

SAFETY DATA SHEET

Section 1: Identification of the chemical product and of the supplier

Identification of the chemical product Cyanco® Cianuro de sodio, Ladrillos 98% ± 1%

Recommended use of the chemical and restrictions on use

Recommended use Electroplating agent Gold mining
Recommended restrictions For industrial use only.

Manufacturer/Importer/Supplier/Distributor information

Company name Cyanco
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Sugar Land, TX 77479
USA

Website www.Cyanco.com

Email sales@cyanco.com

Cyanco Safety Hotline 832.590.3648

Emergency telephone number USA 1.800.424.9300, Access Code: CCN6043

Emergency telephone number Mexico & International: 001.703.527.3887

Emergency telephone number Chile: 56 2 2581 4934

Section 2: Hazards identification

Classification according to NCh382

UN number UN1689
UN proper shipping name SODIUM CYANIDE, SOLID
Transport hazard class(es)
Class 6.1
Packing group I

Label according to NCh2190



Classification according to GHS

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, oral	Category 1
	Acute toxicity, dermal	Category 1
	Acute toxicity, inhalation	Category 1
	Specific target organ toxicity, repeated exposure	Category 1 (Thyroid)
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

Label elements



Signal word Danger

Hazard statement May be corrosive to metals. Fatal if swallowed. Fatal in contact with skin. Fatal if inhaled. Causes damage to organs (Thyroid) through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention	Keep only in original packaging. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing. Wear respiratory protection.
Response	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. Remove/Take off immediately all contaminated clothing. Absorb spillage to prevent material-damage. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in a corrosion resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Safety signs according to NCh1411/4



Specific classification	Not applicable.
Specific label	Not applicable.
Description of hazards	May be corrosive to metals. Fatal if swallowed. Fatal in contact with skin. Fatal if inhaled. Causes damage to organs (Thyroid) through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.
Description of specific hazards	May be corrosive to metals. Fatal if inhaled. Fatal if swallowed. Fatal in contact with skin. Causes damage to organs through prolonged or repeated exposure. Dangerous for the environment if discharged into watercourses.
Other hazards	Contact with acids liberates very toxic gas.

Section 3: Composition/information on ingredients

Substance

Systematic chemical name	Common or generic name	CAS number	Concentration range
Sodium cyanide		143-33-9	98% ± 1%

Section 4: First-aid measures

Inhalation	Call a physician if symptoms develop or persist. If patient finds breathing difficult and develops a bluish discoloration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. If breathing stops, provide artificial respiration. Get medical attention immediately.
Skin contact	Take off immediately all contaminated clothing. Wash with plenty of soap and water. Call a physician or poison control center immediately. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Expected acute effects	In most cases, cyanide poisoning causes a deceptively healthy pink to red skin color. However, if a physical injury or lack of oxygen is involved, the skin color may be bluish. Reddening of the eyes and pupil dilation are symptoms of cyanide poisoning. Cyanosis (blue discoloration of the skin) tends to be associated with severe cyanide poisonings. Effects of inhalation overexposure are often delayed, possibly due to the slow formation of cyanide anions in the body. These cyanide anions prevent the body from using oxygen and can lead to internal asphyxiation. Early symptoms may include nose and throat irritation, flushing of the face, and chest tightness. Higher concentrations may produce headache, nausea, vomiting, respiratory depression, weakness, blood changes, thyroid changes, irregular heart beat, abdominal pain, convulsions, shock, unconsciousness and death, depending on concentration and time of exposure. This highly toxic material has insufficient warning properties to prevent personnel from working in contaminated atmospheres. Gastric irritation may occur from ingestion. Other symptoms parallel those from inhalation exposure. May cause skin irritation. May be absorbed through skin with health effects to parallel those of inhalation. Splashes may cause eye irritation with redness and pain.
Expected delayed effects	Causes damage to organs (Thyroid) through prolonged or repeated exposure.
Most important symptoms/effects	Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects. May be fatal if inhaled, absorbed through skin, or swallowed.

Protection for first-aid providers	At all places where there is a risk of cyanide poisoning, items to facilitate the prompt and effective treatment of cyanide poisoning (as determined by the treatment protocol to be employed) should be kept in an accessible and convenient location. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.
Special notes for treating physician	CYANIDES: may be fatal if absorbed through the skin, if swallowed or inhaled. Get medical attention immediately. It is highly recommended that procedures be established by your company's physician, concerning first aid and medical treatment to be used in case of cyanide poisoning. Such procedure may include the administration of oxygen, activated charcoal, or antidotes such as Amyl nitrate, sodium thiosulfate, Sodium nitrate or Methylene blue. Call a Poison Control Center for guidance. If patient exhibits signs suggestive of cyanide poisoning following the exposure, and has not responded to amyl nitrite, inject intravenously 10 milliliters of a 3% solution of sodium nitrite at a rate not greater than 2.5 to 5.0 milliliters per minute. Follow directly with 50 milliliters of a 25% solution of sodium thiosulfate at the same rate by the same route. Keep patient under observation. Oxygen therapy may be of value in combination with nitrite and sodium thiosulfate treatment. If signs of poisoning persist or reappear, repeat nitrite and thiosulfate injections 1 hour later in one half the original doses.

Section 5: Fire-fighting measures

Extinguishing media	Powder.
Inappropriate extinguishing media	Carbon Dioxide. Water. Do not use water jet as an extinguisher, as this will spread the fire.
Products formed during combustion and thermal degradation	Hydrogen cyanide. Ammonia.
Specific associated hazards	Fire may produce irritating, corrosive and/or toxic gases.
Specific extinguishing methods	In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.
Precautions for emergency personnel and/or firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Decomposes on heating emitting toxic fumes, including those of hydrogen cyanide and ammonia.

Section 6: Accidental release measures

Personal precautions	Avoid any exposure. Avoid dust formation. Local authorities should be advised if significant spillages cannot be contained. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Keep unnecessary personnel away.
Protective equipment	Wear appropriate protective equipment and clothing during clean-up. See Section 8 of the SDS for Personal Protective Equipment.
Emergency procedures	Clean up in accordance with all applicable regulations. Should not be released into the environment. Large Spills: Dike far ahead of liquid spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Absorb spill with vermiculite or other inert material. Clean contaminated surface thoroughly. Avoid dust formation. Never return spills to original containers for re-use.
Environmental precautions	Prevent further leakage or spillage if safe to do so.
Methods and material for containment, confinement, and/or abatement	Clean up in accordance with all applicable regulations. Allow 1 hour for complete decomposition before washing spillage area down with large quantities of water to ensure maximum dilution. Spillage area and contaminated solids can be detoxified by treatment with an excess of dilute sodium hypochlorite, calcium hypochlorite, or ferrous sulfate after the addition of soda ash or lime to raise the pH to greater than 10.5. Should not be released into the environment. Never return spills in original containers for re-use.
Methods and materials for clean-up	
Recovery	Clean up in accordance with all applicable regulations. Spillage area and contaminated solids can be detoxified by treatment with an excess of dilute sodium hypochlorite, calcium hypochlorite, or ferrous sulfate after the addition of soda ash or lime to raise the pH to greater than 10.5. Should not be released into the environment. Allow 1 hour for complete decomposition before washing spillage area down with large quantities of water to ensure maximum dilution. Never return spills to original containers for re-use.
Neutralization	Do not use a neutralizing agent where runoff can enter nearby streams, rivers, and other surface waterways. Contact with acids liberates very toxic gas.

Final disposal Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional measures for preventing disasters Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Avoid release to the environment.

Section 7: Handling and storage

Handling

Precautions for safe handling Avoid any exposure. Observe good industrial hygiene practices. Use with adequate ventilation. Use Personal Protective Equipment recommended in section 8 of the SDS. Do not breathe dust. Do not get in eyes, on skin, or on clothing.

Operational and technical measures Handle and open container with care. Use only outdoors or in a well-ventilated area. Container must be kept tightly closed.

Other precautions Minimize dust generation and accumulation. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Avoid discharge into drains, water courses or onto the ground. Avoid release to the environment.

Prevention of contact Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Ensure safe disposal of contaminated clothing.

Storage

Conditions for safe storage Store locked up. Store in a cool, dry place out of direct sunlight. Keep container tightly closed. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

Technical measures No specific recommendations.

Incompatible substances and mixtures Acids. Strong oxidizing agents. Metals. For further information, please refer to section 10 of the SDS.

Materials for containers and/or packaging Store in corrosive resistant container with a resistant inner liner. Store in original tightly closed container.

Section 8: Exposure controls/personal protection

Maximum permissible concentration

Chile. OELs. Decree No. 594, arts. 61 & 66: Regulating Basic Health and Environmental Conditions in the Workplace and Setting Permissible Levels of Exposure to Chemical and Physical Agents

Material	Type	Value
Sodium cyanide (CAS 143-33-9)	LPA	5 mg/m3
		4.7 ppm

US. ACGIH Threshold Limit Values

Material	Type	Value
Sodium cyanide (CAS 143-33-9)	Ceiling	5 mg/m3

Biological limit values

Chile. BELs. Biological Tolerance Limits (LBTs) (Reg. 594/1999, art. 113, as amended on Jan 24, 2015)

Material	Value	Determinant	Specimen	Sampling Time
Sodium cyanide (CAS 143-33-9)	6 µg/g	Tiocianatos	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

OELs. Decree No. 594, arts. 61 & 66: Regulating Basic Health and Environmental Conditions in the Workplace and Setting Permissible Levels of Exposure to Chemical and Physical Agents

Sodium cyanide (CAS 143-33-9) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Sodium cyanide (CAS 143-33-9) Danger of cutaneous absorption

Individual protection measures, such as personal protective equipment

Respiratory protection	In case of inadequate ventilation or risk of inhalation of dust, use a suitable NIOSH approved respirator with an appropriate particulate filter. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. A respiratory protection program that meets NCh requirements must be followed whenever work place conditions warrant a respirator's use.
Hand protection	Wear protective gloves. Natural rubber. Nitrile. Polychloroprene w / natural rubber latex. Polyvinyl chloride (PVC). Suitable gloves can be recommended by the glove supplier.
Eye protection	Impact resistant chemical protection goggles. Face shield with forehead protector.
Skin and body protection	Full-length face shields with forehead protection shall be worn by employees engaged in any operation wherein there is danger or likelihood that dusts, molten salts, or solutions of cyanide salts may contact the face. Wear a full chemical protective suit. (Tychem®). Rubber boots. Use gloves with long sleeves. Suitable items can be recommended by the protective equipment supplier or by a qualified industrial hygienist. An emergency shower or water supply should be readily accessible to the work area.
Engineering measures	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Section 9: Physical and chemical properties

Appearance

Physical state	Solid.
Form	Solid.
Color	White
Odor	No odor. (May have a bitter almond-like odor if hydrogen cyanide is present.)
pH	12 (aqueous solution)
Melting point/freezing point	1043.6 °F (562 °C)
Initial boiling point and boiling range	2726.6 °F (1497 °C)
Flash point	None.
Explosivity limits	Not applicable.
Vapor pressure	100 Pa (1472 °F (800 °C))
Relative density	Not available.
Density	1.595 g/cm ³ at 20 °C
Solubility(ies)	
Solubility (water)	580 g/l at 77°F
Partition coefficient (n-octanol/water)	-0.44 calculated
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Odor threshold	Not available.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not combustible.
Viscosity	Not applicable.

Section 10: Stability and reactivity

Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Contact with acids liberates very toxic gas. Reacts with water liberating toxic hydrogen cyanide gas.
Conditions to avoid	Moisture. Contact with incompatible materials.
Incompatible materials	Acids. Oxidizing agents. Metals. Moisture. Halogens.
Hazardous decomposition products	Thermal decomposition or combustion may liberate toxic gases or fumes. Hazardous combustion products: Hydrocyanic acid (hydrogen cyanide). Ammonia.

Section 11: Toxicological information

Information on toxicological effects

Acute toxicity	Fatal if inhaled. Fatal in contact with skin. Fatal if swallowed.
Skin corrosion/irritation	May be irritating.
Serious eye damage/eye irritation	May cause eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Causes damage to organs (Thyroid) through prolonged or repeated exposure.
Aspiration hazard	Not an aspiration hazard.
Related symptoms	Headache. Nausea, vomiting. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects. May be fatal if inhaled, absorbed through skin, or swallowed.

Section 12: Ecological information

Ecotoxicity	Very toxic to aquatic life with long lasting effects.
Persistence and degradability	No data is available on the degradability of this substance.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.

Section 13: Disposal considerations

Remains/residues	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated container, packaging and contaminated materials	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
Contaminated materials	Dispose in accordance with all applicable regulations.

Section 14: Transport information

Classification according to NCh382

UN number	UN1689
ERG number	157
UN proper shipping name	SODIUM CYANIDE, SOLID
Transport hazard class(es)	
Class	6.1
Subsidiary risk	-
Packing group	I

IATA

UN number	UN1689
UN proper shipping name	Sodium cyanide, solid
Transport hazard class(es)	
Class	6.1
Subsidiary risk	-
Packing group	I
Environmental hazards	Yes
ERG Code	6L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1689
UN proper shipping name	SODIUM CYANIDE, SOLID
Transport hazard class(es)	
Class	6.1
Subsidiary risk	-
Packing group	I

Environmental hazards

Marine pollutant Yes

EmS F-A, S-A

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78 and the IBC Code

Section 15: Regulatory information

National regulations

NCh.382/2013 - Hazardous materials - Classification

NCh.2190/2003 - Transportation of hazardous substances - Signs for risk identification

NCh.1411/4/1978 - Safety signs for risk identification

NCh.2245/2015 - Safety Data Sheet for chemicals

D.S. 594/1999 - Decree Regulating Basic Health and Environmental Conditions in the Workplace

D.S. 298/1994 - Regulates the road transportation of hazardous substances

D.S. 148/2003 - Health Regulations on Hazardous Waste Management

D.S. 43/2015 - Storage of hazardous substances

Exempt Resolution 408/2016 Approves listing of hazardous substances for health

Controlled chemical substances susceptible to manufacturing of narcotics and psychotropic drugs, Lists I, II, III (Decree 1358, published April 17, 2007)

Not listed.

Prohibited Substances (Reg. 594/1999, art. 65, as of Nov. 8, 2012)

Not listed.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Montreal Protocol

Not applicable.

Kyoto protocol

Not applicable.

Basel Convention

Not applicable.

Section 16: Other information

List of abbreviations

IATA: International Air Transport Association.

IMDG: International Maritime Dangerous Goods.

IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.

MARPOL: International Convention for the Prevention of Pollution from Ships.

References

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

HSDB® - Hazardous Substances Data Bank

IARC Monographs. Overall Evaluation of Carcinogenicity

Cyanco cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.