



## Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS)

### SECTION 1: Identification

#### 1.1. Product Identifier

**Trade Name or Designation:** Alkaline-Iodide-Azide, Alsterberg Formulation  
for Dissolved Oxygen (DO) Analysis

**Product Number:** 540

**Other Identifying Product Numbers:** 540-1, 540-16, 540-32

#### 1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

#### 1.3. Details of the Supplier of the Safety Data Sheet

**Company:** Ricca Chemical Company

**Address:** 448 West Fork Drive

Arlington, TX 76012 USA

**Telephone:** 888-467-4222

#### 1.4. Emergency Telephone Number (24 hours)

CHEMTREC (USA) 800-424-9300

CHEMTREC (International) 1+ 703-527-3887

# Safety Data Sheet

## SECTION 2: Hazard(s) Identification

### 2.1. Classification of the Substance or Mixture

For the full text of the Hazard and Precautionary Statements listed below, see Section 16.

| Hazard Class                                                         | Category    | Hazard Statements | Precautionary Statements:                                                                                 |
|----------------------------------------------------------------------|-------------|-------------------|-----------------------------------------------------------------------------------------------------------|
| Acute Toxicity - Oral                                                | Category 4  | H302              | P264, P270, P301+P312, P330, P501                                                                         |
| Acute Toxicity - Dermal                                              | Category 3  | H311              | P280, P302+P352, P312, P321, P361, P405, P501                                                             |
| Skin Corrosion / Irritation                                          | Category 1A | H314              | P260, P264, P280, P301+P330+P331, P303+P361+P353, P363, P304+P340, P310, P321, P305+P351+P338, P405, P501 |
| Eye Damage / Irritation                                              | Category 1  | H318              | P280, P305+P351+P338, P310                                                                                |
| Skin Sensitizer                                                      | Category 1  | H317              | P261, P272, P280, P302+P352, P332+P313, P321, P363, P501                                                  |
| Reproductive Toxicity                                                | Category 2  | H361              | P201, P202, P280, P308+P313, P405, P501                                                                   |
| Specific Target Organs/Systemic Toxicity Following Single Exposure   | Category 1  | H370              | P260, P264, P270, P307+P311, P321, P405, P501                                                             |
| Specific Target Organs/Systemic Toxicity Following Repeated Exposure | Category 1  | H372              | P260, P264, P270, P314, P501                                                                              |
| Corrosive to Metals                                                  | Category 1  | H290              | P234, P390, P406                                                                                          |
| Hazardous to the Aquatic Environment (Acute)                         | Category 3  | H402              | P273, P501                                                                                                |
| Hazardous to the Aquatic Environment (Chronic)                       | Category 3  | H402              | P273, P501                                                                                                |

### 2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**



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### Hazard Statements:

| Hazard Number | Hazard Statement                                                |
|---------------|-----------------------------------------------------------------|
| H290          | May be corrosive to metals.                                     |
| H302          | Harmful if swallowed.                                           |
| H311          | Toxic in contact with skin.                                     |
| H314          | Causes severe skin burns and eye damage.                        |
| H317          | May cause an allergic skin reaction.                            |
| H318          | Causes serious eye damage.                                      |
| H361          | Suspected of damaging fertility or the unborn child.            |
| H370          | Causes damage to organs.                                        |
| H372          | Causes damage to organs through prolonged or repeated exposure. |
| H402          | Harmful to aquatic life.                                        |

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### Precautionary Statements:

| Precautionary Number | Precautionary Statement                                                                                            |
|----------------------|--------------------------------------------------------------------------------------------------------------------|
| P201                 | Obtain special instructions before use.                                                                            |
| P202                 | Do not handle until all safety precautions have been read and understood.                                          |
| P234                 | Keep only in original container.                                                                                   |
| P260                 | Do not breathe fumes, mist, vapors, or spray.                                                                      |
| P261                 | Avoid breathing fumes, mist, vapors, or spray.                                                                     |
| P264                 | Wash arms, hands and face thoroughly after handling.                                                               |
| P270                 | Do not eat, drink or smoke when using this product.                                                                |
| P272                 | Contaminated work clothing must not be allowed out of the workplace.                                               |
| P273                 | Avoid release to the environment.                                                                                  |
| P280                 | Wear protective gloves and eye protection.                                                                         |
| P301+P312            | IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.                                                |
| P301+P330+P331       | IF SWALLOWED: rinse mouth. Do NOT induce vomiting.                                                                 |
| P302+P352            | IF ON SKIN: Wash with plenty of soap and water.                                                                    |
| P303+P361+P353       | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.                       |
| P304+P340            | IF INHALED: Remove person to fresh air and keep comfortable for breathing.                                         |
| P305+P351+P338       | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to remove. |
| P307+P311            | IF exposed: Call a POISON CENTER or physician.                                                                     |
| P308+P313            | IF exposed or concerned: Get medical attention.                                                                    |
| P310                 | Immediately call a POISON CENTER or physician.                                                                     |
| P312                 | Call a POISON CENTER or physician if you feel unwell.                                                              |
| P314                 | Get medical attention if you feel unwell.                                                                          |
| P321                 | Specific treatment (Wash areas of contact with water immediately).                                                 |
| P330                 | Rinse mouth.                                                                                                       |
| P332+P313            | If skin irritation occurs: Get medical attention.                                                                  |
| P361                 | Take off immediately all contaminated clothing and wash it before reuse.                                           |
| P363                 | Wash contaminated clothing before reuse.                                                                           |
| P390                 | Absorb spillage to prevent material damage.                                                                        |
| P405                 | Store locked up.                                                                                                   |
| P406                 | Store in corrosive resistant container with a resistant inner liner.                                               |
| P501                 | Dispose of contents in accordance with local, state, federal and international regulations.                        |

### 2.4. Hazards not Otherwise Classified or Covered by GHS

Data not available.

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## SECTION 3: Composition / Information on Ingredients

### 3.1. Components of Substance or Mixture

| Chemical Name    | Formula          | Molecular Weight | CAS Number | Weight% |
|------------------|------------------|------------------|------------|---------|
| Water            | H <sub>2</sub> O | 18.01 g/mol      | 7732-18-5  | 64.38   |
| Sodium Hydroxide | NaOH             | 39.99 g/mol      | 1310-73-2  | 27.01   |
| Potassium Iodide | KI               | 166.00 g/mol     | 7681-11-0  | 8.08    |
| Sodium Azide     | NaN <sub>3</sub> | 65.00 g/mol      | 26628-22-8 | 0.54    |

## SECTION 4: First-Aid Measures

### 4.1. General First Aid Information

**Eye Contact:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Corrosive! Causes irritation and burns. Can cause burns that may lead to permanent impairment of vision, including blindness.

**Inhalation:** IF INHALED: Remove person to fresh air and keep comfortable for breathing.

**Skin Contact:** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Causes severe burns.

**Ingestion:** IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Do not induce vomiting. Give large quantity of water. Call a physician immediately.

### 4.2. Most Important Symptoms and Effects, Acute and Delayed

Harmful if swallowed. Toxic in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. Suspected of damaging fertility or the unborn child. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure. CAUTION! Corrosive. Causes severe burns. May be fatal if swallowed. Harmful if inhaled. Wash areas of contact with water for at least 15 minutes. Call a physician if irritation develops. If ingested, dilute with water and call a physician. Do not induce vomiting. For eyes, flush out with plenty of water for at least 15 minutes. Call a physician. Reacts violently with acids. EYE CONTACT: Corrosive! Causes irritation and burns. Can cause burns that may lead to permanent impairment of vision, including blindness. SKIN CONTACT: Causes severe burns. CHRONIC EFFECTS / CARCINOGENICITY: Repeated exposures to Sodium Hydroxide solutions has a destructive effect on tissue.

### 4.3. Medical Attention or Special Treatment Needed

Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately).

## SECTION 5: Fire-Fighting Measures

### 5.1. Extinguishing Media

Use extinguishing media appropriate for surrounding fire.

### 5.2. Specific Hazards Arising from the Substance or Mixture

Not combustible.

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### 5.3. Special Protective Equipment for Firefighters

Wear special protective clothing and positive pressure self-contained breathing apparatus. Butyl rubber, natural rubber, Neoprene, nitrile rubber, polyethylene, polyvinyl chloride, Teflon, Viton, or Saranex barrier recommended.

## SECTION 6: Accidental Release Measures

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Wear protective gloves and eye protection.

### 6.2. Cleanup and Containment Methods and Materials

Keep water away from release. Stop or control the leak, if this can be done without undue risk. Prompt cleanup and removal are necessary. Shovel into suitable dry container. Control runoff and isolate discharged material for proper disposal.

## SECTION 7: Handling and Storage

### 7.1. Precautions for Safe Handling and Storage Conditions

Store in corrosive resistant container with a resistant inner liner. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Do not mix with acids. Contact with acid generates toxic Hydrazoic Acid fumes.

## SECTION 8: Exposure Controls / Personal Protection

### 8.1 Control Parameters

| Chemical Name                | Limit Type  | Country | Exposure Limit                                                                                        | Information Source                                                |
|------------------------------|-------------|---------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Sodium Hydroxide (1310-73-2) | TWA         | USA     | 2 mg/m <sup>3</sup> TWA                                                                               | U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)          |
| Sodium Hydroxide (1310-73-2) | TLV-Ceiling | USA     | 2 mg/m <sup>3</sup> Ceiling                                                                           | ACGIH - Threshold Limit Values - Ceilings (TLV-C)                 |
| Sodium Azide (26628-22-8)    | TLV-Ceiling | USA     | 0.29 mg/m <sup>3</sup> Ceiling (as NaN <sub>3</sub> );<br>0.11 ppm Ceiling (vapor, as Hydrazoic acid) | ACGIH - Threshold Limit Values - Ceilings (TLV-C)                 |
| Potassium Iodide (7681-11-0) | TLV-TWA     | USA     | 0.01 ppm TWA (inhalable fraction and vapor)                                                           | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA) |

### 8.2. Exposure Controls

**Engineering Controls:** No specific controls are needed. Normal room ventilation is adequate.

**Respiratory Protection:** Normal room ventilation is adequate.

**Skin Protection:** Wear protective gloves and eye protection. Chemical resistant gloves.

**Eye Protection:** Wear protective gloves and eye protection. Safety glasses or goggles.

### 8.3. Personal Protective Equipment

Wear protective gloves and eye protection. Normal room ventilation is adequate. Chemical resistant gloves. Safety glasses or goggles.

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### SECTION 9: Physical and Chemical Properties

#### 9.1. Basic Physical and Chemical Properties

**Appearance:** Colorless liquid

**Physical State:** Liquid

**Odor:** Data not available.

**Odor Threshold:** Data not available.

**pH:** > 13

**Melting/Freezing Point:** Data not available.

**Initial Boiling Point/Range:** Approximately 104°C - Approximately 104°C

**Flash Point:** Data not available.

**Evaporation Rate:** Data not available.

**Flammability:** Data not available.

**Flammability/Explosive Limits:** Data not available.

**Vapor Pressure:** Data not available.

**Vapor Density:** Data not available.

**Relative Density:** 1.55

**Solubility:** Miscible

**Partition Coefficient:** Data not available.

**Auto-Ignition Temperature:** Data not available.

**Decomposition Temperature:** Data not available.

**Viscosity:** Data not available.

**Explosive Properties:** Data not available.

**Oxidizing Properties:** Data not available.

### SECTION 10: Stability and Reactivity

#### 10.1. Reactivity and Chemical Stability

Data not available.

#### 10.2. Possibility of Hazardous Reactions

Data not available.

#### 10.3. Conditions to Avoid and Incompatible Materials

Keep only in original container. Acids, organic halogen compounds, metals such as aluminum, tin and zinc.

#### 10.4. Hazardous Decomposition Products

Will not occur.

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## SECTION 11: Toxicological Information

### 11.1. Information on Toxicological Effects

**Acute Toxicity - Oral Exposure:**

Harmful if swallowed. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. Dispose of contents in accordance with local, state, federal and international regulations.

**Acute Toxicity - Dermal Exposure:**

Toxic in contact with skin. Wear protective gloves and eye protection. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Specific treatment (Wash areas of contact with water immediately). Take off immediately all contaminated clothing and wash it before reuse. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Acute Toxicity - Inhalation Exposure:**

Not applicable.

**Acute Toxicity - Other Information:**

LD50, Oral, Rat: (Sodium Azide) 27 mg/kg, details of toxic effects not reported other than lethal dose value. Irritation data (Sodium Hydroxide): skin, rabbit: 500 mg/24H severe; eye, rabbit: 50 g/24H severe. Investigated as a mutagen (Potassium Iodide, Sodium Azide and Sodium Hydroxide).

**Skin Corrosion and Irritation:**

Causes severe skin burns and eye damage. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Serious Eye Damage and Irritation:**

Causes serious eye damage. Wear protective gloves and eye protection. 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 physician.

**Respiratory Sensitization:**

Not applicable.

**Skin Sensitization:**

May cause an allergic skin reaction. Avoid breathing fumes, mist, vapors, or spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves and eye protection. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical attention. Specific treatment (Wash areas of contact with water immediately). Wash contaminated clothing before reuse. Dispose of contents in accordance with local, state, federal and international regulations.

**Germ Cell Mutagenicity:**

Not applicable.

**Carcinogenicity:**

Not applicable.



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**Reproductive Toxicity:**

Suspected of damaging fertility or the unborn child. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Specific Target Organ Toxicity from Single Exposure:**

Causes damage to organs. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. IF exposed: Call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Specific Target Organ Toxicity from Repeated Exposure:**

Causes damage to organs through prolonged or repeated exposure. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Get medical attention if you feel unwell. Dispose of contents in accordance with local, state, federal and international regulations.

**Aspiration Hazard:**

Not applicable.

**Additional Toxicology Information:**

Data not available.

### SECTION 12: Ecological Information

**12.1. Ecotoxicity**

Harmful to aquatic life. Avoid release to the environment. Dispose of contents in accordance with local, state, federal and international regulations.

**12.2. Persistence and Degradability**

Data not available.

**12.3. Bioaccumulative Potential**

Data not available.

**12.4. Mobility in Soil**

Data not available.

**12.5. Other Adverse Ecological Effects**

Data not available.

### SECTION 13: Disposal Considerations

**13.1. Waste Treatment Methods**

Data not available.

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### SECTION 14: Transportation Information

#### 14.1. Transportation by Land-Department of Transportation (DOT, United States of America)

**Sizes:** 1 L, 4 L, 500 mL

**UN Number:** UN1824

**Proper Shipping Name:** Sodium Hydroxide Solution

**Hazard Class:** 8

**Packing Group:** II

**Hazard Label(s):**



#### 14.2. Transportation by Air - International Air Transport Association (IATA)

**Sizes:** 1 L, 4 L, 500 mL

**UN Number:** UN1824

**Proper Shipping Name:** Sodium Hydroxide Solution

**Hazard Class:** 8

**Packing Group:** II

**Hazard Label(s):**



#### 14.3 Transportation of Dangerous Goods (TDG, Canada)

**Sizes:** 1 L, 4 L, 500 mL

**UN Number:** UN1824

**Proper Shipping Name:** SODIUM HYDROXIDE SOLUTION

**Hazard Class:** 8

**Packing Group:** II

**Hazard Label(s):**



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## SECTION 15: Regulatory Information

### 15.1. Occupational Safety and Health Administration (OSHA) Hazards

Not listed.

### 15.2. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

Sodium Azide (CAS # 26628-22-8): 1000 lb EPCRA RQ

Sodium Azide (CAS # 26628-22-8): 500 lb TPQ (This material is a reactive solid. The TPQ does not default to 10000 pounds for non-powder, non-molten, non-solution form)

### 15.3. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Sodium Hydroxide (CAS # 1310-73-2): 1000 lb final RQ; 454 kg final RQ

Sodium Azide (CAS # 26628-22-8): 1000 lb final RQ; 454 kg final RQ

### 15.4. Superfund Amendments and Reauthorization Act (SARA) 313 Toxic Release Inventory (TRI)

Sodium Azide (CAS # 26628-22-8): 1.0 % de minimis concentration

### 15.5. Massachusetts Right-to-Know Substance List

Sodium Hydroxide (CAS # 1310-73-2): Present

Sodium Azide (CAS # 26628-22-8): Extraordinarily hazardous

### 15.6. Pennsylvania Right-to-Know Hazardous Substances

Sodium Hydroxide (CAS # 1310-73-2): Environmental hazard

Sodium Hydroxide (CAS # 1310-73-2): Present

Sodium Azide (CAS # 26628-22-8): Environmental hazard

Sodium Azide (CAS # 26628-22-8): Present

Water (CAS # 7732-18-5): Present

### 15.7. New Jersey Worker and Community Right-to-Know Components

Sodium Hydroxide (CAS # 1310-73-2): corrosive

Sodium Hydroxide (CAS # 1310-73-2): sn 1706

Sodium Azide (CAS # 26628-22-8): reactive - third degree

Sodium Azide (CAS # 26628-22-8): sn 1684

Sodium Azide (CAS # 26628-22-8): SN 1684 500 lb TPQ

### 15.8. California Proposition 65

Not listed.

### 15.9. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDL)

Sodium Hydroxide (CAS # 1310-73-2): Present (DSL)

Sodium Azide (CAS # 26628-22-8): Present (DSL)

Potassium Iodide (CAS # 7681-11-0): Present (DSL)

Water (CAS # 7732-18-5): Present (DSL)

### 15.10. United States of America Toxic Substances Control Act (TSCA) List

Sodium Hydroxide (CAS # 1310-73-2): Active

Sodium Azide (CAS # 26628-22-8): Active

Potassium Iodide (CAS # 7681-11-0): Active

Water (CAS # 7732-18-5): Active

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### 15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Not listed.

## SECTION 16: Other Information

### 16.1. Full Text of Hazard Statements and Precautionary Statements

May be corrosive to metals. Harmful if swallowed. Toxic in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. Suspected of damaging fertility or the unborn child. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure. Harmful to aquatic life.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original container. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves and eye protection.

IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed: Call a POISON CENTER or physician. Get medical attention if you feel unwell. Specific treatment (Wash areas of contact with water immediately). If skin irritation occurs: Get medical attention. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.

Store locked up. Store in corrosive resistant container with a resistant inner liner.

Dispose of contents in accordance with local, state, federal and international regulations.

### 16.2. Miscellaneous Hazard Classes

**Canadian Carcinogenicity Hazard Class:** Not Applicable.

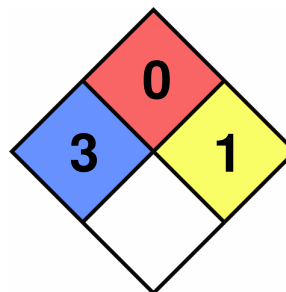
**Physical Hazards Not Otherwise Classified (PHNOC):** Not Applicable.

**Health Hazards Not Otherwise Classified (HHNOC):** Not Applicable.

**Biohazardous Infectious Materials Hazard Class:** Not Applicable.

### 16.3. National Fire Protection Association (NFPA) Rating

**Health:** 3  
**Flammability:** 0  
**Reactivity:** 1  
**Special Hazard:**



## Safety Data Sheet

### 16.4. Document Revision

**Last Revision Date:** 2020-04-29

#### DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.