Material Safety Data Sheet

Section 1: Chemical Product and Company Identification
Cat#: 25087A
Part Name: CHROMIC ACID SOLUTION-GMS SOLN. A
Supplier: Polysciences, Inc.
400 Valley Road
Warrington, PA 18976 USA
Telephone #011-215-343-6484

Section 2: Composition/Information on Ingredients
Note: Items listed with a CASRN... number have no CAS# available.

<table>
<thead>
<tr>
<th>Item#</th>
<th>Name</th>
<th>CAS#</th>
<th>% in product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chromium trioxide</td>
<td>0001333820</td>
<td>3.8</td>
</tr>
<tr>
<td>2</td>
<td>Water</td>
<td>0007732185</td>
<td>96.2</td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

Causes skin and eye burns.
May be fatal if inhaled, absorbed through skin or swallowed.
May cause target organ or system damage - kidney.
May cause target organ or system damage - lung.
Strong oxidizer. Contact with other combustible material can cause fire.

Hazard Ratings:
These ratings are Polysciences' Inc. own assesments of the properties of the material using the ANSI/NFPA 704 Standard.
Additional information can be found by consulting in the NFPA published ratings lists (List 325 and List 49).

If no data is listed the information is not available.

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

Section 4: First Aid Measures

Contact medical personnel immediately.
Flush eyes with flowing water for at least 15 minutes.
Separate eyelids with finger tips.
Wash skin with deluge of water for at least 15 minutes.

Section 5: Fire Fighting Measures

Flash point, deg F.: no data
UEL: no data  LEL: no data  Method: nap
Autoignition temperature, deg. F.: no data
Flammable Classification: no data  Flame Propagation Rate: no data
Hazardous Combustion Products: chromium compounds

Section 6: Accidental Release Measures

Any information listed below is to be considered in addition to internal guidelines for isolation of spill, containment of spill, removal of ignition sources from immediate area, and collection for disposal of spill by trained, properly protected clean up personnel.
Protect personnel from exposure.
Sweep up solids.

Section 7: Handling and Storage

Store at room temp

Section 8: Exposure Controls/Personal Protection

The use of eye protection in the form of safety glasses with side shields and the use of skin protection for hands in the form of gloves are considered minimum and non-discretionary in work places and laboratories. Any recommended personal protection equipment or environmental equipment is to be considered as additional to safety glasses and gloves.
Use butyl rubber gloves. Latex is not adequate.
Use chemical splash goggles and face shield.
Use process enclosures, local exhaust ventilation, or other engineering controls.
Chemical-resistant gloves should be worn whenever this material is handled. The glove material has to be impermeable and resistant to the product. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. All glove recommendations presume that the risk of exposure is through splash and not intentional immersion of the hands into the product. Since glove permeation data does not exist for this material, no recommendation for the glove material can be given for the product. Permeation data must be obtained from the glove manufacturer to determine if the glove is suitable for the task.

Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tr>
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</tr>
<tr>
<td>Formula Weight</td>
<td>no data</td>
</tr>
<tr>
<td>boiling point</td>
<td>no data</td>
</tr>
<tr>
<td>melting point</td>
<td>no data</td>
</tr>
<tr>
<td>solubility</td>
<td>soluble</td>
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<tr>
<td>appearance</td>
<td>red liquid</td>
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<tr>
<td>Specific gravity</td>
<td>1</td>
</tr>
<tr>
<td>pH</td>
<td>no data</td>
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<td>vapor density</td>
<td>no data</td>
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<tr>
<td>vapor pressure</td>
<td>no data</td>
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<tr>
<td>boiling point</td>
<td>no data</td>
</tr>
<tr>
<td>melting point</td>
<td>no data</td>
</tr>
<tr>
<td>solubility</td>
<td>soluble</td>
</tr>
<tr>
<td>appearance</td>
<td>red liquid</td>
</tr>
</tbody>
</table>

Section 10: Stability and Reactivity

Chemical Stability: stable

Conditions to Avoid: none

Incompatibility with other materials: organics; finely powdered metals; phosphorus; hydrogen sulfide

Hazardous Decomposition Products: no data

Hazardous Polymerization: will not occur

Section 11: Toxicological Information

Acute Data: LD₅₀ oral rat 80 mg/Kg

Subchronic data: possible tumorigen; fertility effects; embryo and fetus effects; developmental abnormalities

Section 12: Ecological Information

no data

Section 13: Disposal Considerations

The following chart lists the status of the chemical and its components in reference to 40 CFR Part 261.33. If the product is listed by code number the substance may be subject to special federal and state disposal regulations. If no codes are listed the material must be disposed in compliance with all Federal, State, and Local Regulations.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Waste Code</th>
<th>Regulated Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001333820</td>
<td>not listed</td>
<td>not listed</td>
</tr>
<tr>
<td>0007732185</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Section 14: Transportation Data

Proper Shipping Name: CHROMIUM TRIOXIDE

Chemical Name

UN: UN1463

Class: 5.1

PG: II

Section 15: Regulatory Information

R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.

R34 Causes burns.

R8 Contact with combustible material may cause fire.

S0 No S Phrase applies. Use ambient temperature storage and normal chemical controls.

S7/9 Keep container tightly closed and in a well-ventilated place.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

GHS Precautionary and Hazard Statements

DANGER

WARNING

P380 Evacuate area.

P391 Collect spillage.

P280 Wear protective gloves/protective clothing/eye protection/face protection.
Section 16: Other Information
POLYSCIENCES, INC. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. POLYSCIENCES, INC. makes no representations or warranties, either expressed or implied of merchantability, fitness for particular purposes with respect to the information set forth herein or to which the information refers. Accordingly, POLYSCIENCES, INC. will not be responsible for damages resulting from the use of or reliance upon this information.

END OF MSDS
Material Safety Data Sheet

Section 1: Chemical Product and Company Identification

Cat#: 25087B
Part Name: SODIUM METABISULFITE-GMS SOLN. B
Supplier: Polysciences, Inc.
400 Valley Road
Warrington, PA 18976 USA
Telephone #011-215-343-6484

Section 2: Composition/ Information on Ingredients

<table>
<thead>
<tr>
<th>Item#</th>
<th>Name</th>
<th>CAS#</th>
<th>% in product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sodium metabisulfite</td>
<td>0007681574</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Water</td>
<td>0007732185</td>
<td>99</td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

Causes eye irritation.

Hazard Ratings:

These ratings are Polysciences’ Inc. own assessments of the properties of the material using the ANSI/NFPA 704 Standard. Additional information can be found by consulting in the NFPA published ratings lists (List 325 and List 49).

If no data is listed the information is not available.

Health          Flammability  Reactivity
2               0            0

Section 4: First Aid Measures

Contact medical personnel.
Flush eyes with flowing water for at least 15 minutes.
If breathing is difficult, contact emergency personnel.
If swallowed, wash out mouth with water if person is conscious.
Remove contaminated clothing.
Remove to fresh air.
Separate eyelids with finger tips.
Wash skin with deluge of water for at least 15 minutes.

Section 5: Fire Fighting Measures

Flash point, deg F.: no data
UEL: no data
LEL: no data
Autoignition temperature, deg. F.: no data
Flammability Classification: no data
Flame Propagation Rate: no data
Hazardous Combustion Products: no data

Section 6: Accidental Release Measures

Any information listed below is to be considered in addition to internal guidelines for isolation of spill, containment of spill, removal of ignition sources from immediate area, and collection for disposal of spill by trained, properly protected clean up personnel.

Protect personnel from exposure.
Sweep up solids.
Ventilate the area.

Section 7: Handling and Storage

Store at room temp

Section 8: Exposure Controls/ Personal Protection

The use of eye protection in the form of safety glasses with side shields and the use of skin protection for hands in the form of gloves are considered minimum and non-discretionary in work places and laboratories. Any recommended personal protection equipment or environmental equipment is to be considered as additional to safety glasses and gloves.

Use process enclosures, local exhaust ventilation, or other engineering controls.

Chemical-resistant gloves should be worn whenever this material is handled. The glove material has to be impermeable and resistant to the product. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. All glove recommendations presume that the risk of exposure is through splash and not intentional immersion of the hands into the product.
Since glove permeation data does not exist for this material, no recommendation for the glove material can be given for the product. Permeation data must be obtained from the glove manufacturer to determine if the glove is suitable for the task.
Section 9: Physical and Chemical Properties

- Formula: no data
- Formula Weight: no data
- vapor pressure: no data
- boiling point: no data
- Specific gravity: 1
- melting point: no data
- ph: no data
- solubility: appearance: liquid

Section 10: Stability and Reactivity

- Chemical Stability: stable
- Conditions to Avoid: moisture sensitive
- Incompatibility with other materials: strong acids, strong oxidizing agents
- Hazardous Decomposition Products: sulfur oxides
- Hazardous Polymerization: will not occur

Section 11: Toxicological Information

- Acute Data: Oral Rat LD50: >2000 mg/kg
  Skin Rat LD50: >2000 mg/kg
  Intravenous Rat LD50: 115 mg/kg
  Parenteral Mouse LD50: 910 mg/kg
- Subchronic data: no data

Section 12: Ecological Information

- no data

Section 13: Disposal Considerations

The following chart lists the status of the chemical and its components in reference to 40 CFR Part 261.33. If the product is listed by code number the substance may be subject to special federal and state disposal regulations. If no codes are listed the material must be disposed in compliance with all Federal, State and Local Regulations.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Waste Code</th>
<th>Regulated Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0007681574</td>
<td>not listed</td>
<td>not listed</td>
</tr>
<tr>
<td>0007732185</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Section 14: Transportation Data

- Proper Shipping Name: NOT REGULATED
- Chemical Name
- UN
- Class
- PG

Section 15: Regulatory Information

- S0: No S Phrase applies. Use ambient temperature storage and normal chemical controls.
- S7/9: Keep container tightly closed and in a well-ventilated place.
- S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

GHS Precautionary and Hazard Statements

- DANGER
- P380: Evacuate area.
- P391: Collect spillage.
- P285: In case of inadequate ventilation wear respiratory protection.
- H319: Causes serious eye irritation.
- P301A: IF SWALLOWED do not induce vomiting. Do not give anything to drink. Obtain medical attention without delay.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P305B: IF IN EYES, Separate eyelids with finger tips.
- P313: Get medical advice/attention.
- P340: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Section 16: Other Information
POLYSCIENCES, INC. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. POLYSCIENCES, INC. makes no representations or warranties, either expressed or implied of merchantability, fitness for particular purposes with respect to the information set forth herein or to which the information refers. Accordingly, POLYSCIENCES, INC. will not be responsible for damages resulting from the use of or reliance upon this information.

END OF MSDS
Section 1: Chemical Product and Company Identification
Cat#: 25087C
Part Name: 5% SILVER NITRATE-GMS SOLN. C
Supplier: Polysciences, Inc.
400 Valley Road
Warrington, PA 18976 USA
Telephone #011-215-343-6484

Section 2: Composition/ Information on Ingredients

<table>
<thead>
<tr>
<th>Item#</th>
<th>Name</th>
<th>CAS#</th>
<th>% in product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Silver nitrate</td>
<td>0007761888</td>
<td>4.76</td>
</tr>
<tr>
<td>2</td>
<td>Water</td>
<td>0007732185</td>
<td>95.23</td>
</tr>
</tbody>
</table>

Note: Items listed with a CASRN... number have no CAS# available.

Section 3: Hazards Identification
Causes skin, eye and respiratory tract burns.
Oxidizing material.

Hazard Ratings:
These ratings are Polysciences' Inc. own assemsments of the properties of the material using the ANSI/NFPA 704 Standard.
Additional information can be found by consulting in the NFPA published ratings lists (List 325 and List 49).

If no data is listed the information is not available.
Health Flammability Reactivity
3 0 3

Section 4: First Aid Measures
Brush off the skin.
Contact medical personnel.
Flush eyes with flowing water for at least 15 minutes.
For eye contact, obtain emergency medical attention.
If breathing is difficult, contact emergency personnel.
If swallowed, NO NOT INDUCE vomiting. Give 8 oz. of water or milk to drink. Call a physician or the POISON CONTROL CENTER immediately.
Never give anything by mouth to an unconscious person.
Separate eyelids with finger tips.
Wash skin with deluge of water for at least 15 minutes.

Section 5: Fire Fighting Measures
Flash point, deg F.: no data Method: no data
UEL: no data LEL: no data Autoignition temperature, deg. F.: no data
Flammability Classification: no data Flame Propagation Rate: no data
Hazardous Combustion Products: carbon oxides

Section 6: Accidental Release Measures
Any information listed below is to be considered in addition to internal guidelines for isolation of spill, containment of spill, removal of ignition sources from immediate area, and collection for disposal of spill by trained, properly protected clean up personnel.
Prevent contact with combustible materials.
Protect personnel from exposure.
Use appropriate personal protective equipment.

Section 7: Handling and Storage
Store at 4 deg. C.

Section 8: Exposure Controls/ Personal Protection
The use of eye protection in the form of safety glasses with side shields and the use of skin protection for hands in the form of gloves are considered minimum and non-discretionary in work places and laboratories. Any recommended personal protection equipment or environmental equipment is to be considered as additional to safety glasses and gloves.
Use chemical splash goggles and face shield.
Chemical-resistant gloves should be worn whenever this material is handled. The glove material has to be impermeable and resistant to the product. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. All glove recommendations presume that the risk of exposure is through splash and not intentional immersion of the hands into the product.
Since glove permeation data does not exist for this material, no recommendation for the glove material can be given for the product. Permeation data must be obtained from the glove manufacturer to determine if the glove is suitable for the task.

Section 9: Physical and Chemical Properties

Formula: no data    vapor pressure: no data
Formula Weight: no data    vapor density: no data
boiling point: no data    Specific gravity: 1
melting point: no data    ph: no data
solubility: no data    appearance: liquid

Section 10: Stability and Reactivity

Chemical Stabilit stable
Conditions to Avoid: high temperatures
Incompatibility with other materials: oxidizing agents and reducing agents
Hazardous Decomposition Products: no data
Hazardous Polymerization: will not occur

Section 11: Toxicological Information

Acute Data: LD50 oral rat 1173 mg/kg
Subchronic data: IARC Group 2A

Section 12: Ecological Information

LC50 rainbow trout 0.006 mg/l 96 h; EC50 Water flea 0.0006 mg/l 48 h

Section 13: Disposal Considerations

The following chart lists the status of the chemical and its components in reference to 40 CFR Part 261.33. If the product is listed by code number the substance may be subject to special federal and state disposal regulations. If no codes are listed the material must be disposed in compliance with all Federal, State and Local Regulations.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Waste Code</th>
<th>Regulated Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0007732185</td>
<td>not listed</td>
<td>not listed</td>
</tr>
<tr>
<td>0007761888</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Section 14: Transportation Data

Proper Shipping Name  Silver nitrate
Chemical Name
UN  UN1493
Class  5.1
PG  II

Section 15: Regulatory Information

R34  Causes burns.
R8  Contact with combustible material may cause fire.
S47  Keep at temperature not exceeding 4 °C
S7/9  Keep container tightly closed and in a well-ventilated place.
S36/37/39  Wear suitable protective clothing, gloves and eye/face protection.

GHS Precautionary and Hazard Statements

DANGER
P221  Take any precaution to avoid mixing with combustibles...
P281  Use personal protective equipment as required.
P380  Evacuate area.
P280  Wear protective gloves/protective clothing/eye protection/face protection.
H270  May cause or intensify fire; oxidiser.
Section 16: Other Information
POLYSCIENCES, INC. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. POLYSCIENCES, INC. makes no representations or warranties, either expressed or implied of merchantability, fitness for particular purposes with respect to the information set forth herein or to which the information refers. Accordingly, POLYSCIENCES, INC. will not be responsible for damages resulting from the use of or reliance upon this information.

END OF MSDS
Section 1: Chemical Product and Company Identification
Cat#: 25087D
Part Name: METHENAMINE SOLUTION-GMS SOLN. D
Supplier: Polysciences, Inc.
400 Valley Road
Warrington, PA 18976 USA
Telephone #011-215-343-6484

Section 2: Composition/ Information on Ingredients

<table>
<thead>
<tr>
<th>Item#</th>
<th>Name</th>
<th>CAS#</th>
<th>% in product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,3,5,7-Tetraazatricyclo[3.3.1.13,7]decane</td>
<td>0000100970</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Water</td>
<td>0007732185</td>
<td>97</td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

May be irritant if swallowed
May cause allergic skin reaction.
May cause skin, eye and respiratory tract irritation.

Hazard Ratings:
These ratings are Polysciences' Inc. own assessments of the properties of the material using the ANSI/NFPA 704 Standard. Additional information can be found by consulting in the NFPA published ratings lists (List 325 and List 49).

Health Flammability Reactivity
2 3 1

Section 4: First Aid Measures

Begin rescue breathing if necessary and contact medical personnel.
Contact medical personnel immediately.
Flush eyes with flowing water for at least 15 minutes.
If breathing is difficult, contact emergency personnel.
If swallowed, wash out mouth with water if person is conscious.
Remove contaminated clothing.
Remove to fresh air.
Wash skin with deluge of water for at least 15 minutes.

Section 5: Fire Fighting Measures

Flash point, deg F.: 482F Method: CC
UEL: no data LEL: no data Autoignition temperature, deg. F.: no data
Flammability Classification: no data Flame Propagation Rate: no data
Hazardous Combustion Products: none known

Section 6: Accidental Release Measures

Any information listed below is to be considered in addition to internal guidelines for isolation of spill, containment of spill, removal of ignition sources from immediate area, and collection for disposal of spill by trained, properly protected clean up personnel.

Absorb liquids on absorbent material.
Protect personnel from exposure.
Remove ignition sources.
Use appropriate personal protective equipment.

Section 7: Handling and Storage
Store at 4 deg. C.

Section 8: Exposure Controls/ Personal Protection
The use of eye protection in the form of safety glasses with side shields and the use of skin protection for hands in the form of gloves are considered minimum and non-disccretionary in work places and laboratories. Any recommended personal protection equipment or environmental equipment is to be considered as additional to safety glasses and gloves.

Use chemical splash goggles and face shield.
Use latex or equivalent gloves.
Use process enclosures, local exhaust ventilation, or other engineering controls.
Chemical-resistant gloves should be worn whenever this material is handled. The glove material has to be impermeable and resistant to the product. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. All glove recommendations presume that the risk of exposure is through splash and not intentional immersion of the hands into the product. Since glove permeation data does not exist for this material, no recommendation for the glove material can be given for the product. Permeation data must be obtained from the glove manufacturer to determine if the glove is suitable for the task.

Section 9: Physical and Chemical Properties

Formula: no data
Formula Weight: no data
boiling point: no data
melting point: no data
solubility: no data

vapor pressure: no data
vapor density: no data
Specific gravity: 1
ph: no data
appearance: liquid

Section 10: Stability and Reactivity

Chemical Stability: no data
Conditions to Avoid: no data
Incompatibility with other materials: no data
Hazardous Decomposition Products: none known
Hazardous Polymerization: will not occur

Section 11: Toxicological Information

Acute Data: LD50 oral (mouse) - 569 mg/kg
Subchronic data: no data

Section 12: Ecological Information

no data

Section 13: Disposal Considerations

The following chart lists the status of the chemical and its components in reference to 40 CFR Part 261.33. If the product is listed by code number the substance may be subject to special federal and state disposal regulations. If no codes are listed the material must be disposed in compliance with all Federal, State and Local Regulations.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Waste Code</th>
<th>Regulated Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000100970</td>
<td>not listed</td>
<td>not listed</td>
</tr>
<tr>
<td>0007732185</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Section 14: Transportation Data

Proper Shipping Name: Not Regulated
Chemical Name
UN
Class
PG

Section 15: Regulatory Information

R36/37/38 Irritating to eyes, respiratory system and skin.
R43 May cause sensitization by skin contact.
S47 Keep at temperature not exceeding 4 °C
S7/9 Keep container tightly closed and in a well-ventilated place.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

GHS Precautionary and Hazard Statements

DANGER

WARNING

P281 Use personal protective equipment as required.
P380 Evacuate area.
P381 Eliminate all ignition sources if safe to do so.
P390 Absorb spillage to prevent material damage.
Section 16: Other Information

POLYSCIENCES, INC. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. POLYSCIENCES, INC. makes no representations or warranties, either expressed or implied of merchantability, fitness for particular purposes with respect to the information set forth herein or to which the information refers. Accordingly, POLYSCIENCES, INC. will not be responsible for damages resulting from the use of or reliance upon this information.

END OF MSDS
Material Safety Data Sheet

Section 1: Chemical Product and Company Identification
Cat#: 25087E
Part Name: 5% BORAX SOLUTION-GMS SOLN. E
Supplier: Polysciences, Inc.
400 Valley Road
Warrington, PA 18976 USA
Telephone #011-215-343-6484

Section 2: Composition/ Information on Ingredients
Note: Items listed with a CASRN... number have no CAS# available.

<table>
<thead>
<tr>
<th>Item#</th>
<th>Name</th>
<th>CAS#</th>
<th>% in product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sodium tetraborate decahydrate</td>
<td>0001303964</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Water</td>
<td>0007732185</td>
<td>95</td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

May cause skin, eye and respiratory tract irritation.

Hazard Ratings:
These ratings are Polysciences’ Inc. own assessments of the properties of the material using the ANSI/NFPA 704 Standard.
Additional information can be found by consulting in the NFPA published ratings lists (List 325 and List 49).

If no data is listed the information is not available.

Health Flammability Reactivity
1 0 0

Section 4: First Aid Measures

Contact medical personnel if discomfort persists.
Flush eyes with flowing water for at least 15 minutes.
If breathing is difficult, contact emergency personnel.
If swallowed, wash out mouth with water if person is conscious.
Remove to fresh air.
Wash skin with deluge of water for at least 15 minutes.

Section 5: Fire Fighting Measures

Flash point, deg F.: no data
Method: no data
UEL: no data LEL: no data
Autoignition temperature, deg. F.: no data
Flammability Classification: no data Flame Propagation Rate: no data

Section 6: Accidental Release Measures

Any information listed below is to be considered in addition to internal guidelines for isolation of spill, containment of spill, removal of ignition sources from immediate area, and collection for disposal of spill by trained, properly protected clean up personnel.
Absorb liquids on absorbent material.
Contain spilled liquids.
Use appropriate personal protective equipment.

Section 7: Handling and Storage

Store at room temp

Section 8: Exposure Controls/ Personal Protection

The use of eye protection in the form of safety glasses with side shields and the use of skin protection for hands in the form of gloves are considered minimum and non-discretionary in work places and laboratories. Any recommended personal protection equipment or environmental equipment is to be considered as additional to safety glasses and gloves.
Use chemical splash goggles and face shield.
Use latex or equivalent gloves.

Chemical-resistant gloves should be worn whenever this material is handled. The glove material has to be impermeable and resistant to the product. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. All glove recommendations presume that the risk of exposure is through splash and not intentional immersion of the hands into the product.
Since glove permeation data does not exist for this material, no recommendation for the glove material can be given for the product. Permeation data must be obtained from the glove manufacturer to determine if the glove is suitable for the task.

Section 9: Physical and Chemical Properties
Section 10: Stability and Reactivity

Chemical Stabilit: no data
Conditions to Avoid: no data
Incompatibility with other materials: no data
Hazardous Decomposition Products: none known
Hazardous Polymerization: will not occur

Section 11: Toxicological Information

Acute Data: no data
Subchronic data: no data

Section 12: Ecological Information

no data

Section 13: Disposal Considerations

The following chart lists the status of the chemical and its components in reference to 40 CFR Part 261.33. If the product is listed by code number the substance may be subject to special federal and state disposal regulations. If no codes are listed the material must be disposed in compliance with all Federal, State and Local Regulations.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Waste Code</th>
<th>Regulated Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001303964</td>
<td>not listed</td>
<td>not listed</td>
</tr>
<tr>
<td>0007732185</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Section 14: Transportation Data

Proper Shipping Name: NOT REGULATED

Chemical Name

UN

Class

PG

Section 15: Regulatory Information

R36/37/38 Irritating to eyes, respiratory system and skin.
S0 No S Phrase applies. Use ambient temperature storage and normal chemical controls.
S7/9 Keep container tightly closed and in a well-ventilated place.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

GHS Precautionary and Hazard Statements

WARNING
P281 Use personal protective equipment as required.
P390 Absorb spillage to prevent material damage.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P280A Wear protective gloves
H315 Causes skin irritation.
P301A IF SWALLOWED do not induce vomiting. Do not give anything to drink. Obtain medical attention without delay.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
Section 16: Other Information

POLYSCIENCES, INC. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. POLYSCIENCES, INC. makes no representations or warranties, either expressed or implied of merchantability, fitness for particular purposes with respect to the information set forth herein or to which the information refers. Accordingly, POLYSCIENCES, INC. will not be responsible for damages resulting from the use of or reliance upon this information.

END OF MSDS
Section 1: Chemical Product and Company Identification

Cat#: 25087F
Part Name: 0.2% GOLD CHLORIDE-GMS SOLN. F
Supplier: Polysciences, Inc.
400 Valley Road
Warrington, PA 18976 USA
Telephone #011-215-343-6484

Section 2: Composition/ Information on Ingredients

<table>
<thead>
<tr>
<th>Item#</th>
<th>Name</th>
<th>CAS#</th>
<th>% in product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gold acid chloride trihydrate</td>
<td>0016961254</td>
<td>0.2</td>
</tr>
<tr>
<td>2</td>
<td>Water</td>
<td>0007732185</td>
<td>99.8</td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

Causes skin and eye burns.

Hazard Ratings:
These ratings are Polysciences' Inc. own asssesments of the properties of the material using the ANSI/NFPA 704 Standard. Additional information can be found by consulting in the NFPA published ratings lists (List 325 and List 49).

If no data is listed the information is not available.

Health Flammability Reactivity
3 0 0

Section 4: First Aid Measures

Contact medical personnel immediately.

Flush eyes with flowing water for at least 15 minutes.

If swallowed, wash out mouth with water if person is conscious.

Separate eyelids with finger tips.

Wash skin with deluge of water for at least 15 minutes.

Section 5: Fire Fighting Measures

Flash point, deg F.: no data
UEL: no data
LEL: no data
Autoignition temperature, deg. F.: no data
Flammability Classification: no data
Flame Propagation Rate: no data

Section 6: Accidental Release Measures

Any information listed below is to be considered in addition to internal guidelines for isolation of spill, containment of spill, removal of ignition sources from immediate area, and collection for disposal of spill by trained, properly protected clean up personnel.

Absorb liquids on absorbent material.

Protect personnel from exposure.

Section 7: Handling and Storage

Store at 4 deg. C.

Section 8: Exposure Controls/ Personal Protection

The use of eye protection in the form of safety glasses with side shields and the use of skin protection for hands in the form of gloves are considered minimum and non-discretionary in work places and laboratories. Any recommended personal protection equipment or environmental equipment is to be considered as additional to safety glasses and gloves.

Use chemical splash goggles and face shield.

Use latex or equivalent gloves.

Use process enclosures, local exhaust ventilation, or other engineering controls.

Chemical-resistant gloves should be worn whenever this material is handled. The glove material has to be impermeable and resistant to the product. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. All glove recommendations presume that the risk of exposure is through splash and not intentional immersion of the hands into the product. Since glove permeation data does not exist for this material, no recommendation for the glove material can be given for the product. Permeation data must be obtained from the glove manufacturer to determine if the glove is suitable for the task.

Section 9: Physical and Chemical Properties

Note: Items listed with a CASRN... number have no CAS# available.
Section 10: Stability and Reactivity

Chemical Stability: stable

Conditions to Avoid: none

Incompatibility with other materials: none

Hazardous Decomposition Products: no data

Hazardous Polymerization: will not occur

Section 11: Toxicological Information

Acute Data: no data

Subchronic data: no data

Section 12: Ecological Information

no data

Section 13: Disposal Considerations

The following chart lists the status of the chemical and its components in reference to 40 CFR Part 261.33. If the product is listed by code number the substance may be subject to special federal and state disposal regulations. If no codes are listed the material must be disposed in compliance with all Federal, State and Local Regulations.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Waste Code</th>
<th>Regulated Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>007732185</td>
<td>not listed</td>
<td>not listed</td>
</tr>
<tr>
<td>0016961254</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Section 14: Transportation Data

Proper Shipping Name: NOT REGULATED

Chemical Name

UN

Class

PG

Section 15: Regulatory Information

R34 Causes burns.

S47 Keep at temperature not exceeding 4 °C

S7/9 Keep container tightly closed and in a well-ventilated place.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

GHS Precautionary and Hazard Statements

DANGER

P380 Evacuate area.

P390 Absorb spillage to prevent material damage.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P280A Wear protective gloves

P285 In case of inadequate ventilation wear respiratory protection.

H314 Causes severe skin burns and eye damage.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P305B IF IN EYES, Separate eyelids with finger tips.

P313 Get medical advice/attention.

P315 Get immediate medical advice/attention.

P351 Rinse cautiously with water for several minutes.
Section 16: Other Information

POLYSCIENCES, INC. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. POLYSCIENCES, INC. makes no representations or warranties, either expressed or implied of merchantability, fitness for particular purposes with respect to the information set forth herein or to which the information refers. Accordingly, POLYSCIENCES, INC. will not be responsible for damages resulting from the use of or reliance upon this information.

END OF MSDS
Material Safety Data Sheet

Section 1: Chemical Product and Company Identification

Cat#: 25087G
Part Name: 2% SODIUM THIOSULPHATE-GMS SOLN. G
Supplier: Polysciences, Inc.
400 Valley Road
Warrington, PA 18976 USA
Telephone #011-215-343-6484

Section 2: Composition/ Information on Ingredients

Note: Items listed with a CASRN... number have no CAS# available.

<table>
<thead>
<tr>
<th>Item#</th>
<th>Name</th>
<th>CAS#</th>
<th>% in product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sodium thiosulfate pentahydrate</td>
<td>0010102177</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Water</td>
<td>0007732185</td>
<td>98</td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

Causes eye irritation.

Hazard Ratings:
These ratings are Polysciences Inc.'s own assessments of the properties of the material using the ANSI/NFPA 704 Standard. Additional information can be found by consulting in the NFPA published ratings lists (List 325 and List 49).

If no data is listed the information is not available.

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Section 4: First Aid Measures

Flush eyes with flowing water for at least 15 minutes.
If breathing is difficult, contact emergency personnel.
If swallowed, wash out mouth with water if person is conscious.
Wash skin with deluge of water for at least 15 minutes.

Section 5: Fire Fighting Measures

Flash point, deg F.: no data
Method: no data
UEL: no data
LEL: no data
Autoignition temperature, deg. F.: no data
Flammable Classification: no data
Flame Propagation Rate: no data
Hazardous Combustion Products: no data

Section 6: Accidental Release Measures

Any information listed below is to be considered in addition to internal guidelines for isolation of spill, containment of spill, removal of ignition sources from immediate area, and collection for disposal of spill by trained, properly protected clean up personnel.

Absorb liquids on absorbent material.
Contain spilled liquids.
Protect personnel from exposure.
Use appropriate personal protective equipment.

Section 7: Handling and Storage

Store at room temp

Section 8: Exposure Controls/ Personal Protection

The use of eye protection in the form of safety glasses with side shields and the use of skin protection for hands in the form of gloves are considered minimum and non-discretionary in work places and laboratories. Any recommended personal protection equipment or environmental equipment is to be considered as additional to safety glasses and gloves.

No special protection is indicated.

Chemical-resistant gloves should be worn whenever this material is handled. The glove material has to be impermeable and resistant to the product. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. All glove recommendations presume that the risk of exposure is through splash and not intentional immersion of the hands into the product.

Since glove permeation data does not exist for this material, no recommendation for the glove material can be given for the product. Permeation data must be obtained from the glove manufacturer to determine if the glove is suitable for the task.

Section 9: Physical and Chemical Properties

Page 1 of 3
Section 10: Stability and Reactivity

Chemical Stabilit: stable
Conditions to Avoid: no data
Incompatibility with other materials: no data
Hazardous Decomposition Products: no data
Hazardous Polymerization: will not occur

Section 11: Toxicological Information

Acute Data: no data
Subchronic data: no data

Section 12: Ecological Information

no data

Section 13: Disposal Considerations

The following chart lists the status of the chemical and its components in reference to 40 CFR Part 261.33. If the product is listed by code number the substance may be subject to special federal and state disposal regulations. If no codes are listed the material must be disposed in compliance with all Federal, State and Local Regulations.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Waste Code</th>
<th>Regulated Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0007732185</td>
<td>not listed</td>
<td>not listed</td>
</tr>
<tr>
<td>0010102177</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Section 14: Transportation Data

Proper Shipping Name: NOT REGULATED
Chemical Name
UN
Class
PG

Section 15: Regulatory Information

R36  Irritating to eyes.
S0   No S Phrase applies. Use ambient temperature storage and normal chemical controls.
S7/9  Keep container tightly closed and in a well-ventilated place.
S36/37/39  Wear suitable protective clothing, gloves and eye/face protection.

GHS Precautionary and Hazard Statements

DANGER
P281  Use personal protective equipment as required.
P380  Evacuate area.
P390  Absorb spillage to prevent material damage.
H319  Causes serious eye irritation.
P301A  IF SWALLOWED do not induce vomiting. Do not give anything to drink. Obtain medical attention without delay.
P302+P352  IF ON SKIN: Wash with plenty of soap and water.
P351  Rinse cautiously with water for several minutes.

appearance: clear colorless liquid
**Section 16: Other Information**

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END OF MSDS
Material Safety Data Sheet

Section 1: Chemical Product and Company Identification
Cat#: 25087H
Part Name: 0.5% LIGHT GREEN STOCK SOLN.-GMS SOLN. H
Supplier: Polysciences, Inc.
400 Valley Road
Warrington, PA 18976 USA
Telephone #011-215-343-6484

Issue Date: 05/15/2012
91-155/EEC

Section 2: Composition/ Information on Ingredients
Note: Items listed with a CASRN... number have no CAS# available.

<table>
<thead>
<tr>
<th>Item#</th>
<th>Name</th>
<th>CAS#</th>
<th>% in product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acetic acid</td>
<td>0000064197</td>
<td>0.01</td>
</tr>
<tr>
<td>2</td>
<td>Light green SF yellowish</td>
<td>0005141208</td>
<td>0.19</td>
</tr>
<tr>
<td>3</td>
<td>Water</td>
<td>0007732185</td>
<td>99.8</td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification
Low hazard for usual industrial or commercial handling.

Hazard Ratings:
These ratings are Polysciences' Inc. own assessments of the properties of the material using the ANSI/NFPA 704 Standard.
Additional information can be found by consulting the NFPA published ratings lists (List 325 and List 49).

If no data is listed the information is not available.

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Section 4: First Aid Measures

Flash point, deg F.: no data
Method: no data
UEL: no data
LEL: no data
Autoignition temperature, deg. F.: no data
Flammmability Classification: no data
Flame Propagation Rate: no data
Hazardous Combustion Products: nitrogen compounds; sulfur compounds

Section 5: Fire Fighting Measures

No special measures are indicated.

Section 6: Accidental Release Measures

Any information listed below is to be considered in addition to internal guidelines for isolation of spill, containment of spill, removal of ignition sources from immediate area, and collection for disposal of spill by trained, properly protected clean up personnel.

No special measures are indicated.

Section 7: Handling and Storage
Store at 4 deg. C.

Section 8: Exposure Controls/ Personal Protection

The use of eye protection in the form of safety glasses with side shields and the use of skin protection for hands in the form of gloves are considered minimum and non-discretionary in work places and laboratories. Any recommended personal protection equipment or environmental equipment is to be considered as additional to safety glasses and gloves.

Use process enclosures, local exhaust ventilation, or other engineering controls.

Chemical-resistant gloves should be worn whenever this material is handled. The glove material has to be impermeable and resistant to the product. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. All glove recommendations presume that the risk of exposure is through splash and not intentional immersion of the hands into the product.
Since glove permeation data does not exist for this material, no recommendation for the glove material can be given for the product. Permeation data must be obtained from the glove manufacturer to determine if the glove is suitable for the task.

Section 9: Physical and Chemical Properties

Formula: mixture
Formula Weight: mixture
vapor pressure: no data
vapor density: no data
boiling point: no data
Specific gravity: 1
melting point: no data
ph: no data
solubility: soluble
appearance: CLEAR, COLORLESS, LIQUID

Page 1 of 2
Section 10: Stability and Reactivity
Chemical Stability: stable
Conditions to Avoid: no data
Incompatibility with other materials: no data
Hazardous Decomposition Products: no data
Hazardous Polymerization: will not occur

Section 11: Toxicological Information
Acute Data: LD50 oral rat >2 grams/Kg
Subchronic data: IARC cancer review - animal limited evidence; human no adequate evidence; reproductive effector

Section 12: Ecological Information
no data

Section 13: Disposal Considerations
The following chart lists the status of the chemical and its components in reference to 40 CFR Part 261.33. If the product is listed by code number the substance may be subject to special federal and state disposal regulations. If no codes are listed the material must be disposed in compliance with all Federal, State and Local Regulations.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Waste Code</th>
<th>Regulated Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000064197</td>
<td>not listed</td>
<td>not listed</td>
</tr>
<tr>
<td>0005141208</td>
<td>not listed</td>
<td>not listed</td>
</tr>
<tr>
<td>0007732185</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Section 14: Transportation Data
Proper Shipping Name: NOT REGULATED
Chemical Name
UN
Class
PG

Section 15: Regulatory Information
R0 No R risk phrase applies use normal chemical controls
S47 Keep at temperature not exceeding 4 °C
S7/9 Keep container tightly closed and in a well-ventilated place.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

GHS Precautionary and Hazard Statements
P285 In case of inadequate ventilation wear respiratory protection.
H000 Low hazard for normal industrial use

Section 16: Other Information
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END OF MSDS