

1 Identification

Product identifier

Product name: Silver cyanide

Stock number: 11424

CAS Number:

506-64-9

EC number:

208-046-6

Index number:

006-007-00-5

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

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.

Acute Tox. 1 H310 Fatal in contact with skin.

Acute Tox. 2 H330 Fatal if inhaled.



GHS05 Corrosion

Met. Corr.1 H290 May be corrosive to metals.

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS05 GHS06

Signal word Danger

Hazard statements

H290 May be corrosive to metals.

H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.

H315 Causes skin irritation.

H318 Causes serious eye damage.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P284 Wear respiratory protection.

P262 Do not get in eyes, on skin, or on clothing.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P320 Specific treatment is urgent (see on this label).

P361 Remove/Take off immediately all contaminated clothing.

P302+P350 IF ON SKIN: Gently wash with plenty of soap and water.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

D1A - Very toxic material causing immediate and serious toxic effects

D2B - Toxic material causing other toxic effects



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH **3** Health (acute effects) = 3

FIRE **0** Flammability = 0

REACTIVITY **1** Physical Hazard = 1

Product name: Silver cyanide

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

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3 Composition/information on ingredients

Chemical characterization: Substances
CAS# Description:
506-64-9 Silver cyanide
Concentration: ≤100%
Identification number(s):
EC number: 208-048-6
Index number: 006-007-00-5

4 First-aid measures

Description of first aid measures
General information
Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing has been completely removed.
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.
Information for doctor
Most important symptoms and effects, both acute and delayed
Causes skin irritation.
Fatal if inhaled.
Fatal in contact with skin.
Fatal if swallowed.
Causes serious eye damage.
Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents Product is not flammable. Use fire-fighting measures that suit the surrounding fire.
For safety reasons unsuitable extinguishing agents Carbon dioxide
Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Hydrogen cyanide (HCN)
Nitrogen oxides (NOx)
Silver oxides
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up:
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Prevention of secondary hazards: No special measures required.
Reference to other sections
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
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Open and handle container with care.
Information about protection against explosions and fires: The product is not flammable
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility:
Store in the dark.
Do not store together with acids.
Store away from oxidizing agents.
Store away from metals.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from exposure to light.
Specific end use(s) No further relevant information available.

Product name: Silver cyanide

(Contd. of page 2)

8 Exposure controls/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.

Control parameters

Components with limit values that require monitoring at the workplace:

506-64-9 Silver cyanide (100.0%)

PEL (USA)	Long-term value: 5 mg/m ³ as CN; Skin
REL (USA)	Ceiling limit value: 5* mg/m ³ , 4.7* ppm as CN; *10-min
TLV (USA)	Ceiling limit value: 5 mg/m ³ , 4.7 ppm as CN; Skin
EL (Canada)	Short-term value: 0.03 mg/m ³ Long-term value: 0.01 mg/m ³ as Ag

Additional information: No data

Exposure controls

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.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Use self-contained respiratory protective device in emergency situations.

Recommended filter device for short term use:

Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protection of hands:

Impervious gloves

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

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Penetration time of glove material (in minutes) Not determined

Eye protection: Tightly sealed goggles

Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form:	Powder
Odor:	Odorless
Odor threshold:	Not determined.

pH-value: Not applicable.

Change in condition

Melting point/Melting range:	320 °C (608 °F) (dec)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Not determined.

Danger of explosion: Not determined.

Explosion limits:

Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not applicable.
Density at 20 °C (68 °F):	3.95 g/cm ³ (32.963 lbs/gal)
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water at 20 °C (68 °F):	0.00023 g/l
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
Other information	No further relevant information available.

10 Stability and reactivity

Reactivity Contact with acids liberates very toxic gas.

Chemical stability Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions

Reacts with strong oxidizing agents

Contact with acids liberates very toxic gas.

Conditions to avoid No further relevant information available.

Incompatible materials:

Oxidizing agents

Metals

Acids




Light

Hazardous decomposition products:

Carbon monoxide and carbon dioxide

Hydrogen cyanide

(Contd. on page 4)
USA

Product name: Silver cyanide	
Nitrogen oxides Silver oxides	(Contd. of page 3)
11 Toxicological information Information on toxicological effects Acute toxicity: Fatal if inhaled. Fatal in contact with skin. Fatal if swallowed. Danger through skin absorption. The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product. LD/LC50 values that are relevant for classification: Oral LD50 123 mg/kg (rat) Skin irritation or corrosion: Causes skin irritation. Eye irritation or corrosion: Causes serious eye damage. Sensitization: No sensitizing effects known. Germ cell mutagenicity: No effects known. Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. Reproductive toxicity: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Specific target organ system toxicity - single exposure: No effects known. Aspiration hazard: No effects known. Subacute to chronic toxicity: No effects known. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Carcinogenic categories OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.	
12 Ecological information Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Ecotoxical effects: Remark: Very toxic for aquatic organisms Additional ecological information: General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow product to reach ground water, water course or sewage system, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. May cause long lasting harmful effects to aquatic life. Avoid transfer into the environment. Very toxic for aquatic organisms Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.	
13 Disposal considerations Waste treatment methods 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	
UN-Number DOT, IMDG, IATA	UN1684
UN proper shipping name DOT IMDG IATA	Silver cyanide SILVER CYANIDE, MARINE POLLUTANT SILVER CYANIDE
Transport hazard class(es) DOT	
	
Class Label Class Label IMDG	6.1 Toxic substances. 6.1 6.1 (T5) Toxic substances 6.1
	
Class Label IATA	6.1 Toxic substances. 6.1
	
Class Label	6.1 Toxic substances. 6.1

Product name: Silver cyanide	
(Contd. of page 4)	
Packing group DOT, IMDG, IATA	II
Environmental hazards: Marine pollutant (IMDG):	Environmentally hazardous substance, solid; Marine Pollutant Yes (P) Symbol (fish and tree)
Special precautions for user EMS Number: Segregation groups	Warning: Toxic substances F-A, S-A Cyanides, heavy metals and their salts (including their organometallic compounds)
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT Marine Pollutant (DOT): Remarks:	Yes (P) Special marking with the symbol (fish and tree).
UN "Model Regulation":	UN1684, Silver cyanide, 6.1, II

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)
Hazard pictograms



Signal word Danger
Hazard statements
H290 May be corrosive to metals.
H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.
H315 Causes skin irritation.
H318 Causes serious eye damage.
Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P284 Wear respiratory protection.
P262 Do not get in eyes, on skin, or on clothing.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P320 Specific treatment is urgent (see on this label).
P361 Remove/Take off immediately all contaminated clothing.
P302+P350 IF ON SKIN: Gently wash with plenty of soap and water.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)

506-64-9 Silver cyanide

California Proposition 65
Prop 65 - Chemicals known to cause cancer Substance is not listed.
Prop 65 - Developmental toxicity Substance is not listed.
Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male

506-64-9 Silver cyanide

Information about limitation of use:
For use only by technically qualified individuals.
This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.
Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Date of preparation / last revision 01/27/2017 / -
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)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
P: Marine Pollutant
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)
Met. Corr. 1: Corrosive to metals, Hazard Category 1
Acute Tox. 2: Acute toxicity, Hazard Category 2
Acute Tox. 1: Acute toxicity, Hazard Category 1
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1