



# SILVER(I) HEXAFLUORO-2,4-PENTANEDIONATE - CYCLOOCTADIENE COMPLEX

Safety Data Sheet AKS724

Date of issue: 12/08/2016 Version: 1.0

## SECTION 1: Identification

### 1.1. Product identifier

|                 |  |
|-----------------|--|
| Product name    | : SILVER(I) HEXAFLUORO-2,4-PENTANEDIONATE - CYCLOOCTADIENE COMPLEX   |
| Product code    | : AKS724   |
| Product form    | : Substance  |
| Physical state  | : Solid  |
| Formula         | : C <sub>13</sub> H <sub>13</sub> AgF <sub>6</sub> O <sub>2</sub>  |
| Synonyms        | : SILVER HFAC COD<br>1,5-CYCLOOCTADIENE, SILVER COMPLEX<br>CYCLOOCTA-1,5-DIENE)(HEXAFLUOROACETYLACETONATO)SILVER(I)<br>(1,5-CYCLOOCTADIENE-1,1,1,5,5,5-HEXAFLUOROACETYLACETONATO)SILVER(I) |
| Chemical family | : METAL COMPOUND   |

### 1.2. Recommended use of the chemical and restrictions on use

|                 |  |
|-----------------|--|
| Recommended use | : Chemical intermediate<br>For research use only |
|-----------------|--|

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

**GELEST, INC.**  
11 East Steel Road  
Morrisville, PA 19067  
**USA**  
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST  
[info@gelest.com](mailto:info@gelest.com) - [www.gelest.com](http://www.gelest.com)

### 1.4. Emergency telephone number

|                  |   |
|------------------|---|
| Emergency number | : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International) |
|------------------|---|

## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

#### GHS-US classification

|   |                  |
|---|------------------|
| Skin corrosion/irritation Category 2                        | H315             |
| Serious eye damage/eye irritation Category 2A               | H319             |
| Specific target organ toxicity (single exposure) Category 3 | H335             |
| Full text of H statements                                   | : see section 16 |

### 2.2. Label elements

#### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

|                                   |  |
|-----------------------------------|--|
| Signal word (GHS-US)              | : Warning  |
| Hazard statements (GHS-US)        | : H315 - Causes skin irritation<br>H319 - Causes serious eye irritation<br>H335 - May cause respiratory irritation   |
| Precautionary statements (GHS-US) | : P280 - Wear protective gloves/protective clothing/eye protection/face protection<br>P261 - Avoid breathing dust<br>P264 - Wash hands thoroughly after handling<br>P271 - Use only outdoors or in a well-ventilated area<br>P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing<br>P302+P352 - If on skin: Wash with plenty of soap and water<br>P332+P313 - If skin irritation occurs: Get medical advice/attention<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>P337+P313 - If eye irritation persists: Get medical advice/attention<br>P312 - Call a doctor if you feel unwell<br>P321 - Specific treatment (see first aid instructions on this label)<br>P362+P364 - Take off contaminated clothing and wash it before reuse<br>P403+P233 - Store in a well-ventilated place. Keep container tightly closed<br>P405 - Store locked up |

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P501 - Dispose of contents/container to licensed waste disposal facility

### 2.3. Hazards not otherwise classified (HNOC)

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

No data available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Substance type : Mono-constituent  
Name : SILVER(I) HEXAFLUORO-2,4-PENTANEDIONATE - CYCLOOCTADIENE COMPLEX  
CAS No : 38892-25-0

| Name   | Product identifier  | %        | GHS-US classification   |
|--|---------------------|----------|---|
| Silver(I) hexafluoro-2,4-pentanedionate - cyclooctadiene complex | (CAS No) 38892-25-0 | 95 - 100 | Skin Irrit. 2, H315<br>Eye Irrit. 2A, H319<br>STOT SE 3, H335 |

Full text of hazard classes and H-statements : see section 16

### 3.2. Mixtures

Not applicable

### 4.1. Description of first aid measures

First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.  
First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.  
First-aid measures after skin contact : Wash with plenty of soap and water. Get medical advice/attention.  
First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.  
First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Get medical advice/attention.

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

Symptoms/injuries after inhalation : May cause respiratory irritation.  
Symptoms/injuries after skin contact : Causes skin irritation. Decomposition products are potentially sensitizing.  
Symptoms/injuries after eye contact : Causes serious eye irritation.  
Symptoms/injuries after ingestion : May be harmful if swallowed.

### 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 : Water spray. Foam. Carbon dioxide. Dry chemical.  
Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

### 5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.  
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid contact with skin and eyes. Do not breathe dust.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment as described in Section 8.  
Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

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### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal.

### 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 : Avoid contact with skin and eyes. Do not breathe dust. Avoid dust formation. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Store locked up. Store in cool area in sealed containers.

Storage area : Store in a well-ventilated place. Store away from heat.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Silver(I) hexafluoro-2,4-pentanedionate - cyclooctadiene complex (38892-25-0)

|       |                                |                              |
|-------|--------------------------------|------------------------------|
| ACGIH | ACGIH TWA (mg/m <sup>3</sup> ) | 0.01 mg/m <sup>3</sup> as Ag |
|-------|--------------------------------|------------------------------|

### 8.2. Exposure controls

Appropriate engineering controls : Provide local exhaust or general room ventilation.

Personal protective equipment : Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection : Neoprene or nitrile rubber gloves.

Eye protection : Chemical goggles. Contact lenses should not be worn.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified dust and mist (teal cartridge) respirator.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Solid.

Molecular mass : 423.1 g/mol

Color : Off-white to brown.

Odor : No data available

Odor threshold : No data available

Refractive index : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : 118 - 119 °C

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapor pressure : No data available

Relative vapor density at 20 °C : No data available

Relative density : No data available

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|                      |   |
|----------------------|---|
| Solubility           | : Insoluble in water.<br>Organic solvent:Soluble: THF |
| Log Pow              | : No data available                                   |
| Log Kow              | : No data available                                   |
| Viscosity, kinematic | : No data available                                   |
| Viscosity, dynamic   | : No data available                                   |
| Explosive properties | : No data available                                   |
| Oxidizing properties | : No data available                                   |
| Explosion limits     | : 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

Stable below 25°C. Slowly decomposes at elevated temperature. Turns brown on exposure to sunlight.

### 10.3. Possibility of hazardous reactions

Material decomposes slowly in contact with air by reaction with water.

### 10.4. Conditions to avoid

elevated temperature. sunlight.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Organic acid and fluorinated organic vapors . Silver oxide fumes.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

|  |   |
|--|---|
| Acute toxicity                                     | : Not classified  |
| 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                                    | : Not classified  |
|  | None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen |
| Reproductive toxicity                              | : Not classified  |
| Specific target organ toxicity – single exposure   | : May cause respiratory irritation.   |
| Specific target organ toxicity – repeated exposure | : Not classified  |
| Aspiration hazard                                  | : Not classified  |
| Symptoms/injuries after inhalation                 | : May cause respiratory irritation.   |
| Symptoms/injuries after skin contact               | : Causes skin irritation. Decomposition products are potentially sensitizing.   |
| Symptoms/injuries after eye contact                | : Causes serious eye irritation.  |
| Symptoms/injuries after ingestion                  | : May be harmful if swallowed.  |
| Reason for classification                          | : Expert judgment   |

## SECTION 12: Ecological information

### 12.1. Toxicity

No additional information available

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

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### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Effect on ozone layer : No additional information available  
Effect on the global warming : No known effects from this product.  
GWPmix comment : No known effects from this product.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.  
Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.  
Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

### 14.1. UN number

Not regulated for transport.

### 14.2. UN proper shipping name

Not applicable

### 14.3. Additional information

Other information : No supplementary 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(I) HEXAFLUORO-2,4-PENTANEDIONATE - CYCLOOCTADIENE COMPLEX (38892-25-0)

TSCA Exemption/Exclusion

CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States

#### Silver(I) hexafluoro-2,4-pentanedionate - cyclooctadiene complex (38892-25-0)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

### 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

Full text of H-phrases::

|      |                                  |
|------|----------------------------------|
| H315 | Causes skin irritation           |
| H319 | Causes serious eye irritation    |
| H335 | May cause respiratory irritation |

# SILVER(I) HEXAFLUORO-2,4-PENTANEDIONATE - CYCLOOCTADIENE COMPLEX

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### Abbreviations and acronyms

: Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling.

### HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)

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.

Prepared by safety and environmental affairs.

Date of issue: 12/08/2016      Version: 1.0

SDS US (GHS HazCom 2012) - Custom

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

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