1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier
Product Name United 320 Hot Water Boiler Treatment

Other means of identification
SDS # UNITED-320
UN/ID No UN3093

Recommended Use of the chemical and restrictions on use
Recommended Use Hot water boiler treatment.
Uses Advised Against For industrial and institutional use only.

Details of the supplier of the safety data sheet
Supplier Address
United Laboratories, Inc.
320 37th Avenue
St. Charles, IL 60174
www.unitedlabsinc.com
www.unitedlabsinc.ca

Emergency Telephone Number
Company Phone Number 800-323-2594 (to reorder)
Emergency Telephone (24 hr) INFOTRAC 1-800-535-5053 (North America)
1-352-323-3500 (International)

2. HAZARDS IDENTIFICATION

Appearance Brown liquid
Physical State Liquid
Odor Slight, medicinal odor

Classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 4</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation (Dusts/Mists)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1 Sub-category B</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Category 1B</td>
</tr>
<tr>
<td>Oxidizing Liquids</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

Signal Word
Danger

Hazard Statements
Harmful if swallowed. Fatal if inhaled. Causes severe skin burns and eye damage. May cause cancer. May intensify fire; oxidizer.
Precautionary Statements - Prevention
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapors/spray. Keep away from heat/sparks/open flames/hot surfaces. — No smoking

Precautionary Statements - Response
Immediately call a poison center or doctor/physician. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician. If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician. If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting. In case of fire: Use CO2, dry chemical, or foam for extinction.

Precautionary Statements - Storage
Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other Hazards
Toxic to aquatic life with long lasting effects.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Nitrite</td>
<td>7632-00-0</td>
<td>1-10</td>
</tr>
<tr>
<td>Sodium Molybdate</td>
<td>7631-95-0</td>
<td>1-10</td>
</tr>
</tbody>
</table>

**If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.**

### 4. FIRST-AID MEASURES

**First Aid Measures**

**General Advice**
Immediately call a poison center or doctor/physician.

**Eye Contact**
Immediately flush with plenty of water for at least 15 minutes while holding eyelids open. Immediately call a poison center or doctor/physician.

**Skin Contact**
Wash with soap and water. If irritation persists, call a physician or poison control center. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Apply CPR if needed. Immediately call a poison center or doctor/physician.

**Inhalation**
Call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person.
Most important symptoms and effects

**Symptoms**
Harmful if swallowed. Fatal if inhaled. Causes severe skin burns and eye damage. May cause cancer.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician**
Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
Water. Foam. Carbon dioxide (CO2).

**Unsuitable Extinguishing Media**
No information available.

**Specific Hazards Arising from the Chemical**
This product is a water solution of sodium nitrite, a strong oxidizer. Residue left after product evaporation may give off nitrogen oxide fumes or may cause other materials to spontaneously ignite or burn more vigorously than normal.

**Hazardous Combustion Products**
When strongly heated, as in a fire, this product may produce carbon dioxide, carbon monoxide and oxides of nitrogen.

**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.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions**
Use personal protective equipment as required.

**Environmental Precautions**
See Section 12 for additional Ecological Information.

**Methods and material for containment and cleaning up**

**Methods for Containment**
Prevent further leakage or spillage if safe to do so.

**Methods for Clean-Up**
Eliminate all sources of ignition. Clean up with a non-flammable absorbent such as clay or vermiculite and place in a labeled, closed metal container for proper disposal.

### 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on Safe Handling**
Handle in accordance with good industrial hygiene and safety practice. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wear respiratory protection.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**
Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep away from flammables. Store away from incompatible materials.

**Incompatible Materials**
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Molybdate</td>
<td>TWA: 0.5 mg/m³ Mo respirable</td>
<td>TWA: 5 mg/m³ Mo</td>
<td>IDLH: 1000 mg/m³</td>
</tr>
<tr>
<td>7631-95-0</td>
<td>fraction</td>
<td>(vacated)</td>
<td>Mo</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering Controls  Provide adequate ventilation and local exhaust is generally adequate.

Individual protection measures, such as personal protective equipment

Eye/Face Protection  Chemical safety goggles are recommended.

Skin and Body Protection  Chemical resistant gloves are recommended. Long sleeve shirt and long pants.

Respiratory Protection  Ensure adequate ventilation, especially in confined areas. In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment.

General Hygiene Considerations  Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Brown liquid</td>
<td>Odor</td>
</tr>
<tr>
<td>Color</td>
<td>Brown</td>
<td>Slight, medicinal odor</td>
</tr>
<tr>
<td>pH</td>
<td>11.5-12.5</td>
<td></td>
</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>Boiling Point/Boiling Range</td>
<td>100 °C / 212 °F</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>~1.0</td>
<td></td>
</tr>
<tr>
<td>Flammability (Solid, Gas)</td>
<td>Liquid-Not applicable</td>
<td></td>
</tr>
<tr>
<td>Upper Flammability Limits</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>Lower Flammability Limit</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.065</td>
<td>(Water = 1)</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Completely soluble</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>Dynamic Viscosity</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No information available.</td>
<td></td>
</tr>
<tr>
<td>VOC Content</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity  Not reactive under normal conditions.
Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to Avoid
Incompatible Materials.

Incompatible Materials

Hazardous Decomposition Products
When strongly heated, as in a fire, this product produces carbon dioxide, carbon monoxide and oxides of nitrogen.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes severe eye damage.
Skin Contact Causes severe skin burns.
Inhalation Fatal if inhaled.
Ingestion Harmful if swallowed.

Component Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Nitrite</td>
<td>85 mg/kg</td>
<td>-</td>
<td>5.5 mg/L (Rat) 4 h</td>
</tr>
<tr>
<td>7632-00-0</td>
<td>(Rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Molybdate</td>
<td>4 g/kg</td>
<td>-</td>
<td>&gt; 2080 mg/m³ (Rat) 4 h</td>
</tr>
<tr>
<td>7631-95-0</td>
<td>(Rat)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Information on physical, chemical and toxicological effects

Symptoms Please see Section 4 of this SDS for symptoms

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity May cause cancer.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Nitrite</td>
<td>Group 2A</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>7632-00-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Molybdate</td>
<td>A3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7631-95-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend
ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 2A - Probably Carcinogenic to Humans
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Numerical measures of toxicity
No information available.
12. ECOLOGICAL INFORMATION

Ecotoxicity
No information available.

Persistence/Degradability
No information available.

Bioaccumulation
No information available.

Mobility
No information available.

Other Adverse Effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging
Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Hazardous Waste Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Nitrite</td>
<td>Toxic</td>
</tr>
<tr>
<td>7632-00-0</td>
<td>Ignitable</td>
</tr>
<tr>
<td>7631-95-0</td>
<td>Reactive</td>
</tr>
<tr>
<td>Sodium Molybdate</td>
<td>Toxic</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

Note
Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No: UN3093
Proper Shipping Name: Corrosive liquid, oxidizing, n.o.s. (Sodium nitrite, potassium hydroxide)
Hazard Class: 8 (5.1)
Packing Group: II

IATA

UN/ID No: UN3093
Proper Shipping Name: Corrosive liquid, oxidizing, n.o.s. (Sodium nitrite, potassium hydroxide)
Hazard Class: 8 (5.1)
Packing Group: II

IMDG

UN/ID No: UN3093
Proper Shipping Name: Corrosive liquid, oxidizing, n.o.s. (Sodium nitrite, potassium hydroxide)
Hazard Class: 8 (5.1)
Packing Group: II
Marine Pollutant  This material may meet the definition of a marine pollutant

### 15. REGULATORY INFORMATION

#### International Inventories

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDCL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Nitrite</td>
<td>Present</td>
<td>X</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
<td>X</td>
<td>Present</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Sodium Molybdate</td>
<td>Present</td>
<td>X</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
<td>X</td>
<td>Present</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- **TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
- **DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
- **EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
- **ENCS** - Japan Existing and New Chemical Substances
- **IECSC** - China Inventory of Existing Chemical Substances
- **KECL** - Korean Existing and Evaluated Chemical Substances
- **PICCS** - Philippines Inventory of Chemicals and Chemical Substances
- **AICS** - Australian Inventory of Chemical Substances

#### US Federal Regulations

**SARA 313**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Nitrite - 7632-00-0</td>
<td>7632-00-0</td>
<td>6.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### US State Regulations

**U.S. State Right-to-Know Regulations**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Nitrite - 7632-00-0</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

### 16. OTHER INFORMATION

#### NFPA

<table>
<thead>
<tr>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Special Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>No information available</td>
<td>No information available</td>
<td>No information available</td>
<td>No information available</td>
</tr>
</tbody>
</table>

#### HMIS

<table>
<thead>
<tr>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Physical Hazards</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>N+P</td>
</tr>
</tbody>
</table>

**Issue Date:** 04-Sep-2014
**Revision Date:** 07-Sep-2016
**Revision Note:** New format

**Disclaimer**
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

*End of Safety Data Sheet*