



Safety Data Sheet

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation: Silver Diethyldithiocarbamate, 0.3% (w/v) in Chloroform

Product Number: 6810

Other Identifying Product Numbers: 6810-16, 6810-4

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

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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 - Inhalation	Category 3	H331	P261, P271, P304+P340, P311, P321, P403+P233, P405, P501
Skin Corrosion / Irritation	Category 2	H315	P264, P280, P302+P352, P321, P332+P313, P362
Eye Damage / Irritation	Category 1	H318	P280, P305+P351+P338, P310
Germ Cell Mutagenicity	Category 2	H341	P201, P202, P280, P308+P313, P405, P501
Carcinogenicity	Category 1	H350	P201, P202, P280, P308+P313, P405, 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
Hazardous to the Aquatic Environment (Acute)	Category 2	H401	P273, P501
Hazardous to the Aquatic Environment (Chronic)	Category 2	H401	P273, P501

2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**



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Hazard Statements:

Hazard Number	Hazard Statement
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H401	Toxic 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.
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.
P271	Use only outdoors or in a well-ventilated area.
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.
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 do. Continue rinsing.
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.
P311	Call a POISON CENTER or physician.
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.
P362	Take off contaminated clothing and wash it before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
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%
Chloroform	CHCl_3	119.37 g/mol	67-66-3	99.12%
Morpholine	$\text{C}_4\text{H}_9\text{ON}$	87.12 g/mol	110-91-8	0.68%
Silver Diethyldithiocarbamate	$(\text{C}_2\text{H}_5)_2\text{NCSSAg}$	149.27 g/mol	1470-61-7	0.20%

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. Causes irritation.

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 with itching, redness, burning and swelling. Prolonged contact required for serious effects, which include dermatitis.

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

DANGER! Suspect cancer hazard. May cause cancer. Risk of cancer depends on level and duration of exposure. May be fatal if swallowed, inhaled or absorbed through skin. Causes irritation to the skin, eyes and respiratory tract. May affect central nervous system, liver, kidneys and cardiovascular system. If ingested, dilute with water, induce vomiting then call a physician. Wash areas of contact with water. EYE CONTACT: Causes irritation. SKIN CONTACT: May cause irritation with itching, redness, burning and swelling. Prolonged contact required for serious effects, which include dermatitis. CHRONIC EFFECTS / CARCINOGENICITY: Suspected carcinogen. Prolonged or repeated exposure to vapors may cause damage to the nervous system, heart, liver and kidneys. Repeated exposure may cause chronic irritation of the skin leading possibly to dermatitis.

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, but if involved in a fire reacts to produce hydrogen chloride and phosgene.

5.3. Special Protective Equipment for Firefighters

Wear special protective clothing and positive pressure self-contained breathing apparatus. Polyvinyl alcohol or Viton barrier recommended.



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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

Approach release from upwind. Stop or control the leak, if this can be done without undue risk. Control runoff and isolate discharged material for proper disposal.

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
Chloroform (67-66-3)	TLV-TWA	USA	10 ppm TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Chloroform (67-66-3)	PEL-Ceiling	USA	50 ppm Ceiling 240 mg/m ³ Ceiling	U.S. - OSHA - Final PELs - Ceiling Limits
Morpholine (110-91-8)	TWA	USA	20 ppm TWA 70 mg/m ³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Morpholine (110-91-8)	TLV-TWA	USA	20 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. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limit.

Respiratory Protection: If the exposure limit is exceeded, a full facepiece respirator equipped with organic vapor cartridge should 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 the exposure limit is exceeded, a full facepiece respirator equipped with organic vapor cartridge should be worn. 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: Yellow liquid

Physical State: Liquid

Odor: Characteristic, pleasant, sweet

Odor Threshold: 192 Ppm

pH: Data not available.

Melting/Freezing Point: -63.5°C

Initial Boiling Point /Range: 60.5 - 61.2°C

Flash Point: Data not available.

Evaporation Rate: 11.6 (butyl acetate = 1)

Flammability: Data not available.

Flammability/Explosive Limits: Data not available.

Vapor Pressure: 211 hPa at 20°C

Vapor Density: 4.36

Relative Density: 1.48

Solubility: 8 G/L at 20°C

Partition Coefficient (n-Octanol/Water): 2 at 25 °C

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.

10.2. Possibility of Hazardous Reactions

Data not available.

10.3. Conditions to Avoid and Incompatible Materials

Alkali metals (Sodium, Potassium, Lithium), strong caustics and oxidizers.

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:

Not applicable.

Acute Toxicity - Inhalation Exposure:

Toxic if inhaled. Avoid breathing fumes, mist, vapors, or spray. 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:

LD50, Oral, Rat: (Chloroform) 695 mg/kg, behavioral and respiratory effects noted; LD50, Dermal, Rabbit: >20,000 mg/kg, details of toxic effects not reported other than lethal dose value. Investigated as a tumorigen (Morpholine and Chloroform). LD50, Oral, Rat: (Morpholine) 1450 mg/kg, details of toxic effects not reported other than lethal dose value.

Skin Corrosion and Irritation:

Causes skin irritation. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF ON SKIN: Wash with plenty of soap and water. Specific treatment (Wash areas of contact with water immediately). If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.

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:

Not applicable.

Germ Cell Mutagenicity:

Suspected of causing genetic defects. 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.

Carcinogenicity:

May cause cancer. 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.



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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

Toxic to aquatic life. Avoid release to the environment. Dispose of contents in accordance with local, state, federal and international regulations. Toxic 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: 120 mL, 500 mL

UN Number: UN1888

Proper Shipping Name: Chloroform Solution

Hazard Class: 6.1

Packing Group: III

Hazard Placard Labels:



Sizes:

UN Number:

Proper Shipping Name:

Hazard Class:

Packing Group:

Hazard Placard Labels:

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

Sizes: 120 mL, 500 mL

UN Number: UN1888

Proper Shipping Name: Chloroform Solution

Hazard Class: 6.1

Packing Group: III

Hazard Placard Labels:



SECTION 15: Regulatory Information

15.1. Occupational Safety and Health Administration (OSHA) Hazards

Not listed.



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

Chloroform (CAS # 67-66-3): 10 lb EPCRA RQ

Chloroform (CAS # 67-66-3): 10000 lb TPQ

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

Chloroform (CAS # 67-66-3): 1 lb final RQ; 0.454 kg final RQ

Chloroform (CAS # 67-66-3): 10 lb final RQ; 4.54 kg final RQ

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

Silver Diethyldithiocarbamate (CAS # 1470-61-7): 1.0 % de minimis concentration (listed under Chemical Category N740)

Chloroform (CAS # 67-66-3): 0.1 % de minimis concentration

15.5. Massachusetts Right-to-Know Substance List

Morpholine (CAS # 110-91-8): Present

Chloroform (CAS # 67-66-3): Carcinogen; Extraordinarily hazardous

15.6. Pennsylvania Right-to-Know Hazardous Substances

Morpholine (CAS # 110-91-8): Present

Silver Diethyldithiocarbamate (CAS # 1470-61-7): Environmental hazard

Silver Diethyldithiocarbamate (CAS # 1470-61-7): Present

Chloroform (CAS # 67-66-3): Environmental hazard

Chloroform (CAS # 67-66-3): Environmental hazard; Special hazardous substance

Chloroform (CAS # 67-66-3): Present

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

Morpholine (CAS # 110-91-8): corrosive; flammable - third degree

Morpholine (CAS # 110-91-8): sn 1315

Silver Diethyldithiocarbamate (CAS # 1470-61-7): sn 3008

Silver Diethyldithiocarbamate (CAS # 1470-61-7): SN 3008 500 lb TPQ (Category Code N740. Includes any unique chemical substance that contains the named metal as part of that chemical structure)

Chloroform (CAS # 67-66-3): carcinogen

Chloroform (CAS # 67-66-3): sn 0388

Chloroform (CAS # 67-66-3): SN 0388 500 lb TPQ

15.8. California Proposition 65

Chloroform (CAS # 67-66-3): 20 µg/day NSRL (oral); 40 µg/day NSRL (inhalation)

Chloroform (CAS # 67-66-3): carcinogen, 10/1/1987

Chloroform (CAS # 67-66-3): developmental toxicity, 8/7/2009

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

Morpholine (CAS # 110-91-8): Present (DSL)

Silver Diethyldithiocarbamate (CAS # 1470-61-7): Present (DSL)

Chloroform (CAS # 67-66-3): Present (DSL)



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

Morpholine (CAS # 110-91-8): Present

Silver Diethyldithiocarbamate (CAS # 1470-61-7): Present

Chloroform (CAS # 67-66-3): Present

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

Harmful if swallowed. Causes skin irritation. Causes serious eye damage. Toxic if inhaled. Suspected of causing genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure. Toxic to aquatic life.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. 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. Use only outdoors or in a well-ventilated area. 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 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 skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.

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.

16.2. Miscellaneous Hazard Classes

Canadian Carcinogenicity Hazard Class: Not Applicable.

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

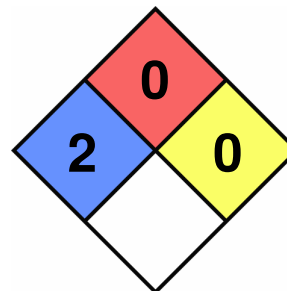
Health Hazards Not Otherwise Classified (HHNOC): Not Applicable.
Not Applicable.



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16.3. National Fire Protection Association (NFPA) Rating

Health: 2
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.