Material Safety Data Sheet
Version 1.0 | Creation Date: 01/02/2017 | Updated: 01/02/2017

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name: BGS™, Recombinant β-Glucuronidase/Aryl-sulfatase Mix
Product Number: BGS-5ML
Brand: Kura Biotec
CAS-No.: 9001-45-0/9016-17-5

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

Identified uses: Laboratory chemicals, Manufacture of substances

1.4 Details of the supplier of the safety data sheet

Company: La Piedra Biotecnologías Spa
Gnechen
Puerto Varas 5551114
Chile
Telephone: +569 8233 6932
Emergency Phone: +569 8233 6932

1.5 Imported by:

PM Separations Pty Ltd
Unit 3, 32 Neumann Road, Capalaba QLD 4178
Ph: 07 3390 1096
For any chemical emergency please contact;
Poisons Information Centre 13 11 26

1.6 Emergency telephone number

Emergency Phone #: +569 8233 6932

2. HAZARDS IDENTIFICATION

2.1 GHS Classification
Respiratory sensitisisation (Category 1)
Skin sensitisation (Category 1)

2.2 GHS Label elements, including precautionary statements
Pictogram

Signal word: Danger
Hazard statement(s)

H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statement(s)

Prevention
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves.
P285 In case of inadequate ventilation wear respiratory protection.

Response
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P321 Specific treatment (see supplemental first aid instructions on this label).
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.
P363 Wash contaminated clothing before reuse.

Disposal
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards – none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

Synonyms: β-D-Glucuronide glucuronosohydrolase/Aryl-sulfate sulfohydrolase

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
<td></td>
<td>50 %</td>
</tr>
<tr>
<td>CAS-No. 56-81-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC-No. 200-289-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucuronidase, β-</td>
<td>Resp. Sens. 1;</td>
<td></td>
</tr>
<tr>
<td>CAS-No. 9001-45-0</td>
<td>Skin Sens. 1;</td>
<td></td>
</tr>
<tr>
<td>EC-No. 232-606-8</td>
<td>H317, H334</td>
<td></td>
</tr>
<tr>
<td>Sulfatase, Aryl-</td>
<td>Resp. Sens. 1;</td>
<td></td>
</tr>
<tr>
<td>CAS-No. 9016-17-5</td>
<td>Skin Sens. 1;</td>
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</tr>
<tr>
<td>EC-No. 232-772-1</td>
<td>H317, H334</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled  
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact  
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact  
Flush eyes with water as a precaution.

If swallowed  
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed  
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed  
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media  
Suitable extinguishing media  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture  
no data available

5.3 Advice for firefighters  
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information  
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures  
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions  
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up  
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections  
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling  
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: -20 °C.

7.3 Specific end use(s)
A part from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
<td>56-81-5</td>
<td>TWA 10 mg/m³</td>
<td>Australia. Workplace Exposure Standards for Airborne Contaminants.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks
See chapter 14
This value is for inhalable dust containing no asbestos and < 1% crystalline silica
ACGIH is the documentation source

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection
Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties
a) Appearance Form: Aqueous solution
b) Odour no data available
c) Odour Threshold no data available
d) pH no data available
e) Melting point/freezing point no data available
f) Initial boiling point and boiling range no data available
g) Flash point no data available
h) Evaporation rate no data available
i) Flammability (solid, gas) no data available
j) Upper/lower flammability or explosive limits no data available
k) Vapour pressure no data available
l) Vapour density no data available
m) Relative density 1.000 g/cm³
n) Water solubility no data available
o) Partition coefficient: noctanol/ water no data available
p) Auto-ignition temperature no data available
q) Decomposition temperature no data available
r) Viscosity no data available
s) Explosive properties no data available
t) Oxidizing properties no data available

9.2 Other safety information no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity no data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions no data available

10.4 Conditions to avoid no data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity no data available
Skin corrosion/irritation no data available
Serious eye damage/eye irritation no data available
Respiratory or skin sensitisation no data available
Germ cell mutagenicity no data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**
no data available

**Specific target organ toxicity - single exposure**
no data available

**Specific target organ toxicity - repeated exposure**
no data available

**Aspiration hazard**
no data available

### Additional Information

RTECS: LZ8990000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Kidney - Irregularities - Based on Human Evidence (Glycerol)

#### 12. ECOLOGICAL INFORMATION

12.1 Toxicity
no data available

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
no data available

#### 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

**Product**
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**
Dispose of as unused product.

#### 14. TRANSPORT INFORMATION

14.1 UN number
ADR/RID: -
IMDG: -
IATA-DGR: -

14.2 UN proper shipping name
ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA-DGR: Not dangerous goods

14.3 Transport hazard class(es)
ADR/RID: -
IMDG: -
IATA-DGR: -

14.4 Packaging group
ADR/RID: - IMDG: - IATA-DGR: -

14.5 Environmental hazards
ADR/RID: no
IMDG Marine pollutant: no
IATA-DGR: no

14.6 Special precautions for user
no data available
15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Standard for the Uniform Scheduling of Medicines and Poisons
no data available
Carcinogen classification under WHS Regulation 2011, Schedule 10
Not listed

Notification status

AICS : Not in compliance with the inventory - Glucuronidase, β-, Sulfatase, Aryl-

DSL : This product contains the following components that are not on the Canadian DSL nor NDSL. - Glucuronidase, β-, Sulfatase, Aryl-

ENCS : Not in compliance with the inventory - Glucuronidase, β-, Sulfatase, Aryl-

IECSC : Not in compliance with the inventory - Glucuronidase, β-, Sulfatase, Aryl-

ISHL : Not in compliance with the inventory - Glucuronidase, β-, Sulfatase, Aryl-

KECI : On the inventory, or in compliance with the inventory

NZIoC : Not in compliance with the inventory - Glucuronidase, β-, Sulfatase, Aryl-

PICCS : Not in compliance with the inventory - Glucuronidase, β-, Sulfatase, Aryl-

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Resp. Sens. Respiratory sensitisation
Skin Sens. Skin sensitisation

Further information

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