pictograms**



**Signal word** Warning

**Hazard statements**

|      |                                |
|------|--------------------------------|
| H302 | Harmful if swallowed.          |
| H315 | Causes skin irritation.        |
| H319 | Causes serious eye irritation. |

## Precautionary statements

### Prevention

|      |   |
|------|---|
| P264 | Wash thoroughly after handling.                     |
| P270 | Do not eat, drink or smoke when using this product. |
| P280 | Wear protective gloves and eye/face protection.     |

### Response

|                    |  |
|--------------------|--|
| P301 + P312        | IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.  |
| P302 + P352        | IF ON SKIN: Wash with plenty of water.   |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P362 + P364        | Take off contaminated clothing and wash it before reuse.   |

**Storage** Not assigned.

**Disposal** Not assigned.

**Supplemental label information** None.

**2.3. Other hazards** Not a PBT or vPvB substance or mixture.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### General information

| Chemical name          | %  | CAS-No. / EC No.       | REACH Registration No. | Index No. | Notes |
|------------------------|--|------------------------|------------------------|-----------|-------|
| Lithium chloride       | 35-50  | 7447-41-8<br>231-212-3 | -                      | -         |       |
| <b>Classification:</b> | Acute Tox. 4;H302, Skin Irrit. 2;H315, Eye Irrit. 2;H319 |                        |                        |           |       |

**Composition comments** The full text for all H-statements is displayed in section 16.  
All concentrations are in percent by weight unless otherwise indicated.  
Components not listed are either non-hazardous or are below reportable limits.

## SECTION 4: First aid measures

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

### 4.1. Description of first aid measures

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Move to fresh air. Call a physician if symptoms develop or persist.   |
| <b>Skin contact</b> | Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.                                 |
| <b>Eye contact</b>  | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. |
| <b>Ingestion</b>    | Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.   |

**4.2. Most important symptoms and effects, both acute and delayed** Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

**4.3. Indication of any immediate medical attention and special treatment needed** Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: Firefighting measures

**General fire hazards** This product is an aqueous mixture which will not burn.

### 5.1. Extinguishing media

|                                       |  |
|---------------------------------------|--|
| <b>Suitable extinguishing media</b>   | Use extinguishing agent suitable for type of surrounding fire. |
| <b>Unsuitable extinguishing media</b> | None known.  |

**5.2. Special hazards arising from the substance or mixture** During fire, gases hazardous to health may be formed.

### 5.3. Advice for firefighters

|  |   |
|--|---|
| <b>Special protective equipment for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| <b>Special fire fighting procedures</b>              | Move containers from fire area if you can do so without risk.                                 |

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

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

|                                    |   |
|------------------------------------|---|
| <b>For non-emergency personnel</b> | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. |
| <b>For emergency responders</b>    | Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.   |

**6.2. Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up** Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

**6.4. Reference to other sections** For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling** Do not taste or swallow. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

**7.2. Conditions for safe storage, including any incompatibilities** Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

**7.3. Specific end use(s)** Purification of RNA in blood.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

|   |  |
|---|--|
| <b>Occupational exposure limits</b>               | No exposure limits noted for ingredient(s).                |
| <b>Biological limit values</b>                    | No biological exposure limits noted for the ingredient(s). |
| <b>Recommended monitoring procedures</b>          | Follow standard monitoring procedures.                     |
| <b>Derived no effect levels (DNELs)</b>           | Not available.   |
| <b>Predicted no effect concentrations (PNECs)</b> | Not available.   |

### 8.2. Exposure controls

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Eye wash fountain and emergency showers are recommended.

### Individual protection measures, such as personal protective equipment

|                               |  |
|-------------------------------|--|
| <b>General information</b>    | Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. |
| <b>Eye/face protection</b>    | Wear safety glasses; chemical goggles (if splashing is possible). Risk of splashes: Face shield is recommended.  |
| <b>Skin protection</b>        |  |
| - Hand protection             | Wear appropriate chemical resistant gloves.  |
| - Other                       | Wear appropriate chemical resistant clothing.  |
| <b>Respiratory protection</b> | In case of insufficient ventilation, wear suitable respiratory equipment.  |
| <b>Thermal hazards</b>        | Wear appropriate thermal protective clothing, when necessary.  |

**Hygiene measures** Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**Environmental exposure controls** Environmental manager must be informed of all major releases.

## SECTION 9: Physical and chemical properties

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

#### Appearance

**Physical state** Liquid.

**Form** Clear liquid.

**Colour** Colourless.

**Odour** Odourless.

**Odour threshold** Not available.

**pH** Not available.

**Melting point/freezing point** Not available.

**Initial boiling point and boiling range** Not available.

**Flash point** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not applicable.

#### Upper/lower flammability or explosive limits

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Vapour pressure** Not available.

**Vapour density** Not available.

**Relative density** Not available.

**Solubility(ies)** Not available.

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** Not available.

**Decomposition temperature** Not available.

**Viscosity** Not available.

**Explosive properties** Not explosive.

**Oxidising properties** Not oxidising.

**9.2. Other information** No relevant additional information available.

## SECTION 10: Stability and reactivity

**10.1. Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.

**10.2. Chemical stability** Material is stable under normal conditions.

**10.3. Possibility of hazardous reactions** No dangerous reaction known under conditions of normal use.

**10.4. Conditions to avoid** Contact with incompatible materials. Freezing temperatures.

**10.5. Incompatible materials** Strong oxidising agents.

**10.6. Hazardous decomposition products** No hazardous decomposition products are known.

## SECTION 11: Toxicological information

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

#### Information on likely routes of exposure

**Inhalation** Spray mist may irritate the respiratory system.

**Skin contact** Causes skin irritation.

**Eye contact** Causes serious eye irritation.

**Ingestion** Harmful if swallowed.

**Symptoms** Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

#### 11.1. Information on toxicological effects

**Acute toxicity** Harmful if swallowed.

| Components  | Species   | Test results |
|---|---|--------------|
| Lithium chloride (CAS 7447-41-8)                          |   |              |
| <b>Acute</b>  |   |              |
| <b>Inhalation</b>   |   |              |
| LC50  | Rat   | > 5.57 mg/l  |
| <b>Oral</b>   |   |              |
| LD50  | Rat   | 757 mg/kg    |
| <b>Skin corrosion/irritation</b>                          | Causes skin irritation.   |              |
| <b>Serious eye damage/eye irritation</b>                  | Causes serious eye irritation.  |              |
| <b>Respiratory sensitisation</b>                          | Due to partial or complete lack of data the classification is not possible. |              |
| <b>Skin sensitisation</b>                                 | Due to partial or complete lack of data the classification is not possible. |              |
| <b>Germ cell mutagenicity</b>                             | Due to partial or complete lack of data the classification is not possible. |              |
| <b>Carcinogenicity</b>                                    | Due to partial or complete lack of data the classification is not possible. |              |
| <b>Reproductive toxicity</b>                              | Due to partial or complete lack of data the classification is not possible. |              |
| <b>Specific target organ toxicity - single exposure</b>   | Due to partial or complete lack of data the classification is not possible. |              |
| <b>Specific target organ toxicity - repeated exposure</b> | Due to partial or complete lack of data the classification is not possible. |              |
| <b>Aspiration hazard</b>                                  | Due to partial or complete lack of data the classification is not possible. |              |
| <b>Mixture versus substance information</b>               | No information available.   |              |
| <b>Other information</b>                                  | None known.   |              |

## SECTION 12: Ecological information

|  |   |
|--|---|
| <b>12.1. Toxicity</b>                                  | Based on available data, the classification criteria are not met for hazardous to the aquatic environment.  |
| <b>12.2. Persistence and degradability</b>             | No data is available on the degradability of this product.  |
| <b>12.3. Bioaccumulative potential</b>                 | No data available.  |
| <b>Partition coefficient n-octanol/water (log Kow)</b> | Not available.  |
| <b>Bioconcentration factor (BCF)</b>                   | Not available.  |
| <b>12.4. Mobility in soil</b>                          | Expected to be mobile in soil.  |
| <b>12.5. Results of PBT and vPvB assessment</b>        | Not a PBT or vPvB substance or mixture.   |
| <b>12.6. Other adverse effects</b>                     | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

## SECTION 13: Disposal considerations

|                                      |  |
|--------------------------------------|--|
| <b>13.1. Waste treatment methods</b> |  |
| <b>Residual waste</b>                | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.                        |
| <b>Contaminated packaging</b>        | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |
| <b>EU waste code</b>                 | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Disposal methods/information</b>  | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.                   |
| <b>Special precautions</b>           | Dispose in accordance with all applicable regulations.   |

## SECTION 14: Transport information

### ADR

14.1. - 14.6.: Not regulated as dangerous goods.

### RID

14.1. - 14.6.: Not regulated as dangerous goods.



## ADN

14.1. - 14.6.: Not regulated as dangerous goods.

## IATA

14.1. - 14.6.: Not regulated as dangerous goods.

## IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code** Not established.

## SECTION 15: Regulatory information

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

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Lithium chloride (CAS 7447-41-8)

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

#### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended**

Not listed.

#### Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

#### Other EU regulations

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

Not listed.

#### Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

#### National regulations

Follow national regulation for work with chemical agents.

### 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

### List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.  
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road.  
CAS: Chemical Abstracts Service.  
CEN: European Committee for Standardisation.  
ECHA: European Chemicals Agency  
IATA: International Air Transport Association.  
IMDG Code: International Maritime Dangerous Goods Code.  
PBT: Persistent, bioaccumulative, toxic.

REACH: Registration, Evaluation and Authorization of Chemicals (REGULATION (EC) No 1907/2006 concerning Registration, Evaluation Authorization and Restriction of Chemicals).  
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.  
vPvB: very Persistent, very Bioaccumulative.

**References**

ECHA registered substances database

**Information on evaluation method leading to the classification of mixture**

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

**Full text of any H-statements not written out in full under Sections 2 to 15**

H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.

**Training information**

Follow training instructions when handling this material.

**Disclaimer**

Biomatrica, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

|  |                        |
|--|------------------------|
| Trade name or designation of the mixture | Wash Buffer 2          |
| Registration number                      | -                      |
| Synonyms                                 | RW2-001 (product code) |
| Document number                          | 81102                  |
| Issue date                               | 18-July-2017           |
| Version number                           | 02                     |
| Revision date                            | 18-July-2017           |
| Supersedes date                          | 18-July-2017           |

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

|                      |                               |
|----------------------|-------------------------------|
| Identified uses      | Purification of RNA in blood. |
| Uses advised against | None known.                   |

**1.3. Details of the supplier of the safety data sheet**

|                |   |
|----------------|---|
| Manufacturer   | Biomātrica  |
| Address        | 5627 Oberlin Drive, Suite 120<br>San Diego, CA 92121<br>USA |
| Telephone      | 1-858-550-0308  |
| Contact person | Steven Schaefer   |
| Email          | info@biomatrica.com   |

|                                 |                    |
|---------------------------------|--------------------|
| 1.4. Emergency telephone number | 1-858-550-0308     |
| Information on operation hours  | 8:30am – 5:30pm PT |

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture**

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

**Classification according to Regulation (EC) No 1272/2008 as amended**

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

**Hazard summary** Low hazard for usual industrial or commercial handling by trained personnel.

**2.2. Label elements****Label according to Regulation (EC) No. 1272/2008 as amended**

|                   |  |
|-------------------|--|
| Hazard pictograms | None.  |
| Signal word       | None.  |
| Hazard statements | The mixture does not meet the criteria for classification. |

**Precautionary statements**

|            |  |
|------------|--|
| Prevention | Observe good industrial hygiene practices.                                     |
| Response   | Wash hands after handling.   |
| Storage    | Store away from incompatible materials.  |
| Disposal   | Dispose of waste and residues in accordance with local authority requirements. |

**Supplemental label information** None.

**2.3. Other hazards** Not a PBT or vPvB substance or mixture.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures**

## General information

| Chemical name          | %  | CAS-No. / EC No. | REACH Registration No. | Index No. | Notes |
|------------------------|--|------------------|------------------------|-----------|-------|
| TS-710727              | 0.1-10   | -                | -                      | -         | #     |
| <b>Classification:</b> | Skin Corr. 1B;H314, Eye Dam. 1;H318, Acute Tox. 3;H331, STOT SE 3;H335 |                  |                        |           | B     |

### List of abbreviations and symbols that may be used above

#: This substance has been assigned Union workplace exposure limit(s).

Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: "nitric acid ...%". In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.

**Composition comments** The full text for all H-statements is displayed in section 16.  
All concentrations are in percent by weight unless otherwise indicated.  
Components not listed are either non-hazardous or are below reportable limits.  
Chemical ingredient identity and/or concentration information withheld for some or all components present is confidential business information.

## SECTION 4: First aid measures

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 4.1. Description of first aid measures

**Inhalation** Move to fresh air. Call a physician if symptoms develop or persist.  
**Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.  
**Eye contact** Rinse with water. Get medical attention if irritation develops and persists.  
**Ingestion** Rinse mouth. Get medical attention if symptoms occur.

**4.2. Most important symptoms and effects, both acute and delayed** Direct contact with eyes may cause temporary irritation. May cause mild skin irritation.

**4.3. Indication of any immediate medical attention and special treatment needed** Treat symptomatically.

## SECTION 5: Firefighting measures

**General fire hazards** No unusual fire or explosion hazards noted.

### 5.1. Extinguishing media

**Suitable extinguishing media** Use extinguishing agent suitable for type of surrounding fire.  
**Unsuitable extinguishing media** None known.

**5.2. Special hazards arising from the substance or mixture** During fire, gases hazardous to health may be formed. Combustion products may include: nitrogen oxides, hydrogen chloride.

### 5.3. Advice for firefighters

**Special protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.  
**Special fire fighting procedures** Move containers from fire area if you can do so without risk.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

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

**For non-emergency personnel** Keep unnecessary personnel away.  
**For emergency responders** Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

**6.2. Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up** Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

#### 6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Avoid contact with eyes, skin, and clothing. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

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

Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

#### 7.3. Specific end use(s)

Purification of RNA in blood.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Occupational exposure limits

##### UK. EH40 Workplace Exposure Limits (WELs)

| Components | Type | Value               | Form                   |
|------------|------|---------------------|------------------------|
| TS-710727  | STEL | 8 mg/m <sup>3</sup> | Gas and aerosol mists. |
|            |      | 5 ppm               | Gas and aerosol mists. |
|            | TWA  | 2 mg/m <sup>3</sup> | Gas and aerosol mists. |
|            |      | 1 ppm               | Gas and aerosol mists. |

##### EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

| Components | Type | Value                |
|------------|------|----------------------|
| TS-710727  | STEL | 15 mg/m <sup>3</sup> |
|            |      | 10 ppm               |
|            | TWA  | 8 mg/m <sup>3</sup>  |
|            |      | 5 ppm                |

#### Biological limit values

No biological exposure limits noted for the ingredient(s).

#### Recommended monitoring procedures

Follow standard monitoring procedures.

#### Derived no effect levels (DNELs)

Not available.

#### Predicted no effect concentrations (PNECs)

Not available.

#### 8.2. Exposure controls

##### Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

##### Individual protection measures, such as personal protective equipment

###### General information

Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

###### Eye/face protection

Wear safety glasses; chemical goggles (if splashing is possible).

###### Skin protection

###### - Hand protection

Wear appropriate chemical resistant gloves.

###### - Other

Wear suitable protective clothing.

###### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

###### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

#### Hygiene measures

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

#### Environmental exposure controls

Environmental manager must be informed of all major releases.

### SECTION 9: Physical and chemical properties

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

##### Appearance

###### Physical state

Liquid.

###### Form

Liquid.

###### Colour

Not available.

##### Odour

Not available.

|   |   |
|---|---|
| <b>Odour threshold</b>                              | Not available.                                |
| <b>pH</b>   | 7.3 - 7.7                                     |
| <b>Melting point/freezing point</b>                 | Not available.                                |
| <b>Initial boiling point and boiling range</b>      | Not available.                                |
| <b>Flash point</b>                                  | Not available.                                |
| <b>Evaporation rate</b>                             | Not available.                                |
| <b>Flammability (solid, gas)</b>                    | Not applicable.                               |
| <b>Upper/lower flammability or explosive limits</b> |   |
| <b>Flammability limit - lower (%)</b>               | Not available.                                |
| <b>Flammability limit - upper (%)</b>               | Not available.                                |
| <b>Vapour pressure</b>                              | Not available.                                |
| <b>Vapour density</b>                               | Not available.                                |
| <b>Relative density</b>                             | Not available.                                |
| <b>Solubility(ies)</b>                              | Not available.                                |
| <b>Partition coefficient (n-octanol/water)</b>      | Not available.                                |
| <b>Auto-ignition temperature</b>                    | Not available.                                |
| <b>Decomposition temperature</b>                    | Not available.                                |
| <b>Viscosity</b>                                    | Not available.                                |
| <b>Explosive properties</b>                         | Not explosive.                                |
| <b>Oxidising properties</b>                         | Not oxidising.                                |
| <b>9.2. Other information</b>                       | No relevant additional information available. |

## SECTION 10: Stability and reactivity

|   |   |
|---|---|
| <b>10.1. Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>10.2. Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>10.3. Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.                                   |
| <b>10.4. Conditions to avoid</b>                | Contact with incompatible materials.  |
| <b>10.5. Incompatible materials</b>             | Strong oxidising agents.  |
| <b>10.6. Hazardous decomposition products</b>   | No hazardous decomposition products are known.  |

## SECTION 11: Toxicological information

|   |  |
|---|--|
| <b>General information</b>                        | Occupational exposure to the substance or mixture may cause adverse effects.             |
| <b>Information on likely routes of exposure</b>   |  |
| <b>Inhalation</b>                                 | Spray mists may cause respiratory tract irritation.                                      |
| <b>Skin contact</b>                               | May cause mild skin irritation.  |
| <b>Eye contact</b>                                | Direct contact with eyes may cause temporary irritation.                                 |
| <b>Ingestion</b>                                  | May cause discomfort if swallowed.   |
| <b>Symptoms</b>                                   | Direct contact with eyes may cause temporary irritation. May cause mild skin irritation. |
| <b>11.1. Information on toxicological effects</b> |  |
| <b>Acute toxicity</b>                             | Not expected to be acutely toxic.  |

| <b>Components</b>                        | <b>Species</b>  | <b>Test results</b> |
|--|---|---------------------|
| TS-710727 (CAS -)                        |   |                     |
| <b>Acute</b>                             |   |                     |
| <b>Inhalation</b>                        |   |                     |
| LC50                                     | Rat   | 3124 mg/l, 1 Hours  |
| <b>Oral</b>                              |   |                     |
| LD50                                     | Rabbit  | 900 mg/kg           |
| <b>Skin corrosion/irritation</b>         | Based on available data, the classification criteria are not met. |                     |
| <b>Serious eye damage/eye irritation</b> | Based on available data, the classification criteria are not met. |                     |

Wash Buffer 2

|                                  |   |
|----------------------------------|---|
| <b>Respiratory sensitisation</b> | Due to partial or complete lack of data the classification is not possible. |
| <b>Skin sensitisation</b>        | Due to partial or complete lack of data the classification is not possible. |
| <b>Germ cell mutagenicity</b>    | Due to partial or complete lack of data the classification is not possible. |
| <b>Carcinogenicity</b>           | Due to partial or complete lack of data the classification is not possible. |

#### IARC Monographs. Overall Evaluation of Carcinogenicity

TS-710727 (CAS -) 3 Not classifiable as to carcinogenicity to humans.

|   |   |
|---|---|
| <b>Reproductive toxicity</b>                              | Due to partial or complete lack of data the classification is not possible. |
| <b>Specific target organ toxicity - single exposure</b>   | Based on available data, the classification criteria are not met.           |
| <b>Specific target organ toxicity - repeated exposure</b> | Due to partial or complete lack of data the classification is not possible. |
| <b>Aspiration hazard</b>                                  | Due to partial or complete lack of data the classification is not possible. |
| <b>Mixture versus substance information</b>               | No information available.   |
| <b>Other information</b>                                  | None known.   |

## SECTION 12: Ecological information

**12.1. Toxicity** Based on available data, the classification criteria are not met for hazardous to the aquatic environment.

| Components   | Species   | Test results       |
|--|---|--------------------|
| TS-710727 (CAS -)                                      |   |                    |
| <b>Aquatic</b>   |   |                    |
| Fish   | LC50 Western mosquitofish ( <i>Gambusia affinis</i> )   | 282 mg/l, 96 hours |
| <b>12.2. Persistence and degradability</b>             | The majority of components in this product are inorganic compounds that are not biodegradable. No data is available for the organic components.   |                    |
| <b>12.3. Bioaccumulative potential</b>                 | No data available.  |                    |
| <b>Partition coefficient n-octanol/water (log Kow)</b> | Not available.  |                    |
| <b>Bioconcentration factor (BCF)</b>                   | Not available.  |                    |
| <b>12.4. Mobility in soil</b>                          | This product is miscible in water.  |                    |
| <b>12.5. Results of PBT and vPvB assessment</b>        | Not a PBT or vPvB substance or mixture.   |                    |
| <b>12.6. Other adverse effects</b>                     | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |                    |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|                                     |  |
|-------------------------------------|--|
| <b>Residual waste</b>               | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.                        |
| <b>Contaminated packaging</b>       | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |
| <b>EU waste code</b>                | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Disposal methods/information</b> | Collect and reclaim or dispose in sealed containers at licensed waste disposal site.   |
| <b>Special precautions</b>          | Dispose in accordance with all applicable regulations.   |

## SECTION 14: Transport information

### ADR

14.1. - 14.6.: Not regulated as dangerous goods.

### RID

14.1. - 14.6.: Not regulated as dangerous goods.

### ADN

14.1. - 14.6.: Not regulated as dangerous goods.

### IATA

14.1. - 14.6.: Not regulated as dangerous goods.

### IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code Not established.

## SECTION 15: Regulatory information

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

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

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**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

#### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended**

Not listed.

#### Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

#### Other EU regulations

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

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#### Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

#### National regulations

Follow national regulation for work with chemical agents.

### 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

### List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road.

CAS: Chemical Abstracts Service.

CEN: European Committee for Standardisation.

ECHA: European Chemicals Agency

IATA: International Air Transport Association.

IMDG Code: International Maritime Dangerous Goods Code.

PBT: Persistent, bioaccumulative, toxic.

REACH: Registration, Evaluation and Authorization of Chemicals (REGULATION (EC) No 1907/2006 concerning Registration, Evaluation, Authorization and Restriction of Chemicals).

RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.

vPvB: very Persistent, very Bioaccumulative.

### References

ECHA registered substances database



**Information on evaluation method leading to the classification of mixture**

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

**Full text of any H-statements not written out in full under Sections 2 to 15**

H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.  
H331 Toxic if inhaled.  
H335 May cause respiratory irritation.

**Training information**

Follow training instructions when handling this material.

**Disclaimer**

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