# Bioland Scientific LLC

## Material Safety Data Sheet

Version 1.0
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### 1. PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| Product name | 10x TBS Buffer |
| Catalog Number | TBS03 |
| Brand | Bioland Chemicals |
| Company | Bioland Scientific LLC<br>14925 Paramount Blvd., Suite C<br>Paramount, CA 90723<br>USA |
| Telephone | 1-562-602-8882 |
| Fax | 1-562-733-6008 |
| Emergency Phone # | 1-562-377-2668 |

### 2. HAZARDS IDENTIFICATION

**Appearance and Odor:** Clear, colorless solution.

**EMERGENCY OVERVIEW - IMMEDIATE HAZARD**
Tris-Base: CAUSES IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. HARMFUL IF SWALLOWED OR INHALED.
Potassium Chloride: CAUTION! MAY BE HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.
**EMERGENCY OVERVIEW - CHRONIC HAZARD WARNING**
Tris-Base: CHRONIC DERMATITIS MAY FOLLOW SKIN CONTACT.
Potassium Chloride: IRRITATING TO EYES. HYGROSCOPIC.

#### Potential Health Effects

| | Tris-Base | Potassium Chloride |
|---|---|---|
| **Inhalation** | Causes irritation to the respiratory tract | May cause respiratory tract irritation. Can produce delayed pulmonary edema. |
| **Skin** | Causes irritation to the skin | Contact may cause irritation or rash, particularly with moist skin. |
| **Eyes** | Causes irritation to the eyes | Potassium chloride is moderate eye irritant. Redness, tearing, possible abrasion can occur. |
| **Ingestion** | Causes irritation and reddening to the mucous membranes of the mouth, esophagus, and gastrointestinal tract. | May produce weakness and circulatory problems. May affect heart. In severe cases, ingestion may be fatal. |

#### Signs and Symptoms of Overexposure

| | Tris-Base | Potassium Chloride |
|---|---|---|
| **Inhalation** | Coughing, shortness of breath. | Inhalations of high concentrations of dust may cause nasal or lung irritation. |
| **Skin** | Redness, itching, and pain. | May cause skin irritation. |
| **Eyes** | Redness, itching, and pain. | Causes eye irritation. May cause chemical conjunctivitis. |
| **Ingestion** | Symptoms may include nausea, vomiting, and diarrhea. Large oral doses may cause weakness, collapse, blood clotting, and coma. The estimated lethal dose of Tris Base is 50 grams dry solid. | Large quantities can produce gastrointestinal irritation and vomiting. |

| | Tris-Base | Potassium Chloride |
|---|---|---|
| **Reproductive Toxicity** | No information found. | No information available. |
| **Teratogenic Effects** | No information found. | No information found. |
| **Carcinogenicity** | Not listed as a carcinogen by NTP or IARC. | Not listed by ACGIH, IARC, NIOSH, NTP, OR OSHA. |
| **Mutagenicity** | No information found. | Unscheduled DNA Synthesis: Oral, rat = 1500 ug/kg.; Mutation in Microorganisms = Mouse, Lymphocyte = 2048 mg/L.; DNA Damage = Hamster, Ovary = 260 mmol/L.; Cytogenetic Analysis: Hamster, Lung = 12 gm/L |

### Routes of Entry
Tris-Base: Ingestion.

Potassium Chloride: Ingestion, inhalation, skin and eye contact.

**Target Organ Statement**
Tris-Base: No information available.

Potassium Chloride: No information available.

### 3. COMPOSTION/INFORMATION ON INGREDIENTS

| Component | % Comp. | CAS # | EINECS # | TLV (Units) |
|---|---|---|---|---|
| Tris-Base | 3 | 77-86-1 | 201-064-4 | none established |
| Potassium Chloride | < 1 | 7447-40-7 | 231-211-8 | 10 mg/m3 |
| Water | 89 | 7732-18-5 | 231-791-2 | |
| Sodium Chloride | 8 | 7647-14-5 | 231-598-3 | none established |

## EEC LABEL SYMBOL AND CLASSIFICATION


**R: 36/37/38**
Irritating to eyes, respiratory system and skin.

**S: 26-36**
In case of contact with eyes, rinse immediately with plenty of water, and seek medical advice. Wear suitable protective clothing.

### 4. FIRST AID MEASURES

| | |
|---|---|
| **Eye contact** | Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately. |
| **Inhalation** | Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician. |
| **Skin contact** | Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse. |
| **Ingestion** | Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician. |

### 5. FIRE-FIGHTING MEASURES

| | | | |
|---|---|---|---|
| **Flash Point** | N.A. | **Flammable Limits** | N.A. |
| **Flash Point Method** | N.A. | **Autoignition temperature** | N.A. |

### Extinguishing media
Water spray, dry chemical, alcohol-resistant foam, or carbon dioxide.

### Protective Equipment
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

### Hazardous Combustion Products
Highly toxic gases may be involved in fires of this product.

### Unusual Fire and Explosion Hazards
Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

**NFPA Codes: Health** 1 **Flammability** 0 **Reactivity** 0

## 6. ACCIDENTAL RELEASE MEASURES

### Steps to be taken in case material is released or spilled
Use absorbent material to collect and contain for salvage or disposal.

### Waste Disposal Method
Disposal must be made in accordance with applicable federal, state, and local regulations.

### Personal Precautions
Wear appropriate protective equipment

## 7. HANDLING AND STORAGE

### Handling
Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

### Storage
Keep in a tightly closed container, stored in a cooled, dry, ventilated area.

### Storage Temperature
20 $^{o}$C

### Disposal
Observe all national, state

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Airborne Exposure Limits

**Component: Tris-Base**

| | |
|---|---|
| ACGIH Threshold Limit Value (TLV): | none established |
| OSHA Permissable Exposure Limit (PEL): | none established |

**Component: Potassium Chloride**

| | |
|---|---|
| ACGIH Threshold Limit Value (TLV): | 10 mg/m3 |
| OSHA Permissable Exposure Limit (PEL): | 15 mg/m3 |

### Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborn Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

### Respiratory Protection
For conditions of use where exposure to the dust or mist is apparent, a full-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

### Eye Protection
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

### Skin Protection
Wear protective gloves and clean body covering clothing.

### Other Control Measures
N.A.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Important Health Safety and Environmental Information

| | | | |
|---|---|---|---|
| **Boiling point** | 104 C | **Evaporation rate** | N.A. |
| **Melting point** | N.A. | **Solubity in water** | Miscible |
| **Vapor pressure (mmHg)** | N.A. | **pH** | 7 |
| **Vapor density (Air = 1)** | N.A. | **Specific gravity (H2O = 1)** | 1.05 |
| **% volatile by volume** | 0 | | |

## 10. STABILITY AND REACTIVITY

### Stability
Stable under ordinary conditions of use and storage.

### Conditions to Avoid
No information found.

### Hazardous Decomposition Products
Oxides of the contained metal and halogen, possibly also free, or ionic halogen

### Hazardous Polymerization
Will not occur

### Incompatibles
Tris-Base:
No incompatibility data found.

Potassium Chloride:
Bromine trifluoride; potassium permanganate plus sulfuric acid.

Water:
No incompatibility data found.

Sodium Chloride:
No incompatibility data

## 11. TOXICOLOGICAL INFORMATION

### Product LD50 Values

| | | |
|---|---|---|
| **TBS 10X** | **Oral Rat LD50 (mg/kg):** | **260000** |
| **TBS 10X** | **Dermal Rabbit LD50 (mg/kg):** | |

**Component Cancer List Status**

| | NTP Carcinogen | | |
|---|---|---|---|
| | **Known** | **Anticipated** | **IARC Category** |
| Tris-Base | No | No | None |
| Potassium Chloride | No | No | None |
| Water | No | No | None |
| Sodium Chloride | No | No | None |

## 12. ECOLOGICAL INFORMATION

**Tris-Base**
No information found on either the environmental fate or environmental toxicity of this material.

**Potassium Chloride**
No information found.

**Water**
Not applicable.

**Sodium Chloride**
No information found.

## 13. DISPOSAL CONSIDERATIONS

Observe all national, state, and local regulations regarding disposal.

## 14. TRANSPORT INFORMATION

### D.O.T.
Proper Shipping Name: Not regulated.
Hazard Class: N.A.
UN Number: N.A.
Packing Group: N.A.

### I.A.T.A.
Proper Shipping Name: Not regulated.
Hazard Class: N.A.
UN Number: N.A.
Packing Group: N.A.

### I.M.O.
Proper Shipping Name: Not regulated.
Hazard Class: N.A.
UN Number: N.A.
Packing Group: N.A.

## 15. REGULATORY INFORMATION

### United States

**TSCA Regulatory Statement**

All intentional ingredients are listed on the TSCA Inventory.

**SARA 311/312 Hazard Categories**

| Component | Fire | Pressure | Reactivity | Acute | Chronic |
|---|---|---|---|---|---|
| Tris-Base | No | No | No | Yes | No |
| Potassium Chloride | No | No | No | Yes | No |
| Water | No | No | No | No | No |
| Sodium Chloride | No | No | No | Yes | No |

### Europe

**EEC Regulatory**

All intentional ingredients are listed on the European EINECS Inventory.

## EEC LABEL SYMBOL AND CLASSIFICATION


**R: 36/37/38**
Irritating to eyes, respiratory system and skin.

**S: 26-36**
In case of contact with eyes, rinse immediately with plenty of water, and seek medical advice. Wear suitable protective clothing.

## 16. OTHER INFORMATION

**NFPA Codes: Health** 1 **Flammability** 0 **Reactivity** 0

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**End of Safety Data Sheet**