SECTION 1: Identification of the substance or mixture and of the supplier

GHS Product Identifier: Rat Anti-Human G-CSF-UNLB
Other means of identification: BVD13-3A5
Product type: Liquid
Product code: 10127-01
Chemical formula: Not applicable
CAS No: Not applicable
SDS No: 2231381

Relevant Identified uses of the substance or mixture and uses advised against: Not applicable

Supplier’s details: Southern Biotechnology Associates, Inc.
160 Oxmoor Boulevard
Birmingham, Alabama 35209 USA
Tel: (205) 945-1774
Fax: (205) 945-8768
Website: www.southernbiotech.com

Distributor and Emergency Phone No.: Refer to website for distributor and emergency phone numbers.
Tel: (205) 945-1774

SECTION 2: Hazards identification

Classification of the substance or mixture
GHS-US classification
Not a hazardous substance or mixture

Label elements
GHS-US labeling
Hazard pictograms (GHS-US)
Not a hazardous substance or mixture

Other hazards: none

Unknown acute toxicity (GHS US)
No data available

Full text of H-phrases: see section 16

SECTION 3: Composition/information on ingredients

Substance/Mixture: Mixture
Other Means of Identification: Not available

CAS Number/other identifiers
CAS Number: Not applicable

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>Product Identifier</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric Acid</td>
<td>(CAS No.) 10043-35-3 / [EINECS(EC#)] 201-191-5</td>
<td>0.6%</td>
</tr>
<tr>
<td>Sodium Tetraborate</td>
<td>(CAS No.) 1303-96-4 / [EINECS(EC#)] 215-540-4</td>
<td>0.95%</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>(CAS No.) 7647-14-5 / [EINECS(EC#)] 231-598-3</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.
Occupational exposure limits, if available, are listed in Section 8
SECTION 4: First aid measures

Description of first aid measures

First-aid measures general

Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

First-aid measures after eye contact

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Consult a physician.

First-aid measures after inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Consult a physician.

First-aid measures after skin contact

Flush contaminated skin with plenty of water and soap. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

First-aid measures after ingestion

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention. If necessary, call a poison center.

Most important symptoms and effects, acute and delayed

Potential acute health effects

Eye contact  
 No known significant effects or critical hazards

Inhalation  
 No known significant effects or critical hazards

Skin contact  
 No known significant effects or critical hazards

Ingestion  
 Harmful if swallowed.

Over-exposure signs/symptoms

Eye contact  
 No specific data

Inhalation  
 No specific data

Skin contact  
 No specific data

Ingestion  
 No specific data

Indication of any immediate medical attention and special treatment needed, if necessary

Notes to physician  
 Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments  
 No specific treatment.

Protection of first-aiders  
 No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

SECTION 5: Firefighting measures

Extinguishing media

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

Unsuitable extinguishing media  
 None known

Special hazards arising from the substance or mixture  
 No special hazards determined

Hazardous thermal decomposition products  
 No specific data

Special protective actions for fire-fighters  
 Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
**Special protective equipment for fire-fighters**

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**SECTION 6: Accidental release measures**

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

**General measures:** This product contains a material of biological origin. Use universal precautions during clean up procedures. Avoid breathing (vapor, mist). Use only in a well-ventilated area. Handle in accordance with good industrial hygiene and safety practice. Use personal protective equipment, see section 8.

**For non-emergency personnel**

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders**

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions**

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

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

- **Small spill:** As a precautionary measure, treat spilled material with a 1:10 bleach/water solution. Stop leak if without risk. Move containers from spill area. Absorb with an inert dry material and place in an appropriate waste disposal container. Comply with applicable waste disposal regulations.
  - **Large spill:** As a precautionary measure, treat spilled material with a 1:10 bleach/water solution. Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

**Reference to other sections**

See Section 1 for emergency contact information, Section 13 for waste disposal, and Section 8 for exposure controls and personal protection.

**SECTION 7: Handling and storage**

**Precautions for safe handling**

**Precautions for safe handling:** This product should be handled as though capable of transmitting infectious diseases. Universal precautions should be followed when using this product. Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Hygiene measures:** Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities**

**Technical measures:** Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Recommended storage temperature: 2 - 8°C.

**SECTION 8: Exposure controls/personal protection**
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>Sodium Tetraborate</td>
<td>1303-96-4</td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>USA. NIOSH</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 mg/m3</td>
<td>MAC (NL)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 mg/m3</td>
<td>TLV (US)</td>
</tr>
</tbody>
</table>

Exposure controls

Appropriate engineering controls
Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

Environmental exposure controls
Do no let product enter drains.

Personal protective equipment
Protective goggles, gloves

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection
Impervious clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Eye protection
Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Conditions to avoid
No specific data

Incompatible materials
No specific data

Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Other information
When using, do not eat, drink, or smoke. May contain material of animal origin.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance
Physical state: Liquid
Color: Clear
Odor: Not available
Odor threshold: Not available
pH: ~8.2
Melting point: Not available
Boiling point: Not available
Flash Point: Not available
 Burning time: Not applicable
 Burning rate: Not applicable
Evaporation rate: Not available
Flammability (solid, gas): Not available
Lower and upper explosive (flammable) limits: Not available
Vapor pressure: Not available
Vapor density: Not available
Relative density: Not available
Solubility: Soluble in the following materials: cold water and hot water.
Partition coefficient n-octanol/water: Not available
Auto-ignition temperature: Not available
Decomposition temperature: Not available
SADT: Not available
Viscosity: Not available

Other information
No additional information available

SECTION 10: Stability and reactivity
Reactivity
No specific test data related to reactivity available for this product or its ingredients. This material is hygroscopic.
Chemical Stability
The product is stable under recommended storage conditions.
Possibility Of Hazardous Reactions
Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions To Avoid
No specific data
Incompatible Materials
Zirconium, strong acids, metallic salts
Hazardous Decomposition Products
No specific data

SECTION 11: Toxicological information
Information on toxicological effects
Acute toxicity
No data available
Conclusion/Summary:
To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigated.
Skin corrosion/irritation:
No data available
Serious eye damage/irritation:
No data available
Respiratory or skin sensitization:
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.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Boric acid (CAS# 10043-35-3) has been identified in 1272/2008/EC as a category 2 Reproductive toxin. This product contains Boric acid at below the hazard concentration limit (<5.5%). Sodium Tetraborate (CAS# 1303-96-4) has been identified in 1272/2008/EC as a category 2 Reproductive toxin. This product contains Sodium Tetraborate at below the hazard concentration limit (<8.5%).

Teratogenicity: 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

Information on the likely routes of exposure: Routes of entry anticipated: Oral, Dermal, and Inhalation.

Potential acute health effects

Eye contact: No known significant effects or critical hazards
Inhalation: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Ingestion: Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: No specific data
Inhalation: No specific data
Skin contact: No specific data
Ingestion: No specific data

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Potential immediate effects: Not available
Potential delayed effects: Not available

Long term exposure
Potential immediate effects: Not available
Potential delayed effects: Not available
Potential chronic health effects: Not available

General: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity
Acute toxicity estimates
Not available.
SECTION 12: Ecological information

Toxicity No data available
Persistence and degradability No data available
Bioaccumulative potential No data available
Mobility in soil No data available
Other adverse effects No data available

SECTION 13: Disposal considerations

Disposal methods
The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>Not regulated</td>
</tr>
<tr>
<td>UN proper</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No</td>
</tr>
<tr>
<td>Additional information</td>
<td>-</td>
</tr>
</tbody>
</table>

Special precautions for user: Transport within users premises always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 15: Regulatory information

U.S. Federal regulations
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) Not listed
Clean Air Act Section 602 Class I Substances Not listed
Clean Air Act Section 602 Class II Substances Not listed
DEA List I Chemicals (Precursor Chemicals) Not listed
DEA List II Chemicals (Essential Chemicals) Not listed

SARA 302/304
Composition/information on ingredients
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313

State regulations
New York
Sodium Tetraborate 1303-96-4
Pennsylvania
Sodium Tetraborate 1303-96-4
Minnesota
Sodium Tetraborate 1303-96-4
Rhode Island
Sodium Tetraborate 1303-96-4

Canada inventory All components are listed or exempted.

International regulations
International lists
Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): All components are listed or exempted.

Chemical Weapons Convention List Schedule I Not listed
Chemical Weapons Convention List Schedule II Chemicals Not listed
Chemical Weapons Convention List Schedule III Chemicals Not listed

SECTION 16: Other information

Indication of changes : 30-Apr-15
Other information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

NFPA health : 0 - No unusual hazard
NFPA fire hazard : 0 - Not combustible
NFPA reactivity : 0 - Not reactive when mixed with water

HMIS III Rating
Health : 0 - Minimal Hazard
Flammability : 0 - Minimal Hazard
Physical : 0 - Minimal Hazard

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SDS US (GHS HazCom) - US Only

Rev. 30-Apr-15