



<b>Aggravated Medical Conditions</b>	None known.
<b>Environmental hazard</b>	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. See Section 12 for additional Ecological Information.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Hazardous

Chemical Name	CAS-No	Weight %
Ammonium thiocyanate	1762-95-4	25 - 30
Ammonium thiosulfate	7783-18-8	10 - 15
Sodium bisulfite	7631-90-5	0.1 - 1
Ammonium bisulfite	10192-30-0	0.1 - 1

#### Non-Hazardous

Chemical Name	CAS-No	Weight %
Water	7732-18-5	60 - 65

### 4. FIRST AID MEASURES

<b>General advice</b>	IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE. Show this material safety data sheet to the doctor in attendance. Do not breathe dust/fume/gas/mist/vapors/spray. If hydrogen cyanide gas is liberated due to contact with a strong oxidizer or acid, it may cause dizziness, headache, rapid respiration, rapid pulse, unconsciousness, convulsions and death.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Get medical attention immediately if symptoms occur.
<b>Skin contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Get medical attention immediately if symptoms occur.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.
<b>Ingestion</b>	If swallowed, call a poison control center or doctor immediately. Do not induce vomiting without medical advice. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person.
<b>Notes to physician</b>	Contact with a strong oxidizer or acid may liberate hydrogen cyanide gas. In the event that hydrogen cyanide gas is released, the local emergency ambulance/resuscitation service or physician should be informed that the patient may have been exposed to hydrogen cyanide gas.
<b>Protection of First-aiders</b>	Use personal protective equipment.

### 5. FIRE-FIGHTING MEASURES

<b>Flash point:</b>	Does not flash
<b>Suitable Extinguishing Media</b>	Dry chemical, CO <sub>2</sub> , alcohol-resistant foam or water spray.
<b>Unsuitable Extinguishing Media</b>	Do not use a solid water stream as it may scatter and spread fire.

**Hazardous Combustion Products**

Carbon oxides, Nitrogen oxides (NOx), Sulfur oxides, Hydrogen cyanide.

**Specific hazards arising from the chemical**

Dried product residue can act as a reducing agent. Reacts violently with oxidizing materials. May cause spontaneous heating and ignition when absorbed on combustible, porous material (e.g. rags, paper, sawdust, cotton, clothing).

**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.

**NFPA**                      **Health Hazard** - 4                      **Flammability** - 1                      **Stability** - 1

**6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions**                      Ensure adequate ventilation. For personal protection see section 8.
- Methods for Containment**                      Prevent further leakage or spillage if safe to do so.
- Methods for cleaning up**                      Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.
- Other information**                      See Section 12 for additional information.

**7. HANDLING AND STORAGE**

- Advice on safe handling**                      Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Prevent the formation of vapors, mists and aerosols. Do not eat, drink or smoke when using this product. Keep from contact with oxidizing materials, highly oxygenated or halogenated solvents, organic compounds containing reducible functional groups. Drying of this product on clothing or combustible materials may cause fire.
- Technical measures/Storage conditions**                      Keep container tightly closed in a dry and well-ventilated place. Store in original container. Do not allow evaporation to dryness.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure Guidelines**

Chemical Name	ACGIH TLV	AIHA - Workplace Environmental Exposure Levels (WEELs) - TWAs	OSHA PEL	Advisory OEL
Ammonium thiocyanate 1762-95-4			TWA: 5 mg/m <sup>3</sup> S*	
Sodium bisulfite 7631-90-5	TWA: 5 mg/m <sup>3</sup>			

**Occupational Exposure Controls**

- Engineering Measures**                      Ensure adequate ventilation. Apply technical measures to comply with the occupational exposure limits.
- Personal Protective Equipment**
- General Information**                      These recommendations apply to the product as supplied.
- Respiratory protection**                      Use only with adequate ventilation. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

<b>Eye/Face Protection</b>	Safety glasses with side-shields. If splashes are likely to occur, wear:. Goggles.
<b>Skin and body protection</b>	Wear suitable protective clothing.
<b>Hand Protection</b>	Impervious gloves.
<b>Other Protective Equipment</b>	Ensure that eyewash stations and safety showers are close to the workstation location.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state</b> liquid	<b>Odor</b> Odorless
<b>ph</b> 5.4	<b>Color</b> clear colorless
<b>Flash point:</b> Does not flash	<b>Autoignition temperature:</b> No information available
<b>Boiling point/boiling range</b> > 100 °C / 212 °F	
<b>Vapor Pressure</b> 22 mbar @ 20 °C	
<b>Vapor density</b> 0.4	
<b>Density</b> No information available	
<b>Water Solubility</b> completely soluble	
<b>Melting point/range:</b> No information available	
<b>Specific Gravity</b> 1.12	
<b>Bulk Density:</b> No information available	

## 10. STABILITY AND REACTIVITY

<b>Stability</b>	Stable under normal conditions.
<b>Incompatible products</b>	Acids. Sodium hypochlorite. Strong bases. Oxidizing agents. Halogenated compounds. Contact with strong acids liberates sulfur dioxide. Contact with sodium hypochlorite (bleach) may form chloramine (toxic gas).
<b>Conditions to Avoid</b>	Heat, flames and sparks. Take precautionary measures against static discharges.
<b>Hazardous Decomposition Products</b>	Ammonia. Chloramine. Sulfur oxides. Nitrogen oxides (NOx). Cyanides. Carbon oxides.
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	Contact with a strong oxidizer or acid may liberate hydrogen cyanide gas. Contact with sodium hypochlorite (bleach) may form chloramine (toxic gas).

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity - Product Information

<b>Skin</b>	Harmful in contact with skin. Irritating to skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
<b>Eyes</b>	Irritating to eyes.

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**Inhalation** Harmful by inhalation. Irritating to respiratory system. If hydrogen cyanide gas is liberated due to contact with a strong oxidizer or acid, it may cause dizziness, headache, rapid respiration, rapid pulse, unconsciousness, convulsions and death. Contact with strong acids liberates sulfur dioxide. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.

**Ingestion** Harmful if swallowed. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Acute toxicity - Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	90,000 mg/kg ( Rat )		
Ammonium thiocyanate	500 mg/kg ( Rat )		
Ammonium thiosulfate	> 2000 mg/kg ( Rat )		
Sodium bisulfite	1420 mg/kg ( Rat )		
<b>Chemical Name</b>	<b>Other applicable information</b>		
Ammonium thiocyanate	Moderate eye irritation Moderate skin irritation Overexposure to thiocyanates has been shown to cause thyroid enlargement, decrease in metabolic rate, and symptoms of hypothyroidism in humans and animals. Hydrogen cyanide gas may be liberated upon contact with strong oxidizers or acids. Hydrogen cyanide gas may cause dizziness, headache, rapid respiration, rapid pulse, unconsciousness, convulsions and death.		

**Subchronic toxicity** No information available

**Chronic toxicity** May cause adverse thyroid effects. AMMONIUM THIOCYANATE: Overexposure to thiocyanates has been shown to cause thyroid enlargement, decrease in metabolic rate, and symptoms of hypothyroidism in humans and animals.

**Carcinogenicity** Contains no ingredient listed as a carcinogen.

**Sensitization** May cause sensitization of susceptible persons.

**Target Organ Effects** Eyes, Skin, Respiratory system, Thyroid, Central nervous system.

**Other adverse effects** May cause adverse thyroid effects. Overexposure to thiocyanates has been shown to cause thyroid enlargement, decrease in metabolic rate, and symptoms of hypothyroidism in humans and animals.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects** This product contains an ingredient that is classified, according to European regulations, as "harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment".

Component Information

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates

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Sodium bisulfite		LC50= 240 mg/L Gambusia affinis 96 h	EC50 = 119 mg/L 48 h (Daphnia magna)
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**Persistence and degradability** Expected to be readily biodegradable

**Bioaccumulation:** - No information available

**Mobility** - No information available

**Other adverse effects**

No information available

### 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods** Dispose of in accordance with local regulations.

**Contaminated packaging** Do not re-use empty containers. Dispose of in accordance with local regulations.

### 14. TRANSPORT INFORMATION

The information given below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions. Please consult the product packaging for further details.

**DOT** Not regulated

**TDG** Not regulated

**ICAO/IATA** Not regulated

**IMDG/IMO** Not regulated

For transportation information, go to: <http://ship.carestreamhealth.com>.

### 15. REGULATORY INFORMATION

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**

D2A Very toxic materials



### International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies

KECL	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

#### Legend

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**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

**NZIoC** - New Zealand Inventory of Chemicals

## 16. OTHER INFORMATION

### Disclaimer for Label

The data below reflects current legislative requirements whereas the product in your possession may carry a different version of the label depending on the date of manufacture.



### Warning!

- Contains:

#### Hazardous Components

Chemical Name	CAS-No	Weight %
Ammonium thiocyanate	1762-95-4	25 - 30
Ammonium thiosulfate	7783-18-8	10 - 15
Sodium bisulfite	7631-90-5	0.1 - 1
Ammonium bisulfite	10192-30-0	0.1 - 1

Harmful if swallowed, inhaled, or absorbed through skin. May cause adverse thyroid effects. Causes eye and skin irritation. Dried product residue can act as a reducing agent. Contact with strong oxidizer or acid liberates poisonous and flammable gas.

Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Ensure adequate ventilation. Wash thoroughly after handling.

IF IN EYES: Flush eyes for at least 15 minutes. Get medical attention.

IF ON SKIN: Gently wash with plenty of soap and water.

If swallowed, call a poison control center or doctor immediately. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.

Additional information is given in the Material Safety Data Sheet.

### Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text