

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Silver Diethyldithiocarbamate, 0.3% in Chloroform
Product code : LC22430

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : For laboratory and manufacturing use only.

1.3. Details of the supplier of the safety data sheet

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Acute Tox. 3 (Oral) H301
Skin Irrit. 2 H315
Eye Irrit. 2A H319
Carc. 2 H351
Aquatic Acute 2 H401

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS06

GHS07

GHS08

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H301 - Toxic if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H351 - Suspected of causing cancer (Inhalation)
H401 - Toxic to aquatic life

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P264 - Wash exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P273 - Avoid release to the environment
P280 - Wear protective gloves, protective clothing, eye protection, face protection
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor
P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313 - IF exposed or concerned: Get medical advice/attention
P330 - If swallowed, rinse mouth
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations

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2.3. Other hazards

Other hazards not contributing to the classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Chloroform	(CAS No) 67-66-3	98.7	Acute Tox. 4 (Oral), H302 Carc. 2, H351 Aquatic Acute 2, H401
Morpholine	(CAS No) 110-91-8	1	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Skin Corr. 1A, H314 Eye Dam. 1, H318 Aquatic Acute 3, H402
Silver Diethyldithiocarbamate, ACS	(CAS No) 1470-61-7	0.3	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Suspected of causing cancer (Inhalation).

First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Suspected of causing cancer.

Symptoms/injuries after inhalation : Dizziness. Nausea.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Symptoms/injuries after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

Chronic symptoms : Central nervous system depression.

4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Safety glasses. Protective clothing. Gloves. Face-shield. Combined gas/dust mask with filter type A/P3.
- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Hygiene measures : Do not eat, drink or smoke when using this product. Wash exposed skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources., Ignition sources, Direct sunlight. Keep container closed when not in use. Protect from sunlight. Refrigerate.
- Incompatible products : Strong oxidizers.
- Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Silver Diethyldithiocarbamate, 0.3% in Chloroform		
ACGIH	Not applicable	
OSHA	Not applicable	
Silver Diethyldithiocarbamate, ACS (1470-61-7)		
ACGIH	ACGIH TWA (mg/m ³)	0.01 mg/m ³ as Ag
OSHA	OSHA PEL (TWA) (mg/m ³)	0.01 mg/m ³
Morpholine (110-91-8)		
ACGIH	ACGIH TWA (mg/m ³)	71 mg/m ³
ACGIH	ACGIH TWA (ppm)	20 ppm
OSHA	OSHA PEL (TWA) (mg/m ³)	70 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	20 ppm
Chloroform (67-66-3)		
ACGIH	ACGIH TWA (ppm)	10 ppm
OSHA	OSHA PEL (Ceiling) (mg/m ³)	240 mg/m ³
OSHA	OSHA PEL (Ceiling) (ppm)	50 ppm

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8.2. Exposure controls

Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: Wear appropriate mask.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Colorless
Odor	: chloroform-like
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Poorly soluble in water. Water: Solubility in water of component(s) of the mixture : • Chloroform: 0.80 g/100ml
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Refrigeration enhances stability.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong oxidizers.

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10.6. Hazardous decomposition products

Chlorine. Carbon monoxide. Carbon dioxide. Sulfur compounds.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact

Acute toxicity : Oral: Toxic if swallowed.

Silver Diethyldithiocarbamate, 0.3% in Chloroform

ATE US (oral)	100.000 mg/kg body weight
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Morpholine (110-91-8)

LD50 oral rat	1050 mg/kg
LD50 dermal rabbit	310 mg/kg
ATE US (oral)	1050.000 mg/kg body weight
ATE US (dermal)	310.000 mg/kg body weight

Chloroform (67-66-3)

LD50 oral rat	695 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 908 mg/kg bodyweight; Rat; OECD 401: Acute Oral Toxicity; Experimental value; 1117 mg/kg bodyweight; Rat)
LD50 dermal rabbit	> 20000 mg/kg (Rabbit; Experimental value; >3980 mg/kg bodyweight; Rabbit)
LC50 inhalation rat (mg/l)	48 mg/l/4h (Rat; Literature study)
ATE US (oral)	695.000 mg/kg body weight
ATE US (vapors)	48.000 mg/l/4h
ATE US (dust, mist)	48.000 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Suspected of causing cancer (Inhalation).

Chloroform (67-66-3)

IARC group	2B - Possibly carcinogenic to humans
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Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met. Toxic if swallowed.

Symptoms/injuries after inhalation : Dizziness. Nausea.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Symptoms/injuries after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

Chronic symptoms : Central nervous system depression.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Toxic to aquatic life.

Morpholine (110-91-8)

LC50 fish 1	350 mg/l
EC50 Daphnia 1	100 mg/l
EC50 other aquatic organisms 1	28 mg/l 96 hr. Algae

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Morpholine (110-91-8)	
LC50 fish 2	375 - 460 mg/l
Chloroform (67-66-3)	
LC50 fish 1	18.2 ppm (96 h; Oncorhynchus mykiss)
EC50 Daphnia 1	6.3 mg/l (504 h; Daphnia magna; Reproduction)
LC50 fish 2	43.8 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
Threshold limit algae 1	185 mg/l (Microcystis aeruginosa; Toxicity test)
Threshold limit algae 2	1100 mg/l (Scenedesmus quadricauda; Toxicity test)

12.2. Persistence and degradability

Silver Diethyldithiocarbamate, 0.3% in Chloroform	
Persistence and degradability	Not established.
Silver Diethyldithiocarbamate, ACS (1470-61-7)	
Persistence and degradability	Not established.
Morpholine (110-91-8)	
Persistence and degradability	Readily biodegradable in water. Not established.
Chloroform (67-66-3)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil.
ThOD	0.33 - 1.35 g O ₂ /g substance
BOD (% of ThOD)	0.015 - 0.06 % ThOD

12.3. Bioaccumulative potential

Silver Diethyldithiocarbamate, 0.3% in Chloroform	
Bioaccumulative potential	Not established.
Silver Diethyldithiocarbamate, ACS (1470-61-7)	
Bioaccumulative potential	Not established.
Morpholine (110-91-8)	
Log Pow	-2.55
Bioaccumulative potential	Not established.
Chloroform (67-66-3)	
BCF fish 1	6 (336 h; Lepomis macrochirus)
BCF fish 2	1.4 - 4.7 (42 days; Cyprinus carpio)
BCF other aquatic organisms 1	224 (Pecten maximus; Mantle, dry weight)
BCF other aquatic organisms 2	438 (Modiolus modiolus; Mantle, dry weight)
Log Pow	1.97 (Experimental value; 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Chloroform (67-66-3)	
Surface tension	0.0271 N/m (20 °C)
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.

Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1888 Chloroform, 6.1, III

UN-No.(DOT) : UN1888

Proper Shipping Name (DOT) : Chloroform

Transport hazard class(es) (DOT) : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132

Hazard labels (DOT) : 6.1 - Poison inhalation hazard



Packing group (DOT) : III - Minor Danger

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 241

DOT Special Provisions (49 CFR 172.102) : IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
N36 - Aluminum or aluminum alloy construction materials are permitted only for halogenated hydrocarbons that will not react with aluminum.
T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)
TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.

DOT Packaging Exceptions (49 CFR 173.xxx) : 153

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Silver Diethyldithiocarbamate, 0.3% in Chloroform

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
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All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

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Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Chloroform	CAS No 67-66-3	98.7
Silver Diethyldithiocarbamate, ACS (1470-61-7)		
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard	
Morpholine (110-91-8)		
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Fire hazard	
Chloroform (67-66-3)		
Listed on United States SARA Section 313		
RQ (Reportable quantity, section 304 of EPA's List of Lists)	10 lb	
SARA Section 313 - Emission Reporting	0.1 %	

15.2. International regulations

CANADA

Silver Diethyldithiocarbamate, ACS (1470-61-7)	
Listed on the Canadian DSL (Domestic Substances List)	
Morpholine (110-91-8)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 3 - Combustible Liquid Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class E - Corrosive Material
Chloroform (67-66-3)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

National regulations

Morpholine (110-91-8)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
Chloroform (67-66-3)	
Listed on the Canadian IDL (Ingredient Disclosure List)	

15.3. US State regulations

California Proposition 65 - This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and/or reproductive toxicity

Chloroform (67-66-3)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	20 µg/day

SECTION 16: Other information

Other information : None.

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Full text of H-phrases: see section 16:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 2	Hazardous to the aquatic environment - Acute Hazard Category 2
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Carc. 2	Carcinogenicity Category 2
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 3	Flammable liquids Category 3
Skin Corr. 1A	Skin corrosion/irritation Category 1A
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H226	Flammable liquid and vapor
H301	Toxic if swallowed
H302	Harmful if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H401	Toxic to aquatic life
H402	Harmful to aquatic life

NFPA health hazard

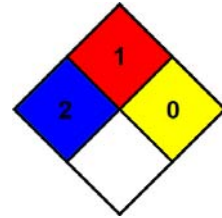
: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health

: 2 Moderate Hazard - Temporary or minor injury may occur

* - Chronic (long-term) health effects may result from repeated overexposure

Flammability

: 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical

: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal Protection

: H

H - Splash goggles, Gloves, Synthetic apron, Vapor respirator

SDS US (GHS HazCom 2012)

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