# 216CS Silver Nitrate Remover

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

## SECTION 1: Identification

### 1.1. Identification

Product form : Mixture

Product name : 216CS Silver Nitrate Remover

Product code : 216CS

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

Use of the substance/mixture : Laboratory chemical

### 1.3. Details of the supplier of the safety data sheet

SIRCHIE
100 Hunter Place
Youngsville, NC 27596 - USA
T 919-554-2244; 800-356-7311 - F 919-554-2266; 800-899-8181
http://www.sirchie.com

### 1.4. Emergency telephone number

Emergency number : 1.800.424.9300
CHEMTREC: 1.800.424.9300

## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

**GHS-US classification**

| | |
|---|---|
| Flammable liquids Category 2 | H225 |
| Acute toxicity (oral) Category 2 | H300 |
| Acute toxicity (dermal) Category 3 | H311 |
| Acute toxicity (inhalation:dust,mist) Category 3 | H331 |
| Skin corrosion/irritation Category 2 | H315 |
| Serious eye damage/eye irritation Category 1 | H318 |
| Germ cell mutagenicity Category 2 | H341 |
| Carcinogenicity Category 2 | H351 |
| Reproductive toxicity Category 2 | H361 |
| Specific target organ toxicity (single exposure) Category 1 | H370 |
| Specific target organ toxicity (repeated exposure) Category 1 | H372 |

Full text of H statements : see section 16

### 2.2. Label elements

**GHS-US labeling**

Hazard pictograms (GHS-US) :

GHS02 GHS05 GHS06 GHS08

Signal word (GHS-US) : Danger

Contains : ammonium chloride; mercury dichloride; methanol

Hazard statements (GHS-US) : H225 - Highly flammable liquid and vapor
H300 - Fatal if swallowed
H311+H331 - Toxic in contact with skin or if inhaled
H315 - Causes skin irritation
H318 - Causes serious eye damage
H341 - Suspected of causing genetic defects (dermal, oral)
H351 - Suspected of causing cancer
H361 - Birth defects (Dermal, oral)
H370 - Causes damage to organs (liver, kidneys) (dermal, oral)
H372 - Causes damage to organs (kidenys, liver, blood) through prolonged or repeated exposure (dermal, oral)

| | | |
|---|---|---|
| Precautionary statements (GHS-US) | : | P201 - Obtain special instructions before use<br>P202 - Do not handle until all safety precautions have been read and understood<br>P210 - Keep away from open flames, sparks. - No smoking<br>P233 - Keep container tightly closed<br>P240 - Ground/bond container and receiving equipment<br>P241 - Use explosion-proof electrical, lighting, ventilating equipment<br>P242 - Use only non-sparking tools<br>P243 - Take precautionary measures against static discharge<br>P260 - Do not breathe vapors, spray<br>P261 - Avoid breathing dust/fume/gas/mist/vapors/spray<br>P264 - Wash exposed skin thoroughly after handling<br>P270 - Do not eat, drink or smoke when using this product<br>P271 - Use only outdoors or in a well-ventilated area<br>P280 - Wear eye protection, protective gloves<br>P301+P310 - If swallowed: Immediately call a poison center/doctor/…<br>P302+P352 - If on skin: Wash with plenty of water/…<br>P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower<br>P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing<br>P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing<br>P307+P311 - If exposed: Call a poison center/doctor<br>P308+P313 - If exposed or concerned: Get medical advice/attention<br>P310 - Immediately call a poison center/doctor/…<br>P311 - Call a poison center/doctor/…<br>P312 - Call a poison center/doctor/… if you feel unwell<br>P314 - Get medical advice/attention if you feel unwell<br>P321 - Specific treatment (see Call poison control center on this label)<br>P330 - Rinse mouth<br>P332+P313 - If skin irritation occurs: Get medical advice/attention<br>P361 - Take off immediately all contaminated clothing<br>P362+P364 - Take off contaminated clothing and wash it before reuse<br>P363 - Wash contaminated clothing before reuse<br>P370+P378 - In case of fire: Use media for surrounding materials to extinguish<br>P403+P233 - Store in a well-ventilated place. Keep container tightly closed<br>P403+P235 - Store in a well-ventilated place. Keep cool<br>P405 - Store locked up<br>P501 - Dispose of contents/container to federal, state and local laws |

### 2.3. Other hazards

No additional information available

### 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 | % | GHS-US classification |
|---|---|---|---|
| methanol | (CAS No) 67-56-1 | 72 | Flam. Liq. 2, H225<br>Acute Tox. 3 (Oral), H301<br>Acute Tox. 3 (Dermal), H311<br>Acute Tox. 3 (Inhalation), H331<br>STOT SE 1, H370 |
| AQUA | (CAS No) 7732-18-5 | 28 | Not classified |
| mercury dichloride | (CAS No) 7487-94-7 | < 5 | Acute Tox. 1 (Oral), H300<br>Acute Tox. 1 (Dermal), H310<br>Skin Corr. 1B, H314<br>Muta. 2, H341<br>Carc. 2, H351<br>Repr. 2, H361<br>STOT RE 1, H372<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |
| ammonium chloride | (CAS No) 12125-02-9 | < 1 | Acute Tox. 4 (Oral), H302<br>Eye Irrit. 2A, H319 |

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).

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

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

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

No additional information available

## 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.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

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.

### 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.

### 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 : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| **AQUA (7732-18-5)** | | |
|---|---|---|
| Not applicable | | |

| **ammonium chloride (12125-02-9)** | | |
|---|---|---|
| ACGIH | ACGIH TWA (mg/m³) | 10 mg/m³ (Ammonium chloride fume; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value) |
| ACGIH | ACGIH STEL (mg/m³) | 20 mg/m³ (Ammonium chloride fume; USA; Short time value; TLV - Adopted Value) |

| **mercury dichloride (7487-94-7)** | | |
|---|---|---|
| ACGIH | ACGIH TWA (mg/m³) | 0.025 mg/m³ (Mercury, Inorganic forms, as Hg; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value) |
| Not applicable | | |

| **methanol (67-56-1)** | | |
|---|---|---|
| ACGIH | ACGIH TWA (ppm) | 200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value) |
| ACGIH | ACGIH STEL (ppm) | 250 ppm (Methanol; USA; Short time value; TLV - Adopted Value) |

### 8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure. Dust/aerosol mask. Gloves. Safety glasses.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

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 : characteristic

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 | : | Water: Solubility in water of component(s) of the mixture :<br>• ammonium chloride: 37 g/100ml • mercury dichloride: 6.9 g/100ml • methanol: >= 100 g/100ml (20 °C) |
| Log Pow | : | 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

Not established.

### 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 acids. Strong bases.

### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Oral: Fatal if swallowed. Dermal: Toxic in contact with skin. Inhalation:dust,mist: Toxic if inhaled.

| **216CS Silver Nitrate Remover** | |
|---|---|
| ATE US (oral) | 17.481 mg/kg body weight |
| ATE US (dermal) | 276.280 mg/kg body weight |
| ATE US (dust, mist) | 0.694 mg/l/4h |

| **ammonium chloride (12125-02-9)** | |
|---|---|
| LD50 oral rat | 1650 mg/kg (Rat; Literature study) |
| ATE US (oral) | 1650.000 mg/kg body weight |

| **mercury dichloride (7487-94-7)** | |
|---|---|
| LD50 oral rat | 1 mg/kg (Rat) |
| LD50 dermal rat | 41 mg/kg (Rat) |
| ATE US (oral) | 1.000 mg/kg body weight |

| mercury dichloride (7487-94-7) | |
|---|---|
| ATE US (dermal) | 41.000 mg/kg body weight |

| methanol (67-56-1) | |
|---|---|
| LD50 oral rat | > 5000 mg/kg (Rat; BASF test; Literature study; 1187-2769 mg/kg bodyweight; Rat; Weight of evidence) |
| LD50 dermal rabbit | 15800 mg/kg (Rabbit; Literature study) |
| LC50 inhalation rat (mg/l) | 85 mg/l/4h (Rat; Literature study) |
| LC50 inhalation rat (ppm) | 64000 ppm/4h (Rat; Literature study) |
| ATE US (oral) | 100.000 mg/kg body weight |
| ATE US (dermal) | 300.000 mg/kg body weight |
| ATE US (gases) | 700.000 ppmV/4h |
| ATE US (vapors) | 3.000 mg/l/4h |
| ATE US (dust, mist) | 0.500 mg/l/4h |

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Suspected of causing genetic defects.
Based on available data, the classification criteria are not met

Carcinogenicity : Suspected of causing cancer.

| mercury dichloride (7487-94-7) | |
|---|---|
| IARC group | 2B - Possibly carcinogenic to humans |

Reproductive toxicity : Suspected of damaging fertility or the unborn child.
Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure) : Causes damage to organs.

Specific target organ toxicity (repeated exposure) : Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

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

## SECTION 12: Ecological information

### 12.1. Toxicity

| ammonium chloride (12125-02-9) | |
|---|---|
| EC50 Daphnia 1 | 161 mg/l (EC50; 48 h) |
| Threshold limit algae 2 | < 70 mg/l (EC50; 240 h) |

| mercury dichloride (7487-94-7) | |
|---|---|
| LC50 fish 1 | 0.03 mg/l (LC50; 96 h) |
| EC50 Daphnia 2 | 0.003 mg/l (EC50; 48 h) |
| Threshold limit algae 2 | 0.07 mg/l (EC0) |

| methanol (67-56-1) | |
|---|---|
| LC50 fish 1 | 15400 mg/l (LC50; EPA 660/3 - 75/009; 96 h; Lepomis macrochirus; Flow-through system; Fresh water; Experimental value) |
| EC50 Daphnia 1 | > 10000 mg/l (EC50; DIN 38412-11; 48 h; Daphnia magna; Static system; Fresh water; Experimental value) |
| LC50 fish 2 | 10800 mg/l (LC50; 96 h; Salmo gairdneri) |

### 12.2. Persistence and degradability

| 216CS Silver Nitrate Remover | |
|---|---|
| Persistence and degradability | Not established. |

| ammonium chloride (12125-02-9) | |
|---|---|
| Persistence and degradability | Readily biodegradable in water. |

| mercury dichloride (7487-94-7) | |
|---|---|
| Persistence and degradability | Biodegradability: not applicable. No (test)data on mobility of the substance available. |
| Biochemical oxygen demand (BOD) | Not applicable |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |

| methanol (67-56-1) | |
|---|---|
| Persistence and degradability | Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil. |
| Biochemical oxygen demand (BOD) | 0.6 - 1.12 g $O_2$/g substance |
| Chemical oxygen demand (COD) | 1.42 g $O_2$/g substance |
| ThOD | 1.5 g $O_2$/g substance |
| BOD (% of ThOD) | 0.8 (Literature study) |

### 12.3. Bioaccumulative potential

| 216CS Silver Nitrate Remover | |
|---|---|
| Bioaccumulative potential | Not established. |

| ammonium chloride (12125-02-9) | |
|---|---|
| Log Pow | -4.37 (Estimated value) |
| Bioaccumulative potential | Bioaccumulation: not applicable. |

| mercury dichloride (7487-94-7) | |
|---|---|
| BCF fish 1 | 10000 (BCF) |
| BCF fish 2 | 500 - 4620 (BCF) |
| BCF other aquatic organisms 1 | 10000 (BCF) |
| Log Pow | 0.1 - 0.22 (Calculated) |
| Bioaccumulative potential | Potential for bioaccumulation (500 ≤ BCF ≤ 5000). |

| methanol (67-56-1) | |
|---|---|
| BCF fish 1 | < 10 (BCF; 72 h; Leuciscus idus) |
| Log Pow | -0.77 (Experimental value; Other) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |

### 12.4. Mobility in soil

| methanol (67-56-1) | |
|---|---|
| Surface tension | 0.023 N/m (20 °C) |
| Log Koc | Koc,PCKOCWIN v1.66; 1; Calculated value |

### 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.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

**Department of Transportation (DOT)**

In accordance with DOT

Not regulated for transport

**TDG**

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

No additional information available

### 15.2. International regulations

**CANADA**

No additional information available

**EU-Regulations**

No additional information available

**National regulations**

No additional information available

### 15.3. US State regulations

No additional information available

## SECTION 16: Other information

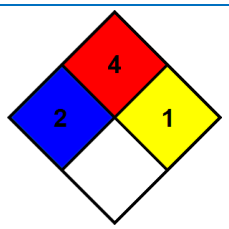
Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H-phrases:

| | |
|---|---|
| H225 | Highly flammable liquid and vapor |
| H300 | Fatal if swallowed |
| H301 | Toxic if swallowed |
| H302 | Harmful if swallowed |
| H310 | Fatal in contact with skin |
| 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 |
| H331 | Toxic if inhaled |
| H341 | Suspected of causing genetic defects |
| H351 | Suspected of causing 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 |
| H400 | Very toxic to aquatic life |
| H410 | Very toxic to aquatic life with long lasting effects |

| | | |
|---|---|---|
| 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 | : | 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily. |
| NFPA reactivity | : | 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently. |




HMIS III Rating

| | | |
|---|---|---|
| Health | : | 2 Moderate Hazard - Temporary or minor injury may occur |
| Flammability | : | 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA) |
| Physical | : | 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors. |
| Personal Protection | : | G<br>G - Safety glasses, Gloves, Vapor respirator |

SDS US (GHS HazCom 2012)

*The information above is believed to be accurate and represents the best information currently available to us . However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.*