## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Quinolone ELISA Kit  
**PRODUCT CODES:** Cat# E4530-100  
**MANUFACTURER:** BioVision, Inc.  
**DIVISION:**  
**ADDRESS:** 155 S. Milpitas Boulevard, Milpitas, CA 95035  
**EMERGENCY PHONE:** 858-373-8066  
**CHEMTREC PHONE:** OTHER CALLS: 408-493-1800  
**FAX PHONE:** 408-493-1801

## SECTION 2: HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Volume</th>
<th>Safety Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELISA Microplate</td>
<td>-</td>
<td>8 X 12 Strips</td>
<td>No hazards</td>
</tr>
<tr>
<td>Quinolone Standard</td>
<td>--</td>
<td>2 vials</td>
<td>No hazards</td>
</tr>
<tr>
<td>HRP-conjugate</td>
<td>Liquid</td>
<td>7 ml</td>
<td>No hazards</td>
</tr>
<tr>
<td>Antibody</td>
<td>Liquid</td>
<td>7 ml</td>
<td>No hazards</td>
</tr>
<tr>
<td>TMB substrate</td>
<td>Liquid</td>
<td>10 ml</td>
<td>No hazards</td>
</tr>
<tr>
<td>Stop Solution</td>
<td>Contains Sulfuric Acid</td>
<td>10 ml</td>
<td>See below</td>
</tr>
<tr>
<td>Sample Diluent</td>
<td>Liquid</td>
<td>20 ml</td>
<td>No hazards</td>
</tr>
<tr>
<td>Wash Buffer</td>
<td>Liquid</td>
<td>50 ml</td>
<td>No hazards</td>
</tr>
<tr>
<td>Serum Solution</td>
<td>Liquid</td>
<td>0.25 ml</td>
<td>No hazards</td>
</tr>
<tr>
<td>Extraction Solution</td>
<td>Contains TCA</td>
<td>2 ml</td>
<td>See below</td>
</tr>
<tr>
<td>Standard Buffer</td>
<td>Liquid</td>
<td>40 ml</td>
<td>No hazards</td>
</tr>
<tr>
<td>Plate Sealers</td>
<td>--</td>
<td>4</td>
<td>No hazards</td>
</tr>
</tbody>
</table>

**Trichloroacetic acid:**  
Emergency Overview  
OSHA Hazards: Target organ effect, Corrosive, Carcinogen  
Target Organs: Central nervous system  
Other hazards which do not result in classification: Vesicant  
GHS Classification:  
- Acute toxicity, Oral (Category 5)  
- Skin corrosion (Category 1A)  
- Serious eye damage (Category 1)  
- Acute aquatic toxicity (Category 1)  
- Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements  
- **Pictogram:**  
- **Signal word:** Danger  
- **Hazard statement(s):**  
  - H303 May be harmful if swallowed.  
  - H314 Causes severe skin burns and eye damage.  
  - H410 Very toxic to aquatic life with long lasting effects.  
- **Precautionary statement(s):**  
  - P273 Avoid release to the environment.  
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
  - P310 Immediately call a POISON CENTER or doctor/physician.

**HMIS Classification**  
- Health hazard: 3  
- Chronic health hazard: *  
- Flammability: 1  
- Physical hazards: 0
NFPA Rating

- Health Hazard: 3
- Fire: 1
- Reactivity Hazard: 0

Potential Health Effects

**Inhalation:** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Skin:** May be harmful if absorbed through skin. Causes skin burns.

**Eyes:** Causes eye burns. Causes severe eye burns.

**Ingestion:** May be harmful if swallowed.

**Sulfuric acid:**

Emergency Overview

OSHA Hazards: Target organ effect, Corrosive

Target Organs: Teeth, Lungs

GHS Classification:

- Corrosive to metals
- Skin corrosion (Category 1A)
- Serious eye damage (Category 1)
- Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

**Pictogram:**

**Signal word:** Danger

**Hazard statement(s):**

- H290 May be corrosive to metals.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.

**Precautionary statement(s):**

- P234 Keep only in original container.
- P264 Wash skin thoroughly after handling.
- P280 Wear eye protection/ face protection.
- P280 Wear protective gloves.
- P302 + P352 IF ON SKIN: Wash with plenty of soap and 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.
- P332 + P313 If skin irritation occurs: Get medical advice/ attention.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.
- P362 Take off contaminated clothing and wash before reuse.
- P390 Absorb spillage to prevent material damage.
- P406 Store in corrosive resistant stainless steel container with a resistant inner liner.

**HMIS Classification**

- Health hazard: 3
- Chronic health hazard: *
- Flammability: 0
- Physical hazards: 2

**NFPA Rating**

- Health hazard: 3
- Fire: 0
- Reactivity hazard: 0
- Special hazard: W

**Potential Health Effects**

**Inhalation:** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Skin:** May be harmful if absorbed through skin. Causes skin burns.

**Eyes:** Causes eye burns.

**Ingestion:** May be harmful if swallowed.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>EC-No.</th>
<th>Molecular Weight</th>
<th>Chemical Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroacetic acid</td>
<td>76-03-9</td>
<td>200-927-2</td>
<td>163.39</td>
<td>C2HCl3O2</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>7664-93-9</td>
<td>231-639-5</td>
<td>98.08</td>
<td>H2O4S</td>
</tr>
</tbody>
</table>

**SECTION 4: FIRST AID MEASURES**

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact: Wash off with soap and plenty of water.

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.
5: FIRE-FIGHTING MEASURES

Condition of flammability: Not flammable or combustible.
Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.
Hazardous combustion products: Hazardous combustion products formed under fire conditions—carbon oxides, nitrogen oxides.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid dust formation. Avoid breathing vapors, mist, gas, or dust.
Environmental precautions: Do not let product enter drains.
Methods for cleaning up: Sweep up and shovel. Keep in suitable, closed containers for disposal.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.
Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.
Recommended storage temperature: -20 °C

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroacetic acid</td>
<td>76-03-9</td>
<td>TWA</td>
<td>1 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>7 mg/m³</td>
<td>USA. OSHA – Table Z-1 Limits for Air Contaminants – 1910.1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 ppm</td>
<td>USA. NIOSH recommended exposure limits</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid</td>
<td>7664-93-9</td>
<td>TWA</td>
<td>0.2 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>USA. OSHA – Table Z-1 Limits for Air Contaminants – 1910.1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) – Table Z-1: Limits for Air Contaminants</td>
</tr>
</tbody>
</table>

Personal protective equipment

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand 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.

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

Skin and body protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substance, and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
General industrial hygiene practice.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Trichloroacetic acid</th>
<th>Sulfuric acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White crystalline powder</td>
<td>Liquid</td>
</tr>
<tr>
<td>pH</td>
<td>1 at 81.7 g/l at 25 °C (77 °F)</td>
<td>1.2 at 5 g/l</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Completely soluble</td>
<td>Soluble</td>
</tr>
<tr>
<td>Other Solubility</td>
<td>No data available</td>
<td>290 °C (554 °F)</td>
</tr>
<tr>
<td>Boiling Point (°C)</td>
<td>196 °C (385 °F)</td>
<td>3 °C (37 °F)</td>
</tr>
<tr>
<td>Melting Point (°C)</td>
<td>54-58 °C (129-136 °F)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point (°C)</td>
<td>&gt;113 °C (235 °F)</td>
<td>No data available</td>
</tr>
</tbody>
</table>
SECTION 10: STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Trichloroacetic acid</th>
<th>Sulfuric acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>Stable under recommended storage conditions</td>
<td>No data available</td>
</tr>
<tr>
<td>Conditions to avoid:</td>
<td>Exposure to moisture. Heat.</td>
<td>Bases, halides, organic materials, carboxides, fulminates, nitrates, picrates, cyanides, chlorates, alkali halides, zinc salts, permanganates, hydrogen peroxide, azides, perchlorates, nitromethane, phosphorus. Reacts violently with: cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorus (III) oxides, powdered metals</td>
</tr>
<tr>
<td>Materials to avoid:</td>
<td>Strong oxidizing agents, strong bases, amines</td>
<td>No data available</td>
</tr>
<tr>
<td>Hazardous decomposition products:</td>
<td>No data available</td>
<td>Sodium oxides</td>
</tr>
</tbody>
</table>

SECTION 11: TOXICOLOGICAL INFORMATION

**Trichloroacetic acid:**
- **Acute toxicity:** LD50 Oral – rat – 3,320 mg/kg
- **Skin corrosion/irritation:** no data available
- **Serious eye damage/eye irritation:** Eyes – rabbit – severe eye irritation – 5 s
- **Respiratory or skin sensitization:** no data available
- **Germ cell mutagenicity:** no data available
- **Carcinogenicity:**
  - **IARC:** 3 – Group 3: Not classifiable as to its carcinogenicity to humans (Trichloroacetic acid)
  - **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:** no data available
- **Teratogenicity:** no data available
- **Specific target organ toxicity – single exposure (GHS):** no data available
- **Specific target organ toxicity – repeated exposure (GHS):** no data available
- **Potential Health Effects:**
  - **Inhalation:** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. 
  - **Skin:** May be harmful if absorbed through skin. Causes skin burns.
  - **Eyes:** Causes eye burns. Causes severe eye burns.
  - **Ingestion:** May be harmful if swallowed.
- **Signs and Symptoms of Exposure:** Exposure may cause burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.
- **Additional information:** RTECS: AJ7875000

**Sulfuric acid:**
- **Acute toxicity:** LD50 Oral – rat – 2,140 mg/kg
  LC50 Inhalation – rat – 2 h – 510 mg/m³
- **Skin corrosion/irritation:** Skin – rabbit – extremely corrosive and destructive to tissue
- **Respiratory or skin sensitization:** no data available
- **Germ cell mutagenicity:** no data available
- **Carcinogenicity:** The International Agency for Research on Cancer (IARC) has determined that occupational exposure to strong-inorganic-acid mists containing sulfuric acid is carcinogenic to rats (Group 1).
  - **IARC:** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed rat 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:** no data available
- **Teratogenicity:** no data available
Any other reproductive harm.

California Prop. 65 Components
Sulfuric acid

New Jersey Right To Know Components
Sulfuric acid

Pennsylvania Right To Know Components
Sulfuric acid

Massachusetts Right To Know Components
Sulfuric acid

SARA 311/312 Hazards

SARA 313 Components

Gentamicin ELISA kit
Cat# E4530-100 Quinolone ELISA Kit

Potential Health Effects

Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Skin: May be harmful if absorbed through skin. Causes skin burns.

Eyes: Causes eye burns. Causes severe eye burns.

Ingestion: May be harmful if swallowed.

Signs and Symptoms of Exposure: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, pulmonary edema. Effects may be delayed. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects: no data available

Additional information: RTECS: WS5600000

SECTION 12: ECOLOGICAL INFORMATION

Trichloroacetic acid:

Persistence and degradability: Biodegradability (Zahn-Wellens Test) → Result: 5% - not readily biodegradable

Toxicity: Toxicity to fish → LC50 – Pimephales promelas (fathead minnow) – 2,000 mg/l – 96 h

Toxicity to daphnia and other aquatic invertebrates → EC50 – Daphnia magna (Water flea) – 1,460-2,000 mg/l – 48 h

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

Sulfuric acid:

Persistence and degradability: no data available

Toxicity: Toxicity to fish: LC50 – Gambusia affinis (Mosquito fish) – 42 mg/l – 96 h

Biodegradability: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life with long lasting effects.

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Observe all federal, state, and local environmental regulations.

Contaminated packaging: Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

Trichloroacetic acid:

DOT (US): UN-number: 1839, Class: 8, Packing group: II; Proper shipping name: Trichloroacetic acid; Marine pollutant: No; Poison inhalation hazard: No

IMDG: UN-number: 1839, Class: 8, Packing group: II; EMS-No: F-A, S-B; Proper shipping name: TRICHLOROACETIC ACID; Marine pollutant: No

IATA: UN-number: 1839, Class: 8, Packing group: II; Proper shipping name: Trichloroacetic acid

Sulfuric acid:

DOT (US): UN-number: 1830, Class: 8, Packing group: II; Proper shipping name: Sulfuric acid; Reportable Quantity (RQ): 1000 lbs.; Marine pollutant: No; Poison inhalation hazard: No

IMDG: UN-number: 1830, Class: 8, Packing group: II; EMS-No: F-A, S-B; Proper shipping name: SULFURIC ACID; Marine pollutant: No

IATA: UN-number: 1830, Class: 8, Packing group: II; Proper shipping name: Sulfuric acid

SECTION 15: REGULATORY INFORMATION

Gentamicin ELISA kit:

SARA 302 Components: Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01

SARA 313 Components: Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01

SARA 311/312 Hazards: Trichloroacetic acid: Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components: Trichloroacetic acid: CAS-No. 76-03-9; Revision Date: 2007-03-1

Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01

Pennsylvania Right To Know Components: Trichloroacetic acid: CAS-No. 76-03-9; Revision Date: 2007-03-1

Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01

New Jersey Right To Know Components: Trichloroacetic acid: CAS-No. 76-03-9; Revision Date: 2007-03-1

Sulfuric acid, CAS-No. 7664-93-9; Revision Date: 2007-07-01

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
EU regulations: This product is not classified according to the EU regulations.

<table>
<thead>
<tr>
<th>Component</th>
<th>Risk Phrases</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroacetic acid</td>
<td>R35, R50/53</td>
<td>S26, S36/37/39, S45, S60, S61</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>R35</td>
<td>S26, S30, S45</td>
</tr>
</tbody>
</table>

SECTION 16: OTHER INFORMATION

DISCLAIMER:
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. BioVision, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.