1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Bluing Reagent
Cat No.: 7301, 7341
Synonyms: No information available.
Recommended Use: Laboratory chemicals

Company: Richard Allan Scientific
A Subsidiary of Thermo Fisher Scientific
4481 Campus Drive
Kalamazoo, MI 49008
Tel: (800) 522-7270

Emergency Telephone Number
Chemtrec US: (800) 424-9300
Chemtrec EU: (202) 483-7616

2. HAZARDS IDENTIFICATION

CAUTION!

May cause eye, skin, and respiratory tract irritation. The toxicological properties have not been fully investigated.

Appearance: White
Physical State: Liquid
odor: No information available

Target Organs: Liver

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes: May cause irritation.
Skin: May cause irritation. May be harmful in contact with skin.
Inhalation: May cause irritation of respiratory tract. May be harmful if inhaled.
Ingestion: May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects: Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions: No information available.
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Haz/Non-haz</th>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Water</td>
<td>7732-18-5</td>
<td>98+</td>
</tr>
<tr>
<td></td>
<td>Magnesium sulfate</td>
<td>7487-88-9</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Sodium bicarbonate</td>
<td>144-55-8</td>
<td>&lt; 1.0</td>
</tr>
<tr>
<td></td>
<td>1-Tetradecanaminium, N,N,N-trimethyl-, bromide</td>
<td>1119-97-7</td>
<td>&lt; 0.1</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eye Contact  
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact  
Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Inhalation  
Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

Ingestion  
Do not induce vomiting. Obtain medical attention.

Notes to Physician  
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point  
No information available.
Method  
No information available.

Autoignition Temperature  
No information available.

Explosion Limits  
Upper  
No data available
Lower  
No data available

Suitable Extinguishing Media  
Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Unsuitable Extinguishing Media  
No information available.

Hazardous Combustion Products  
No information available.

Sensitivity to mechanical impact  
No information available.

Sensitivity to static discharge  
No information available.

Specific Hazards Arising from the Chemical  
Thermal decomposition can lead to release of irritating gases and vapors.

Protective Equipment and Precautions for Firefighters  
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>
6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

Environmental Precautions
Should not be released into the environment.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Keep in suitable and closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Wear personal protective equipment. Ensure adequate ventilation. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

**Eye/face Protection**
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

**Skin and body protection**
Wear appropriate protective gloves and clothing to prevent skin exposure

**Respiratory Protection**
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

9. PHYSICAL AND CHEMICAL PROPERTIES

| Physical State | Liquid |
| Appearance | White |
| odor | No information available |
| Odor Threshold | No information available. |
| pH | No information available. |
| Vapor Pressure | No information available. |
| Vapor Density | No information available. |
| Viscosity | No information available. |
| Boiling Point/Range | No information available. |
| Melting Point/Range | No information available. |
| Decomposition temperature °C | No information available. |
| Flash Point | No information available. |
| Evaporation Rate | No information available. |
| Specific Gravity | No information available. |
| Solubility | No information available. |
| log Pow | No data available |
10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid
Incompatible products. Excess heat.

Incompatible Materials
Strong oxidizing agents

Hazardous Decomposition Products
Carbon monoxide (CO), Carbon dioxide (CO₂), Sulfur oxides

Hazardous Polymerization
Hazardous polymerization does not occur

Hazardous Reactions
None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information
No acute toxicity information is available for this product

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD₅₀ Oral Oral</th>
<th>LD₅₀ Dermal</th>
<th>LC₅₀ Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bicarbonate</td>
<td>4220 mg/kg ( Rat )</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>1-Tetradecanaminium, N,N,N-trimethyl-, bromide</td>
<td>3900 mg/kg ( Rat )</td>
<td>Not listed</td>
<td>Not listed</td>
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</tbody>
</table>

Irritation
No information available.

Toxicologically Synergistic Products
No information available.

Chronic Toxicity

Carcinogenicity
There are no known carcinogenic chemicals in this product

Sensitization
No information available.

Mutagenic Effects
Mutagenic effects have occurred in experimental animals.

Reproductive Effects
Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects
Developmental effects have occurred in experimental animals.

Teratogenicity
Teratogenic effects have occurred in humans.

Other Adverse Effects
The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

Endocrine Disruptor Information
No information available
12. ECOLOGICAL INFORMATION

Ecotoxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium sulfate</td>
<td>EC50 72 h 2700 mg/L</td>
<td>Not listed</td>
<td>= 84000 mg/L; EC50 Photobacterium phosphoreum 30 min</td>
<td>EC50 24 h 1700 mg/L</td>
</tr>
<tr>
<td>Sodium bicarbonate</td>
<td>EC50: 650 mg/L/120h</td>
<td>Not listed</td>
<td>Not listed</td>
<td>EC50: 2350 mg/L/48h</td>
</tr>
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</table>

Persistence and Degradability
No information available

Bioaccumulation/Accumulation
No information available

Mobility

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>-1.87</td>
</tr>
</tbody>
</table>

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT
Not regulated

TDG
Not regulated

IATA
Not regulated

IMDG/IMO
Not regulated

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>CHINA</th>
<th>KECL</th>
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<tbody>
<tr>
<td>Water</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
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### 15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>Substance</th>
<th>X</th>
<th>X</th>
<th>-</th>
<th>KE-22752</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>KE-31360</th>
<th>X</th>
<th>KE-34687</th>
<th>X</th>
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</thead>
<tbody>
<tr>
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<td>X</td>
<td>X</td>
<td>-</td>
<td>231-298-2</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Sodium bicarbonate</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>205-633-8</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1-Tetradecanaminium, N,N,N-trimethyl-, bromide</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>214-291-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend:

- X - Listed
- E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
- F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
- N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
- P - Indicates a commenced PMN substance
- R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
- S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
- T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
- XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).)
- Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
- Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

**TSCA 12(b)** Not applicable

**SARA 313**

Not applicable

**SARA 311/312 Hazardous Categorization**

- **Acute Health Hazard**: No
- **Chronic Health Hazard**: No
- **Fire Hazard**: No
- **Sudden Release of Pressure Hazard**: No
- **Reactive Hazard**: No

**Clean Water Act**

Not applicable

**Clean Air Act**

Not applicable

**OSHA**

Not applicable

**CERCLA**

Not Applicable

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.
State Right-to-Know
Not applicable

U.S. Department of Transportation
Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations
Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
Non-controlled

16. OTHER INFORMATION

Prepared By Avantik
36 Commerce St.
Springfield, NJ 07081-0619
Toll Free: 800.783.9424
www.avantik-us.com

Creation Date 05-Apr-2010
Print Date 05-Apr-2010

Revision Summary "***", and red text indicates revision

Disclaimer
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