

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/05/2010

Reviewed on 05/04/2010

1 Identification of substance:**Product details:****Product name:** Silver protein for histology, strong**Stock number:** 43970**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com**Information Department:** Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Silver protein (CAS# 9015-51-4)

3 Hazards identification**Hazard description:** Not applicable**Information pertaining to particular dangers for man and environment**

R 52 Harmful to aquatic organisms.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	1
REACTIVITY	1

Health (acute effects) = 1

Flammability = 1

Reactivity = 1

GHS label elements

4.1/3 - Harmful to aquatic life.

Prevention:

Avoid release to the environment.

4 First aid measures**General information**

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing

Do not induce vomiting; immediately call for medical help.

Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Nitrogen oxides (NOx)

Metal oxide fume

Protective equipment:

Wear self-contained respirator.

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Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires: Keep ignition sources away.**Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:**

Store away from oxidizing agents.

Store in the dark.

Store away from water/moisture.

Further information about storage conditions:

This product is hygroscopic.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from humidity and water.

Protect from exposure to light.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Silver, soluble compounds, as Ag

mg/m³

ACGIH TLV

0.01

Austria MAK

0.01

Belgium TWA

0.1

Denmark TWA

0.01

Finland TWA

0.1

France VME

0.1

Germany MAK

0.01

Netherlands TWA

0.01

Japan OEL

0.01

Korea TLV

0.1

Netherlands MAC-TGG

0.01

Norway TWA

0.01

Russia

1-STEL

Sweden NGV

0.1

United Kingdom TWA

0.01

Russia TWA

1-STEL

Switzerland MAK-W

0.01

Finland TWA

0.1

Ireland TWA

0.01

USA PEL

0.01

Additional information: No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

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Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Breathing equipment: Use suitable respirator when high concentrations are present.**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

Form:	Powder
Color:	Pale yellow Brown
Odor:	Odorless

Change in condition**Melting point/Melting range:** Not determined**Boiling point/Boiling range:** Not determined**Sublimation temperature / start:** Not determined**Flash point:** Not applicable**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:****Lower:** Not determined**Upper:** Not determined**Vapor pressure:** Not determined**Density:** Not determined**pH-value (20 g/l) at 20°C (68°F):** 8.95**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Light

Oxidizing agents

Water/moisture

Dangerous reactions No dangerous reactions known**Dangerous products of decomposition:**

Carbon monoxide and carbon dioxide

Metal oxide fume

Nitrogen oxides

11 Toxicological information**Acute toxicity:****Primary irritant effect:****on the skin:** May cause irritation**on the eye:** May cause irritation**Sensitization:** No sensitizing effects known.**Subacute to chronic toxicity:**

Absorption of silver compounds by ingestion, inhalation or through broken skin can cause argyria, a permanent bluish-grey discoloration of the skin, conjunctiva and mucous membranes.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

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12 Ecological information:**Ecotoxical effects:****Remark:** Harmful to aquatic organisms**Additional ecological information:****General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.
Harmful to aquatic organisms**13 Disposal considerations****Product:****Recommendation** Consult state, local or national regulations to ensure proper disposal.**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**14 Transport information**

Not a hazardous material for transportation.

DOT regulations:

Hazard class:	6.1
	None
Identification number:	UN2811
Packing group:	III
Proper shipping name (technical name):	TOXIC SOLID, ORGANIC, N.O.S. (Silver protein for histology, strong)
Label	6.1

Land transport ADR/RID (cross-border)

ADR/RID class:	6.1 (T2) Toxic substances
	None
Danger code (Kemler):	60
UN-Number:	2811
Packaging group:	III
Description of goods:	2811 TOXIC SOLID, ORGANIC, N.O.S. (Silver protein for histology, strong)

Maritime transport IMDG:

IMDG Class:	6.1
	None
UN Number:	2811
Label	6.1
Packaging group:	III
Marine pollutant:	No
Proper shipping name:	TOXIC SOLID, ORGANIC, N.O.S. (Silver protein for histology, strong)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class:	6.1
	None
UN/ID Number:	2811
Label	6.1
Packaging group:	III
Proper shipping name:	TOXIC SOLID, ORGANIC, N.O.S. (Silver protein for histology, strong)

Transport/Additional information: Not dangerous according to the above specifications.**15 Regulations****Product related hazard informations:****Risk phrases:**

52 Harmful to aquatic organisms.

Safety phrases:

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

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National regulations

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only.

The components of this product are listed on the Canadian Domestic Substances List (DSL) and the Canadian Non-Domestic Substances List (NDSL).

Information about limitation of use:

For use only by technically qualified individuals.

This product contains silver and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

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