SECTION 1: IDENTIFICATION

1.1. Product Identifier
Product Form: Mixture
Product Name: Burette Solution
Synonyms: Sodium Acid Sulfate

1.2. Intended Use of the Product
Use of the substance/mixture: No use is specified.

1.3. Name, Address, and Telephone of the Responsible Party
Company
Burrell Scientific LLC
300 Parkway View Drive
Pittsburgh, PA 15205
T: (412) 747-2111
burrellsci.com

1.4. Emergency Telephone Number
Emergency Number: (800) 424-9300
CHEMTREC

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture
Classification (GHS-US)
Skin Corr. 1A H314
Eye Dam. 1 H318
Carc. 1A H350
Aquatic Acute 3 H402
Aquatic Chronic 3 H412
Full text of H-phrases: see section 16

2.2. Label Elements
GHS-US Labeling
Hazard Pictograms (GHS-US):
\[ \text{GHS05} \quad \text{GHS08} \]

Signal Word (GHS-US): Danger
Hazard Statements (GHS-US):
H314 - Causes severe skin burns and eye damage.
H318 - Causes serious eye damage.
H350 - May cause cancer (Inhalation).
H402 - Harmful to aquatic life.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary Statements (GHS-US):
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe vapors, spray, mist.
P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear eye protection, protective gloves, protective clothing, respiratory protection.
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P310 - Immediately call a doctor, a POISON CENTER.
P321 - Specific treatment (see Section 4).
2.3. Other Hazards
Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. If involved in a fire and thermal decomposition occurs, or other decomposition occurs corrosive, toxic, and acrid vapors may be released.

2.4. Unknown Acute Toxicity (GHS-US)
No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Product Identifier (CAS No)</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>55</td>
<td>Not classified</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>7664-93-9</td>
<td>24</td>
<td>Skin Corr. 1A, H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1, H318</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Carc. 1A, H350</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 3, H402</td>
</tr>
<tr>
<td>Disodium carbonate</td>
<td>497-19-8</td>
<td>20.99</td>
<td>Eye Irrit. 2A, H319</td>
</tr>
<tr>
<td>C.I. Acid Orange 52</td>
<td>547-58-0</td>
<td>0.01</td>
<td>Acute Tox. 3 (Oral), H301</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. 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 (show the label if possible).
First-aid Measures After Inhalation: Keep at rest and in a position comfortable for breathing. Seek medical attention. Symptoms may be delayed.
First-aid Measures After Skin Contact: Remove/Take off immediately all contaminated clothing. Immediately flush skin with plenty of water for at least 60 minutes. Wash with plenty of soap and water. Seek medical attention. Wash contaminated clothing before reuse.
First-aid Measures After Eye Contact: Rinse cautiously with water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.
First-aid Measures After Ingestion: Rinse mouth thoroughly with water. Do NOT induce vomiting. Seek medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/Injuries: Causes severe skin burns and eye damage. May cause cancer (Inhalation).
Symptoms/Injuries After Inhalation: Contact may cause immediate severe irritation progressing quickly to chemical burns. May cause pulmonary edema. Symptoms may be delayed.
Symptoms/Injuries After Skin Contact: Causes severe skin burns. Symptoms may include: moderate to severe irritation which will progress to chemical burns.
Symptoms/Injuries After Eye Contact: Causes serious eye damage. Symptoms may include: redness, pain, swelling, itching, burning, tearing, and blurred vision.
Symptoms/Injuries After Ingestion: Contact may cause immediate severe irritation progressing quickly to chemical burns. Swallowing a small quantity of this material will result in serious health hazard.
Chronic Symptoms: Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans. May cause cancer by inhalation.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed
If exposed or concerned, get medical advice and attention. If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media
Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.
Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture
Fire Hazard: Not flammable.
Explosion Hazard: Product is not explosive.

Reactivity: Reacts with (strong) oxidizers: (increased) risk of fire.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire. Under fire conditions, hazardous fumes will be present.

Firefighting Instructions: Keep upwind. Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Firefighters must use full bunker gear including NIOSH-approved positive-pressure self-contained breathing apparatus to protect against potential hazardous combustion and decomposition products.

Other Information: Do not allow the product to be released into the environment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all unnecessary exposure. Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist or spray.

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).


6.1.2. For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection.


6.2. Environmental Precautions

Do not allow to enter drains or water courses. Prevent entry to sewers and public waters. Contact competent authorities after a spill.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Ventilate area. Cautiously neutralize spilled liquid. Clear up spills immediately and dispose of waste safely. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Collect absorbed material and place into a sealed, labeled container for proper disposal. Practice good housekeeping - spillage can be slippery on smooth surface either wet or dry.

6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Contact with metals may evolve flammable hydrogen gas. There is sufficient evidence that occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Always wash your hands immediately after handling this product, and once again before leaving the workplace. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke in areas where product is used.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Observe all regulations and local requirements regarding storage of containers.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Store away from oxygen and oxidizers. Storage areas should be periodically checked for corrosion and integrity. Keep only in original container.

Incompatible Products: Water, humidity, alkalis, potassium chloride, potassium perchlorate, potassium permanganate, sodium, lithium, bases, organic material, halogens, metal acetylides, oxides and hydrides, metals, oxidizing agents, reducing agents, and other reactive substances.

7.3. Specific End Use(s)

No use is specified.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), or OSHA (PEL).

| Sulfuric acid (7664-93-9) |    |
|--------------------------|--|--|
Burette Solution
Safety Data Sheet
According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>USA OSHA</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>1 mg/m³</th>
</tr>
</thead>
</table>

8.2. Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.


Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Impermeable protective gloves.

Eye Protection: A full face shield is recommended. Chemical safety goggles.

Skin and Body Protection: Chemical resistant suit. Rubber apron, boots.

Respiratory Protection: Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

Environmental Exposure Controls: Do not allow the product to be released into the environment.

Consumer Exposure Controls: Do not eat, drink or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State: Liquid

Appearance: Clear reddish solution

Odor: No odor

Odor Threshold: No data available

pH: No data available

Evaporation Rate: No data available

Melting Point: No data available

Freezing Point: No data available

Boiling Point: > 100 °C (> 212 °F)

Flash Point: No data available

Auto-ignition Temperature: No data available

Decomposition Temperature: 340 °C (644 °F)

Flammability (solid, gas): No data available

Vapor Pressure: Less than water

Relative Vapor Density at 20 °C: No data available

Relative Density: No data available

Specific Gravity: 1.18

Solubility: Water: Completely soluble

Partition Coefficient: N-Octanol/Water: No data available

Viscosity: No data available

Explosive Properties: Product is not explosive

9.2. Other Information

No additional information available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity: Reacts with (strong) oxidizers: (increased) risk of fire.

10.2. Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
10.4. **Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, open flames, sources of ignition and incompatible materials.

10.5. **Incompatible Materials:** Water, humidity, alkalis, potassium chlorate, potassium perchlorate, potassium permanganate, sodium, lithium, bases, organic material, halogens, metal acetylides, oxides and hydrides, metals, oxidizing agents, reducing agents, and other reactive substances.

10.6. **Hazardous Decomposition Products:** Sulfuric acid will release sulfur oxides at high temperatures. Sulfur oxides are toxic. Reacts with carbonates to generate carbon dioxide gas. Reacts with cyanides and sulfides to form poisonous hydrogen cyanide and hydrogen sulfide respectively.

**SECTION 11: TOXICOLOGICAL INFORMATION**

11.1. **Information On Toxicological Effects**

**Acute Toxicity:** Not classified

<table>
<thead>
<tr>
<th>Substance</th>
<th>LD50 Oral Rat</th>
<th>LC50 Inhalation Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid (7664-93-9)</td>
<td>2140 mg/kg</td>
<td>510 mg/m³ (Exposure time: 2 h)</td>
</tr>
<tr>
<td>Disodium carbonate (497-19-8)</td>
<td>4090 mg/kg</td>
<td>2300 mg/m³ (Exposure time: 2 h)</td>
</tr>
<tr>
<td>C.I. Acid Orange 52 (547-58-0)</td>
<td>100.00 mg/kg body weight</td>
<td></td>
</tr>
</tbody>
</table>

**Skin Corrosion/Irritation:** Causes severe skin burns and eye damage.

**Serious Eye Damage/Irritation:** Causes serious eye damage.

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** May cause cancer (Inhalation).

**Strong Inorganic acid mists containing sulfuric acid (RR-03978-1)**

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 Fish 1</th>
<th>EC50 Daphnia 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid (7664-93-9)</td>
<td>500 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])</td>
<td>265 mg/l (Exposure time: 48 h - Species: Daphnia magna)</td>
</tr>
</tbody>
</table>

**Section 12: ECOLOGICAL INFORMATION**

12.1. **Ecological Toxicity**

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 Fish 1</th>
<th>LC 50 Fish 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid (7664-93-9)</td>
<td>500 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])</td>
<td>265 mg/l (Exposure time: 48 h - Species: Daphnia magna)</td>
</tr>
<tr>
<td>Disodium carbonate (497-19-8)</td>
<td>300 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])</td>
<td>310 - 1220 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])</td>
</tr>
</tbody>
</table>
12.2. Persistence and Degradability
No additional information available

12.3. Bioaccumulative Potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>BCF fish 1</th>
<th>Degradation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid (7664-93-9)</td>
<td>(no bioaccumulation)</td>
<td></td>
</tr>
<tr>
<td>Disodium carbonate (497-19-8)</td>
<td>(no bioaccumulation)</td>
<td></td>
</tr>
</tbody>
</table>

12.4. Mobility in Soil
No additional information available

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Sewage Disposal Recommendations: Do not dispose of waste into sewer. Do not empty into drains; dispose of this material and its container in a safe way.

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

Additional Information: Contains: Sulfuric Acid.

SECTION 14: TRANSPORT INFORMATION

14.1. In Accordance with DOT

Proper Shipping Name: BISULFATE, AQUEOUS SOLUTION
Hazard Class: 8
Identification Number: UN2837
Label Codes: 8
Packing Group: II
ERG Number: 154

14.2. In Accordance with IMDG

Proper Shipping Name: BISULPHATES, AQUEOUS SOLUTION
Hazard Class: 8
Identification Number: UN2837
Packing Group: II
Label Codes: 8
EmS-No. (Fire): F-A
EmS-No. (Spillage): S-B

14.3. In Accordance with IATA

Proper Shipping Name: BISULPHATES, AQUEOUS SOLUTION
Packing Group: II
Identification Number: UN2837
Hazard Class: 8
Label Codes: 8
ERG Code (IATA): 8L

SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulations

<table>
<thead>
<tr>
<th>Burette Solution</th>
<th>SARA Section 311/312 Hazard Classes</th>
<th>Immediate (acute) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Delayed (chronic) health hazard</td>
</tr>
</tbody>
</table>

Water (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Sulfuric acid (7664-93-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the United States SARA Section 302
Listed on United States SARA Section 313

SARA Section 302 Threshold Planning Quantity (TPQ): 1000
**Burette Solution**

**Safety Data Sheet**

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>SARA Section 313 - Emission Reporting</th>
<th>1.0 % (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disodium carbonate (497-19-8)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>C.I. Acid Orange 52 (547-58-0)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>

**15.2 US State Regulations**

<table>
<thead>
<tr>
<th>Strong inorganic acid mists containing sulfuric acid (RR-03978-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California - Proposition 65 - Carcinogens List</td>
</tr>
<tr>
<td>WARNING: This product contains chemicals known to the State of California to cause cancer.</td>
</tr>
<tr>
<td>Sulfuric acid (7664-93-9)</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Carcinogens List</td>
</tr>
<tr>
<td>WARNING: This product contains chemicals known to the State of California to cause cancer.</td>
</tr>
</tbody>
</table>

**Sulfuric acid (7664-93-9)**

- U.S. - Massachusetts - Right To Know List
- U.S. - New Jersey - Right to Know Hazardous Substance List
- U.S. - Pennslyvania - RTK (Right to Know) - Environmental Hazard List
- U.S. - Pennsylvania - RTK (Right to Know) List

**SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION**

- **Revision Date**: 01/23/2015
- **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:**

- Acute Tox. 3 (Oral) Acute toxicity (oral) Category 3
- Aquatic Acute 3 Hazardous to the aquatic environment - Acute Hazard Category 3
- Aquatic Chronic 3 Hazardous to the aquatic environment - Chronic Hazard Category 3
- Carc. 1A Carcinogenicity Category 1A
- Eye Dam. 1 Serious eye damage/eye irritation Category 1
- Eye Irrit. 2A Serious eye damage/eye irritation Category 2A
- Skin Corr. 1A Skin corrosion/irritation Category 1A
- H301 Toxic if swallowed
- H314 Causes severe skin burns and eye damage
- H318 Causes serious eye damage
- H319 Causes serious eye irritation
- H350 May cause cancer
- H402 Harmful to aquatic life
- H412 Harmful to aquatic life with long lasting effects

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

SDS US (GHS HazCom)