
1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name SILVER CYANIDE
Synonyms ARGENTOUS CYANIDE

1.2 Uses and uses advised against

Uses INDUSTRIAL APPLICATIONS • SILVER PLATING • SPECIALTY CHEMICAL

1.3 Details of the supplier of the product

Supplier name DUBOIS CHEMICALS AUSTRALIA PTY LIMITED
Address 305 Frankston Dandenong Rd, Dandenong South, VIC, 3175, AUSTRALIA
Telephone (03) 9768 3860
Email sales@duboischchemicals.com.au
Website <http://duboischchemicals.com.au/>

1.4 Emergency telephone numbers

Emergency 13 11 26 (Poisons Information Centre)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Acute Toxicity: Oral: Category 1
Acute Toxicity: Skin: Category 2
Acute Toxicity: Inhalation: Category 2
Contact with acids liberates very toxic gas.

Environmental Hazards

Aquatic Toxicity (Chronic): Category 1

2.2 GHS Label elements

Signal word DANGER

Pictograms**Hazard statements**

AUH032 Contact with acids liberates very toxic gas.
H300 Fatal if swallowed.
H310 Fatal in contact with skin.
H330 Fatal if inhaled.
H410 Very toxic to aquatic life with long lasting effects.

PRODUCT NAME SILVER CYANIDE

Prevention statements

| | |
|------|---|
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P262 | Do not get in eyes, on skin, or on clothing. |
| P264 | Wash thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. |
| P284 | Wear respiratory protection. |

Response statements

| | |
|-------------|--|
| P302 + P352 | IF ON SKIN: Wash with plenty of water. |
| P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P310 | Immediately call a POISON CENTRE or doctor/physician. |
| P320 | Specific treatment is urgent - see first aid instructions. |
| P330 | Rinse mouth. |
| P361 + P364 | Take off immediately all contaminated clothing and wash it before reuse. |
| P391 | Collect spillage. |

Storage statements

| | |
|-------------|--|
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |

Disposal statements

| | |
|------|--|
| P501 | Dispose of contents/container in accordance with relevant regulations. |
|------|--|

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

| Ingredient | CAS Number | EC Number | Content |
|----------------|------------|-----------|---------|
| SILVER CYANIDE | 506-64-9 | 208-048-6 | >98% |

4. FIRST AID MEASURES

4.1 Description of first aid measures

| | |
|-----------------------------|---|
| Eye | If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes. |
| Inhalation | If inhaled, remove from contaminated area. Apply artificial respiration if not breathing. Do not give direct mouth-to-mouth resuscitation. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area. |
| Skin | If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor. |
| Ingestion | For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Urgent hospital treatment is likely to be needed. |
| First aid facilities | Eye wash facilities and safety shower should be available. |

4.2 Most important symptoms and effects, both acute and delayed

Symptoms include nausea, vomiting, headache, dyspnoea, increased respiratory rate, hypertension, tachycardia, altered level of consciousness and seizures. High level exposure results in hypotension, bradycardia, respiratory depression, cardiovascular collapse and coma.

4.3 Immediate medical attention and special treatment needed

Remove patient from source of exposure and administer antidote immediately. Follow instructions as per antidote kit. Remove contaminated clothing from patient and wash exposed skin with soap and water if safe to do so, taking care to avoid skin contact. Seek immediate medical treatment.

5. FIRE FIGHTING MEASURES

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5.1 Extinguishing media

Carbon dioxide extinguishers should not be used as contact with cyanides may result in the evolution of flammable hydrogen cyanide gas.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve flammable and toxic hydrogen cyanide gas in contact with water, moist air, acids, acid salts or carbon dioxide.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic and flammable gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire.

5.4 Hazchem code

2X
2 Fine Water Spray.
X Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store (bulk) in a secured, windowless but well ventilated area with a minimum 2 metre fence with rain and fire proof cover, removed from direct sunlight, incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Containers should be stored off ground.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

| Ingredient | Reference | TWA | | STEL | |
|--|----------------|-----|-------------------|------|-------------------|
| | | ppm | mg/m ³ | ppm | mg/m ³ |
| Cyanides (as CN) | SWA [AUS] | -- | 5 | -- | -- |
| Cyanides and cyanide salts | SWA [Proposed] | -- | 1 | -- | -- |
| Cyanides and cyanide salts (peak limitation) | SWA [Proposed] | -- | 5 (Peak) | -- | -- |

Biological limits

No biological limit values have been entered for this product.

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8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PPE

| | |
|--------------------|---|
| Eye / Face | Wear dust-proof goggles. |
| Hands | Wear full-length butyl or full-length neoprene gloves. |
| Body | Wear coveralls and rubber or PVC boots. With prolonged use, wear impervious coveralls. |
| Respiratory | Wear a Full-face Type B2/3 (Acid gas and Hydrogen cyanide) respirator. With prolonged use, wear an Air-line respirator. |



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | |
|----------------------------------|-----------------------|
| Appearance | WHITE TO GREY POWDER |
| Odour | ODOURLESS |
| Flammability | NON FLAMMABLE |
| Flash point | NOT RELEVANT |
| Boiling point | NOT AVAILABLE |
| Melting point | 320°C (Approximately) |
| Evaporation rate | NOT AVAILABLE |
| pH | NOT AVAILABLE |
| Vapour density | NOT AVAILABLE |
| Relative density | 3.94 |
| Solubility (water) | INSOLUBLE |
| Vapour pressure | NOT AVAILABLE |
| Upper explosion limit | NOT RELEVANT |
| Lower explosion limit | NOT RELEVANT |
| Partition coefficient | NOT AVAILABLE |
| Autoignition temperature | NOT AVAILABLE |
| Decomposition temperature | NOT AVAILABLE |
| Viscosity | NOT AVAILABLE |
| Explosive properties | NOT AVAILABLE |
| Oxidising properties | NOT AVAILABLE |
| Odour threshold | NOT AVAILABLE |

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), reducing agents (e.g. sulphites), water (evolving toxic and flammable gases), nitrating agents, indium, dinitrogen tetroxide, nitrogen-fluorine compound, heat and ignition sources. Will attack some forms of rubber and plastic.

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Fatal if swallowed, in contact with skin, and if inhaled.

Information available for the ingredients:

| Ingredient | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|----------------|-----------------|--------------------|-----------------|
| SILVER CYANIDE | 175 mg/kg (rat) | > 2000 mg/kg (rat) | -- |

Skin Contact may result in irritation, redness, pain, rash, dermatitis and possible burns.

Eye Contact may result in irritation, lacrimation, pain, redness and possible burns.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Insufficient data available to classify as a mutagen.

Carcinogenicity Insufficient data available to classify as a carcinogen.

Reproductive Insufficient data available to classify as a reproductive toxin.

STOT - single exposure Over exposure may result in weakness, headache, nausea, vomiting, confusion, nervousness, breathing difficulties, convulsions, and death from respiratory arrest.

STOT - repeated exposure Individuals with pre-existing kidney, respiratory, skin or thyroid diseases are at a greater risk of developing toxic cyanide effects. Cyanide is reported to cause damage to the central nervous system. Death usually occurs due to respiratory arrest.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Cyanides are acutely and chronically toxic to aquatic organisms and to mammals.

12.2 Persistence and degradability

Cyanides have been shown to be inherently biodegradable (99%) after adaptation of organisms to non-toxic concentrations (ECHA).

12.3 Bioaccumulative potential

Cyanides have a log Kow less than 1 and bioconcentration factor (BCF) of approximately 3; therefore, cyanides are not considered to be bioaccumulative (ECHA).

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

Avoid contamination of drains and waterways.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal For small quantities, wear protective equipment and collect (if solid) or absorb with vermiculite or similar (if liquid). Treat with strongly alkaline solution of calcium hypochlorite (CAUTION: Toxic gases may be generated), let stand for 24 hours, absorb with sand or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



PRODUCT NAME SILVER CYANIDE

| | LAND TRANSPORT (ADG) | SEA TRANSPORT (IMDG / IMO) | AIR TRANSPORT (IATA / ICAO) |
|------------------------------------|----------------------|----------------------------|-----------------------------|
| 14.1 UN Number | 1684 | 1684 | 1684 |
| 14.2 Proper Shipping Name | SILVER CYANIDE | SILVER CYANIDE | SILVER CYANIDE |
| 14.3 Transport hazard class | 6.1 | 6.1 | 6.1 |
| 14.4 Packing Group | II | II | II |

14.5 Environmental hazards

Marine Pollutant.

14.6 Special precautions for user

| | |
|---------------------|----------|
| Hazchem code | 2X |
| Specific EPG | 6.0.009 |
| EmS | F-A, S-A |

15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

| | |
|---------------------------|---|
| Poison schedule | Classified as a Schedule 7 (S7) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP). |
| Classifications | Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7). |
| Inventory listings | AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals) All components are listed on AIIC, or are exempt. EUROPE: EINECS (European Inventory of Existing Chemical Substances) All components are listed on EINECS, or are exempt. |

16. OTHER INFORMATION

| | |
|-------------------------------|--|
| Additional information | <p>RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.</p> <p>PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.</p> <p>HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.</p> |
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PRODUCT NAME SILVER CYANIDE**Abbreviations**

| | |
|-------------------|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| CAS # | Chemical Abstract Service number - used to uniquely identify chemical compounds |
| CNS | Central Nervous System |
| EC No. | EC No - European Community Number |
| EMS | Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods) |
| GHS | Globally Harmonized System |
| GTEPG | Group Text Emergency Procedure Guide |
| IARC | International Agency for Research on Cancer |
| LC50 | Lethal Concentration, 50% / Median Lethal Concentration |
| LD50 | Lethal Dose, 50% / Median Lethal Dose |
| mg/m ³ | Milligrams per Cubic Metre |
| OEL | Occupational Exposure Limit |
| pH | relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). |
| ppm | Parts Per Million |
| STEL | Short-Term Exposure Limit |
| STOT-RE | Specific target organ toxicity (repeated exposure) |
| STOT-SE | Specific target organ toxicity (single exposure) |
| SUSMP | Standard for the Uniform Scheduling of Medicines and Poisons |
| SWA | Safe Work Australia |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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