Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Product Identifiers

<table>
<thead>
<tr>
<th>Product Name</th>
<th>25(OH) Vitamin D ELISA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog No</td>
<td>MBS580159</td>
</tr>
</tbody>
</table>

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

Identified uses: For In Vitro Use Only
Restrictions: Not for human or animal consumption

1.3. Details of the company of the Safety Data Sheet

Company: MyBioSource, Inc.
P.O.Box 153308
San Diego, CA 92195-3308 USA
Tel: 1.858.633.0165
Fax: 1.858.633.0166
Email: sales@mybiosource.com

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

- This product is part of a test kit which contains several individual elements.
- This SDS describes the hazards associated with two specific components, as follows:
  - ProClin Solution: Not classified as hazardous.
  - Stop Solution: Eye irritation (Category 2A); Skin irritation (Category 2)

2.2. GHS Label elements, including precautionary statement

- ProClin Solution
  - Pictogram: Not applicable.
  - Signal Word: Not applicable.
  - Hazard Statement(s): Not applicable.
  - Precautionary statement(s): Not applicable.

- Stop Solution
  - Pictogram: To the right.
  - Signal Word: Warning.
  - Hazard Statement(s): H315 Causes skin irritation
  - Hazard Statement(s): H319 Causes serious eye irritation
  - Precautionary statement(s): P264 Wash exposed skin thoroughly after handling.
  - Precautionary statement(s): P280 Wear eye protection/face protection. Wear protective gloves.
  - Precautionary statement(s): P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
  - Precautionary statement(s): P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - Precautionary statement(s): P332 + P313 If skin irritation occurs: Get medical advice/attention.
  - Precautionary statement(s): P337 + P313 If eye irritation persists: Get medical advice/attention.
  - Precautionary statement(s): P362 + P364 Take off contaminated clothing and wash before reuse.

2.3. Hazards not otherwise classified

Not applicable

FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.
3. **COMPOSITION/INFORMATION ON INGREDIENTS**

3.1. Mixtures

<table>
<thead>
<tr>
<th>Product</th>
<th>Ingredient</th>
<th>Concentration</th>
<th>CAS #</th>
<th>EC-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProClin Solution</td>
<td>ProClin</td>
<td>0.05%</td>
<td>55965-84-9</td>
<td>613-167-00-5</td>
</tr>
<tr>
<td>Stop Solution</td>
<td>Sulfuric Acid</td>
<td>0.028%</td>
<td>7664-93-9</td>
<td>231-639-5</td>
</tr>
</tbody>
</table>

Note: Unless otherwise specified, the information in the remainder of this document is applicable to both product components.

4. **FIRST AID MEASURES**

4.1. Descriptions of first aid measures

**General Advice**
- Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
- **If inhaled**
  - If breathed in, move person into fresh air. If irritation or other health effects arise or continue after first aid treatment, seek medical attention.
- **In case of skin contact**
  - Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. If irritation or other health effects arise or continue after first aid treatment, seek medical attention. Wash contaminated clothing before reuse.
- **In case of eye contact**
  - Rinse thoroughly with water for at least 15 minutes and consult a physician. If irritation or other symptoms arise or persist after first aid treatment, seek medical attention.
- **If swallowed**
  - Do NOT induce vomiting. 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 labeling (section 2.2) and/or in section 11.

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

Treat symptomatically.

5. **FIREFIGHTING MEASURES**

5.1. Suitable extinguishing media

Fire-fighting media should be selected depending on the surrounding materials and equipment.

5.2. Specific hazards arising from product

The components of this product are non-combustible. Ambient fire may liberate hazardous gases (e.g., oxides of carbon and sulfur).

5.3. Specific protective equipment and precautions for fire-fighter

It is recommended that fire-fighters wear protective gear and self-contained breathing apparatus to limit their exposure. Rinse all equipment thoroughly before returning to service.

6. **ACCIDENTAL RELEASE MEASURES**

6.1. Personal precautions, protective equipment and emergency procedure

Use personal protective equipment (nitrile gloves, safety glasses with side shield, lab coat). Avoid breathing vapors, mist or spray. Ensure adequate ventilation. Clear the area immediately surrounding the spill.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and materials for containment and cleaning up

Soak up with absorbent material (e.g., polypads). Wipe-down the area with a damp sponge or polypad to remove all residue. Keep spill debris generated in suitable, closed containers for disposal according to local regulations.

6.4. References to other section

See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.
7. HANDLING AND STORAGE

7.1. Precautions for safe handling
This kit should be handled and used by a qualified, trained professional, maintaining general good laboratory practice. Do not smoke, drink, or apply cosmetics in chemical use areas. Handle calibrators and unknown samples as potentially infectious.

7.2. Conditions for safe storage
This kit should be stored as recommended on the product label. Refer to the storage section of the package insert for further information. Store away from any incompatible material (see Section 10).

7.3. Specific End Uses
Research and development.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limits
This product contains the following substances that have specific airborne occupational exposure limits:

**Sulfuric Acid**
- EU OEL: TWA = 0.05 mg/m³ 8 hour(s). Form: (mist); the mist is defined as the thoracic fraction.
- ACGIH TLV: TWA = 0.2 mg/m³ (thoracic traction)
- OSHA PEL: TWA = 1 mg/m³
- NIOSH REL: TWA = 1 mg/m³; IDLH = 15 mg/m³

National Airborne Occupational Exposure Limits (OEL) for European Union Members:

<table>
<thead>
<tr>
<th>Country</th>
<th>STEL/mg/m³</th>
<th>TWA/mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Estonia</td>
<td>0.1</td>
<td>(fume)</td>
</tr>
<tr>
<td>Italy</td>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td>Portugal</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>0.1</td>
<td>0.05</td>
</tr>
<tr>
<td>Latvia</td>
<td></td>
<td>0.05</td>
</tr>
<tr>
<td>Romania</td>
<td></td>
<td>0.05</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>3</td>
<td>0.05</td>
</tr>
<tr>
<td>Lithuania</td>
<td>3</td>
<td>0.05</td>
</tr>
<tr>
<td>Slovakia</td>
<td></td>
<td>0.05</td>
</tr>
<tr>
<td>Croatia</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Luxembourg</td>
<td></td>
<td>0.05</td>
</tr>
<tr>
<td>Slovenia</td>
<td></td>
<td>0.05 (inhalable fraction)</td>
</tr>
<tr>
<td>Republic of Cyprus</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Malta</td>
<td></td>
<td>0.05</td>
</tr>
<tr>
<td>Spain</td>
<td></td>
<td>0.05</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>0.15</td>
<td>0.05</td>
</tr>
<tr>
<td>Poland</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>0.15</td>
<td>0.05</td>
</tr>
</tbody>
</table>

8.2. Engineering controls
Use with adequate ventilation. Ensure that eyewash stations and safety showers are close to the workstation location.

8.3. Individual protection measures
Wear protective clothing and appropriate footwear as protection against splashing or contamination. Also wear approved safety goggles and protective gloves. After finishing the work or before going on break, wash hands thoroughly.
# 9. PHYSICAL AND CHEMICAL PROPERTIES

## 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>ProClin Solution</th>
<th>Stop Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>Colorless liquid</td>
<td>Colorless liquid</td>
</tr>
<tr>
<td>Odor: Not detectable</td>
<td>Odor: Not detectable</td>
</tr>
<tr>
<td>Odor threshold: Not applicable</td>
<td>Odor threshold: Not applicable</td>
</tr>
</tbody>
</table>

| **Chemical properties**                |                            |
| pH: 6-8                                | pH: 2.2                    |
| Boiling point: Approximately 100°C at 760mmHg | Boiling point: Approximately 100°C at 760mmHg |
| Melting point: Less than 0°C (32°F)    | Melting point: Less than 0°C (32°F) |
| Flash point: Not applicable            | Flash point: Not applicable  |
| Evaporation rate (water = 1):         | Evaporation rate (water = 1): |
| Approximately 1.0                     | Approximately 1.0           |
| Flammability (solid, gas):            | Flammability (solid, gas):   |
| Not applicable                        | Not applicable              |
| Upper/lower flammability or explosive limits: Not applicable | Upper/lower flammability or explosive limits: Not applicable |
| Vapor pressure: Not applicable        | Vapor pressure: Not applicable|
| Vapor density: Not applicable         | Vapor density: Not applicable|
| Relative density: Not applicable      | Relative density: Not applicable|
| Partition coefficient n-octanol/water: | Partition coefficient n-octanol/water: |
| Not applicable                        | Not applicable              |
| Auto-ignition temperature:            | Auto-ignition temperature:  |
| Not applicable                        | Not applicable              |
| Decomposition temperature:            | Decomposition temperature:  |
| Not applicable                        | Not applicable              |
| Viscosity, kinematic:                 | Viscosity, kinematic:       |
| Not applicable                        | Not applicable              |
| Explosive properties:                 | Explosive properties:       |
| Not applicable                        | Not applicable              |
| Oxidizing properties:                 | Oxidizing properties:       |
| Not applicable                        | Not applicable              |
| Solubility in water:                  | Solubility in water:        |
| Soluble                               | Soluble                     |
| % Volatile Organic Content:           | % Volatile Organic Content: |
| Not applicable                        | Not applicable              |

## 10. STABILITY AND REACTIVITY

### 10.1. Reactivity
No data available.

### 10.2. Chemical Stability
Stable under recommended storage conditions.

### 10.3. Conditions to avoid
Exposure to extreme temperatures and incompatible materials.

### 10.4. Materials to avoid
Use only clean glass and plastic suitable for laboratory use when handling the kit components. The components of this kit are Individual solutions that are not compatible with the following chemicals:

- **ProClin Solution**: Water-reactive compounds and strong oxidizers.
- **Stop Solution**: Strong oxidizing agents, metals and strong bases.

### 10.5. Hazardous decomposition products
Under the conditions of a fire, the components of this kit will thermally decompose and release the following products: Individual ingredients are not compatible with the following chemicals:

- **ProClin Solution**: Water vapor and oxides of carbon, sulfur, and chlorine.
- **Stop Solution**: Water vapor and oxides of sulfur.
11. **TOXICOLOGICAL INFORMATION**

11.1. **Information on likely routes of exposure**

Occupational exposures to the components of this product are most apt to occur via skin and eye contact. The components of product could be inhaled via splashes, sprays and mists. Ingestion of the components of this product are unlikely, except under unusual circumstances or procedures involving poor chemical hygiene (e.g., eating in product use areas).

11.2. **Symptoms related to physical, chemical and toxicological characteristics**

The following symptoms may arise after exposures occur:

**ProClin Solution**
- **Inhalation:** May cause respiratory tract irritation.
- **Ingestion:** May be harmful if swallowed
- **Skin:** May cause skin irritation
- **Eyes:** May cause eye irritation

**Stop Solution**
- **Inhalation:** May cause respiratory tract irritation.
- **Ingestion:** May be harmful if swallowed and cause serious irritation of the tissues of the digestive tract
- **Skin:** Causes skin irritation, which can result in redness, itching and pain.
- **Eyes:** Causes serious eye irritation, which can result in redness, tearing and pain.

11.3. **Delayed and immediate effects**

No other delayed or immediate effects, as defined by 29 CRF 1910 (OSHA Hazard Communication Standard), Appendix A (Health Hazard Criteria), are associated with the solutions comprising this product.

11.4. **Numerical measures of toxicity**

**Acute Toxicity Estimate:** The following values have been calculated for the components of this kit:

**ProClin Solution**
- ATE (oral) > 5000 mg/kg ATE
- (dermal) > 5000 mg/kg ATE
- (inhalation) > 30 mg/L

**Stop Solution**
- ATE (oral) > 5000 mg/kg ATE
- (dermal) > 5000 mg/kg ATE
- (inhalation) > 30 mg/L

**Component Toxicity Values:** The following data are available for the chemicals in the kit's solutions.

**ProClin Solution**
- **PROCLIN**
  - ATE (oral) = 100 mg/kg
  - ATE (dermal) = 3000 mg/kg

**Stop Solution**
- **SULFURIC ACID**
  - LD50 (oral, rat) = 2140 mg/kg
  - LD50 (inhalation, rat) = 510 mg/m³/0.5 hours
  - TCLo (inhalation, human) = 1 mg/m³/3 hours (thorax, lungs, respiration, other changes)
  - TCLo (inhalation, human) = 3 mg/m³/24 weeks (changes in teeth and supporting structures)
  - LDL0 (unreported, man) = 135 mg/kg

11.5. **Listing as a carcinogen**

No component of this product (based on its form and its intended nature of use), or present greater than 0.1% is identified as probable, possible or confirmed human carcinogen by the International Agency for Research on Carcinogens (IARC), the National Toxicology Program (NTP) or OSHA.
12. **ECOLOGICAL INFORMATION**

12.1. **Ecotoxicity**

This product is not classified as an Aquatic Toxicity hazard (per United Nations Globally Harmonized System of Classification and Labelling of Chemicals). The following aquatic toxicity data is available for the components of this product:

**ProClin Solution**
- ProClin
- Known to be very toxic to aquatic life

**Stop Solution**
- SULFURIC ACID
- Known to be very toxic to aquatic life

- LC50 - 96 hours: 16 - 28 mg/L - Lepomis macrochirus (Bluegill sunfish), static test
- EC50 - 48 hours: > 100 mg/L - Daphnia magna (Water flea), static test
- NOEC: 0.13 mg/L – Algae
- NOEC: 0.13 mg/L - 10 Months - Salvelinus fontinalis (brown trout) flow-through test

12.2. **Persistence and degradability**

Persistence is unlikely, based on the available data.

12.3. **Bioaccumulative potential**

Based on the available data, the components of this product are not anticipated to bioaccumulate.

12.4. **Mobility in soil**

Based on the available data, the components of this product are expected to have some mobility in soil.

12.5. **Other adverse effects**

This product does not contain components that are known to cause ozone depletion, cause endocrine disruption, or contribute to global warming.

13. **DISPOSAL CONSIDERATIONS**

Dispose of each component according to federal, state and local environment control regulations. Contaminated packaging should be handled with care, and also discarded according to appropriate regulations.

14. **TRANSPORT INFORMATION**

The components of this product are not regulated as hazardous material by the Department of Transportation, International Air Transportation Association, or International Maritime Organization.

14.1. **Basic description information**

**ProClin Solution**
- UN Number: Not applicable.
- Class: Not applicable.
- Packing Group: Not applicable.
- Proper Shipping Name: Not applicable.

**Stop Solution**
- UN Number: Not applicable.
- Class: Not applicable.
- Packing Group: Not applicable.
- Proper Shipping Name: Not applicable

14.2. **Environmental hazards**

Not applicable.

14.3. **Special precautions for users**

Not applicable.

14.4. **Special precautions for users**

Not applicable.
15. **REGULATORY INFORMATION**

15.1. European Regulations
   - **EU Regulation (EC) No. 1907/2006 (REACH)** – REACH Status: All components are exempted or listed.
   - German Water Hazard Classification: Low hazard to waters.
   - France: Tableaux de Maladies Professionnelles (Table of Occupational Illnesses): No listing.
   - The Netherlands: List of Carcinogens, Mutagens, and Reproductive Toxins: Sulfuric Acid mist is listed; this entry is not pertinent to the product, in either its form or usage.
   - Denmark: List of compounds and processes considered to be carcinogenic: No listing.

15.2. Chemical Safety Assessment
   No applicable

16. **OTHER INFORMATION**

16.1. Statement from company
   The above information is believed to be correct but does not purport to be an all-inclusive document. MyBioSource, Inc., shall not be liable or responsible in any way for use of either this information or the material supplied. Final determination of suitability and safe use of these materials is the sole responsibility of the user. Disposal of hazardous materials may be subject to federal, state or local laws or regulations.

16.2. Definitions
   - **ACGIH**: American Conference of Government Industrial Hygienists
   - **ATE**: Acute Toxicity Estimated, calculated based on available data
   - **CAS #**: Chemical Abstract Service Number, used by the American Chemical Society to uniquely identify a chemical.
   - **EC50**: The Effect Concentration of a substance which will be fatal to 50% of exposed test aquatic species
   - **IARC**: International Agency for Research on Cancer
   - **LD50 or LC50**: The Lethal Dose or Lethal Concentration of a substance which will be fatal to 50% of exposed test animals by the designated route of administration.
   - **mg/m3**: Milligrams per cubic meter
   - **NOEC**: No observable effect concentration
   - **NIOSH**: National Institute of Occupational Safety and Health
   - **NTP**: National Toxicology Program
   - **OEL**: Occupational Exposure Limit
   - **OSHA**: U.S. Occupational Safety and Health Administration
   - **PEL**: Permissible Exposure Limit
   - **REL**: Recommended Exposure Limit
   - **ppm**: Parts per Million
   - **TCLo**: The lowest concentration of exposure to create an adverse health effect