

## Safety Data Sheet

### SECTION 1: Identification

#### 1.1. Product Identifier

**Trade Name or Designation:** Chloride Color Reagent  
for Chloride Determination by the Automated Ferricyanide Method

**Product Number:** 1940

**Other Identifying Product Numbers:** 1940-1, 1940-16, 1940-32

#### 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 hr)

CHEMTREC (USA) 800-424-9300  
CHEMTREC (International) 1+ 703-527-3887

### SECTION 2: Hazard(s) Identification

#### 2.1. Classification of the Substance or Mixture (in accordance with OSHA HCS 29 CFR 1910.1200)

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

Hazard Class	Category	Hazard Statement	Precautionary Statements
Acute Toxicity - Oral	Category 4	H302	P264, P270, P301+P312, P330, P501
Acute Toxicity - Dermal	Category 4	H312	P280, P302+P352, P312, P321, P362, P501
Acute Toxicity - Inhalation	Category 3	H331	P261, P271, P304+P340, P311, P321, P403+P233, P405, P501
Eye Damage / Irritation	Category 2A	H319	P264, P280, P305+P351+P338, P337+P313
Reproductive Toxicity	Category 1	H360	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
Flammable Liquids	Category 4	H227	P210, P280, P370+P378, P403+P235, P501

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### 2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

Hazard Statements:

Hazard Number	Hazard Statement
H227	Combustible liquid.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H360	May damage fertility or the unborn child.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.



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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.
P210	Keep away from heat, sparks and open flame. No smoking.
P260	Do not breathe dust, fumes or mist.
P261	Avoid breathing dust, fumes or mist.
P264	Wash arms, hands and face thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of soap and 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 d Continue rinsing.
P307+P311	IF exposed: Call a POISON CENTER or physician.
P308+P313	IF exposed or concerned: Get medical attention.
P311	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.
P337+P313	If eye irritation persists: Get medical attention.
P362	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use dry chemical, foam or carbon dioxide to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents in accordance with local, state, federal and international regulations.

### 2.3. WHMIS Classification

WHMIS classification is not included based on the recommended option (Option 4) found in the Canada Gazette Part II, Vol. 149, No.3, page 458

### 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	82.93%
Methyl Alcohol	CH <sub>3</sub> OH	32.04 g/mol	67-56-1	13.04%
Ferric Nitrate Nonahydrate	Fe(NO <sub>3</sub> ) <sub>3</sub> ·9H <sub>2</sub> O	407.01 g/mol	7782-61-8	3.58%
Nitric Acid	HNO <sub>3</sub>	63.01 g/mol	7697-37-2	0.37%
Mercuric Thiocyanate	Hg(SCN) <sub>2</sub>	316.75 g/mol	592-85-8	0.07%
Brij	C <sub>20</sub> H <sub>42</sub> O <sub>5</sub>	Data not available.	9002-92-0	0.02%

### 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. May cause irritation with burning and stinging with possible damage to the cornea and conjunctiva.

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

**Skin Contact:** IF ON SKIN: Wash with plenty of soap and water. May cause irritation, dermatitis, redness and pain. May be absorbed through skin on prolonged exposure.

**Ingestion:** IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Dilute immediately with water or milk. Induce vomiting. Call a physician.

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

WARNING! Contains a Mercury compound. May be harmful if swallowed. Avoid ingestion and contact with skin, eyes or clothing. Handle this item and all chemicals with care. If swallowed, dilute with water, induce vomiting and call a physician. Wash areas of contact with plenty of water. EYE CONTACT: May cause irritation with burning and stinging with possible damage to the cornea and conjunctiva. SKIN CONTACT: May cause irritation, dermatitis, redness and pain. May be absorbed through skin on prolonged exposure. CHRONIC EFFECTS / CARCINOGENICITY: Repeated large oral doses can cause excess iron buildup in the body. Chronic exposure can cause liver effects.

#### 4.3. Medical Attention or Special Treatment Needed

Specific treatment (Wash areas of contact with water immediately).

### SECTION 5: Fire-Fighting Measures

#### 5.1. Extinguishing Media

In case of fire: Use dry chemical, foam or carbon dioxide to extinguish. Use any means suitable for extinguishing surrounding fire.

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

Combustible liquid. Not considered to be a fire or explosion hazard.

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### 5.3. Special Protective Equipment for Firefighters

Use protective clothing and breathing equipment appropriate for the surrounding fire.

## 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

Contain spill. Do not flush to sewer. Absorb with suitable inert material (vermiculite, dry sand, etc) and place in a chemical waste container for proper disposal in an approved waste disposal facility. Ventilate area of spill. Dispose of in accordance with local regulations.

## SECTION 7: Handling and Storage

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

Store locked up. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage.

## SECTION 8: Exposure Controls / Personal Protection

### 8.1. Control Parameters

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Ferric Nitrate Nonahydrate (7782-61-8)	TLV-TWA	USA	1 mg/m <sup>3</sup> TWA (as Fe)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Mercuric Thiocyanate (592-85-8)	TWA	USA	5 mg/m <sup>3</sup> TWA (as CN)	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Mercuric Thiocyanate (592-85-8)	TLV-TWA	USA	0.025 mg/m <sup>3</sup> TWA (as Hg)	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Methyl Alcohol (67-56-1)	TWA	USA	200 ppm TWA 260 mg/m <sup>3</sup> TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Methyl Alcohol (67-56-1)	TLV-STEL	USA	250 ppm STEL	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Methyl Alcohol (67-56-1)	TLV-TWA	USA	200 ppm TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Nitric Acid (7697-37-2)	TWA	USA	2 ppm TWA 5 mg/m <sup>3</sup> TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Nitric Acid (7697-37-2)	TLV-STEL	USA	4 ppm STEL	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Nitric Acid (7697-37-2)	TLV-TWA	USA	2 ppm TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

### 8.2. Exposure Controls

**Engineering Controls:** Use only outdoors or in a well-ventilated area. No specific controls are needed. Normal room ventilation is adequate.



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**Respiratory Protection:** If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved atmosphere supplied respirator must be worn.

**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. If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved atmosphere supplied respirator must be worn. Chemical resistant gloves. Safety glasses or goggles.

## SECTION 9: Physical and Chemical Properties

### 9.1. Basic Physical and Chemical Properties

**Appearance:** Brown liquid

**Physical State:** Liquid

**Odor:** Data not available.

**Odor Threshold:** Data not available.

**pH:** Data not available.

**Melting/Freezing Point:** Approximately 0°C

**Initial Boiling Point /Range:** Approximately 100°C - Approximately 100°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:** 0.95

**Solubility:** Miscible

**Partition Coefficient (n-Octanol/Water):** 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

Stable under normal conditions of use and storage.



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### 10.2. Possibility of Hazardous Reactions

Data not available.

### 10.3. Conditions to Avoid and Incompatible Materials

Keep away from heat, sparks and open flame. No smoking. Strong oxidizing agents such as Nitrates, Perchlorates or Sulfuric Acid, Strong bases,

### 10.4. Hazardous Decomposition Products

Will not occur.

## 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:

Harmful 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 contaminated clothing and wash it before reuse. Dispose of contents in accordance with local, state, federal and international regulations.

#### Acute Toxicity - Inhalation Exposure:

Toxic if inhaled. Avoid breathing dust, fumes or mist. Use only outdoors or in a well-ventilated area. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

#### Acute Toxicity - Other Information:

LDLo, Oral, Human: 430 mg/kg (Nitric Acid), details of toxic effects not reported other than lethal dose value.

LD50, Oral, Rat: 3250 mg/kg (Ferric Nitrate Nonahydrate), 5628 mg/kg (Methanol), 46 mg/kg (Mercuric Thiocyanate), details of toxic effects not reported other than lethal dose value. LD50, Oral, Rat: 1000 mg/kg (Brij® 35), gastrointestinal and liver effects cited.

#### Skin Corrosion and Irritation:

Not applicable.

#### Serious Eye Damage and Irritation:

Causes serious eye irritation. Wash arms, hands and face thoroughly after handling. 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. If eye irritation persists: Get medical attention.

#### Respiratory Sensitization:

Not applicable.

#### Skin Sensitization:

Not applicable.



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**Germ Cell Mutagenicity:**

Not applicable.

**Carcinogenicity:**

Not applicable.

**Reproductive Toxicity:**

May damage 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 dust, fumes or mist. 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 dust, fumes or mist. 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**

Not applicable.

**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)

Not regulated according to DOT Regulations.

### 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

Nitric Acid (CAS # 7697-37-2): 1000 lb EPCRA RQ

Nitric Acid (CAS # 7697-37-2): 1000 lb TPQ

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

Mercuric Thiocyanate (CAS # 592-85-8): 10 lb final RQ; 4.54 kg final RQ

Methyl Alcohol (CAS # 67-56-1): 5000 lb final RQ; 2270 kg final RQ

Nitric Acid (CAS # 7697-37-2): 1000 lb final RQ; 454 kg final RQ

Ferric Nitrate Nonahydrate (CAS # 7782-61-8): 1000 lb final RQ; 454 kg final RQ

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

Mercuric Thiocyanate (CAS # 592-85-8): 1.0 % de minimis concentration (X+CN- where X = H+ or any other group where a formal dissociation can be made. For example KCN or Ca(CN)<sub>2</sub>. Chemical Category N106)

Mercuric Thiocyanate (CAS # 592-85-8): 1.0 % Supplier notification limit (listed under Chemical Category N458)

Mercuric Thiocyanate (CAS # 592-85-8): 10 lb RT

Methyl Alcohol (CAS # 67-56-1): 1.0 % de minimis concentration

Nitric Acid (CAS # 7697-37-2): 1.0 % de minimis concentration

Ferric Nitrate Nonahydrate (CAS # 7782-61-8): 1.0 % de minimis concentration (reportable only when in aqueous solution, Chemical Category N511)

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

Mercuric Thiocyanate (CAS # 592-85-8): Present

Methyl Alcohol (CAS # 67-56-1): Present

Nitric Acid (CAS # 7697-37-2): Extraordinarily hazardous

Ferric Nitrate Nonahydrate (CAS # 7782-61-8): Present



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

Mercuric Thiocyanate (CAS # 592-85-8): Environmental hazard  
Mercuric Thiocyanate (CAS # 592-85-8): Present  
Methyl Alcohol (CAS # 67-56-1): Environmental hazard  
Methyl Alcohol (CAS # 67-56-1): Present  
Nitric Acid (CAS # 7697-37-2): Environmental hazard  
Nitric Acid (CAS # 7697-37-2): Present  
Water (CAS # 7732-18-5): Present  
Ferric Nitrate Nonahydrate (CAS # 7782-61-8): Environmental hazard  
Ferric Nitrate Nonahydrate (CAS # 7782-61-8): Present

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

Mercuric Thiocyanate (CAS # 592-85-8): corrosive  
Mercuric Thiocyanate (CAS # 592-85-8): sn 1183  
Mercuric Thiocyanate (CAS # 592-85-8): sn 1194  
Mercuric Thiocyanate (CAS # 592-85-8): SN 2308 TPQ: 500 lb (Category Code N106, listed under Cyanide)  
Mercuric Thiocyanate (CAS # 592-85-8): sn 2308; sn 0553  
Mercuric Thiocyanate (CAS # 592-85-8): SN 2414 TPQ: 500 lb (Category Code N458. Includes any unique chemical substance that contains the named metal as part of that chemical structure)  
Methyl Alcohol (CAS # 67-56-1): flammable - third degree; teratogen  
Methyl Alcohol (CAS # 67-56-1): sn 1222  
Methyl Alcohol (CAS # 67-56-1): SN 1222 TPQ: 500 lb  
Nitric Acid (CAS # 7697-37-2): corrosive; reactive - second degree  
Nitric Acid (CAS # 7697-37-2): sn 1356  
Nitric Acid (CAS # 7697-37-2): SN 1356 TPQ: 500 lb  
Nitric Acid (CAS # 7697-37-2): sn 3722  
Nitric Acid (CAS # 7697-37-2): SN 3722 TPQ: 500 lb (water dissociable, Category Code N511)  
Ferric Nitrate Nonahydrate (CAS # 7782-61-8): sn 0924  
Ferric Nitrate Nonahydrate (CAS # 7782-61-8): sn 3722  
Ferric Nitrate Nonahydrate (CAS # 7782-61-8): SN 3722 TPQ: 500 lb (water dissociable, Category Code N511)

### 15.8. California Proposition 65

Mercuric Thiocyanate (CAS # 592-85-8): developmental toxicity, initial date 7/1/90  
Methyl Alcohol (CAS # 67-56-1): developmental toxicity, initial date 3/16/12

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

Mercuric Thiocyanate (CAS # 592-85-8): Present  
Methyl Alcohol (CAS # 67-56-1): Present  
Nitric Acid (CAS # 7697-37-2): Present  
Water (CAS # 7732-18-5): Present  
Ferric Nitrate Nonahydrate (CAS # 7782-61-8): Present  
Brij (CAS # 9002-92-0): Present



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

Mercuric Thiocyanate (CAS # 592-85-8): Present  
Methyl Alcohol (CAS # 67-56-1): Present  
Nitric Acid (CAS # 7697-37-2): Present  
Water (CAS # 7732-18-5): Present  
Ferric Nitrate Nonahydrate (CAS # 7782-61-8): Present  
Brij (CAS # 9002-92-0): Present [XU]

### 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

Combustible liquid. Harmful if swallowed. Harmful in contact with skin. Causes serious eye irritation. Toxic if inhaled. May damage fertility or the unborn child. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks and open flame. No smoking. Do not breathe dust, fumes or mist. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. 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 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). Rinse mouth. If eye irritation persists: Get medical attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use dry chemical, foam or carbon dioxide to extinguish.

Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

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.

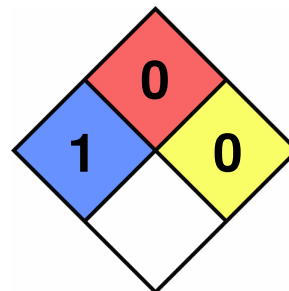
**Health Hazards Not Otherwise Classified (HHNOC):** Not Applicable.

Not Applicable.

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

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



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### 16.4. Document Revision

**Last Revision Date:** 5/1/2015

### 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.