



MATERIAL SAFETY DATA SHEET
Sodium cyanide

Section 1 - Chemical Product and Company Identification

MSDS Name: Sodium cyanide
Catalog Numbers: S/3480/53, S/3480/70, S/3481/50, S/3481/53, S/3481/70
Synonyms: Hydrocyanic acid, sodium salt; Cyanide of sodium; Prussiate of soda; NaCN.
Company Identification: Fisher Scientific UK
 Bishop Meadow Road, Loughborough
 Leics. LE11 5RG
For information in Europe, call: (01509) 231166
Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#
143-33-9	Sodium cyanide	> 95	205-599-4

Hazard Symbols: T+ N



Risk Phrases: 26/27/28 32 50/53

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Very toxic by inhalation, in contact with skin and if swallowed. Contact with acids liberates very toxic gas. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Hygroscopic (absorbs moisture from the air).

Potential Health Effects

- Eye:** Contact with eyes may cause severe irritation, and possible eye burns. Cyanide can be absorbed through the eyes causing the symptoms described for inhalation.
- Skin:** May be fatal if absorbed through the skin. If absorbed, causes symptoms similar to those of ingestion. Causes severe skin irritation and possible burns. Substance is readily absorbed through the skin.
- Ingestion:** May be fatal if swallowed. May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. May cause tissue anoxia, characterized by weakness, headache, dizziness, confusion, cyanosis (bluish skin due to deficient oxygenation of the blood), weak and irregular heart beat, collapse, unconsciousness, convulsions, coma and death. Human fatalities have been reported from acute poisoning. Contact with stomach acid releases poisonous hydrogen cyanide.
- Inhalation:** May be fatal if inhaled. May be metabolized to cyanide which in turns act by inhibiting cytochrome oxidase impairing cellular respiration. Inhalation may result in symptoms similar to cyanide poisoning which include tachypnea, hyperpnea (abnormally rapid or deep breathing), and dyspnea (labored breathing) followed rapidly by respiratory depression. Pulmonary edema may occur.

Chronic: May interfere with iodine uptake of the thyroid gland and enlarge it. Chronic exposure to cyanide solutions may lead to the development of a "cyanide" rash, characterized by itching, and by macular, papular, and vesicular eruptions, and may be accompanied by secondary infections. Exposure to small amounts of cyanide compounds over long periods of time is reported to cause loss of appetite, headache, weakness, nausea, dizziness, and symptoms of irritation of the upper respiratory tract and eyes.

Section 4 - First Aid Measures

Eyes: Treat patient as for inhalation. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

Skin: SPEEDY ACTION IS CRITICAL, GET MEDICAL AID IMMEDIATELY. POISON material. In case of contact, get medical aid immediately. Immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion: POISON material. If swallowed, get medical aid immediately. Only induce vomiting if directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Inhalation: POISON material. If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Exposure should be treated as a cyanide poisoning.

Antidote: Always have a cyanide antidote kit on hand when working with cyanide compounds. Get medical advice to use.

Section 5 - Fire Fighting Measures

General Information: Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and/or toxic fumes. Runoff from fire control or dilution water may cause pollution. Combustion by-products include oxides of nitrogen and hydrogen cyanide.

Extinguishing Media: Do NOT use carbon dioxide. Use dry sand, dry chemical, soda ash or lime.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Do not flush into a sewer. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Evacuate unnecessary personnel.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Wash thoroughly after handling. Minimize dust generation and accumulation. Do not breathe dust, mist, or vapor. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Wash clothing before reuse. Discard contaminated shoes. Acids should not be used around sodium cyanide or potassium cyanide unless absolutely necessary and then only after careful planning. Hydrogen cyanide (HCN) formation is the greatest potential hazard in using sodium cyanide or potassium cyanide solutions because some HCN gas will be released. Use only with adequate ventilation or respiratory protection. Change contaminated clothing promptly.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong acids. Poison room locked. Keep containers tightly closed. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Limits

CAS# 143-33-9:

United States OSHA: 5 mg/m³ TWA (Cyanide anion).
Belgium - STEL: 5 mg/m³ VLE
Japan: 5 mg/m³ Ceiling (as CN)
Malaysia: 5 mg/m³ Ceiling (as CN)
Netherlands: 18 mg/m³ STEL Netherlands: 1.8 mg/m³ MAC
Spain: 5 mg/m³ VLA-EC

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Color: white

Odor: faint odor of bitter almond

pH: Strongly alkaline in soln

Vapor Pressure: Not available

Viscosity: Not available

Boiling Point: 1496 deg C (2,724.80°F)

Freezing/Melting Point: 563.7 deg C (1,046.66°F)

Autoignition Temperature: Not applicable

Flash Point: Not applicable.

Explosion Limits: Lower: Not available

Explosion Limits: Upper: Not available

Decomposition Temperature: Not available

Solubility in water: Soluble

Specific Gravity/Density: 1.6000g/cm³

Molecular Formula: NaCN

Molecular Weight: 49.01

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Readily absorbs carbon dioxide and moisture from the air and deliquesces (to absorb atmospheric water vapor and become liquid). May react with carbon dioxide in the air to form toxic hydrogen cyanide.

Conditions to Avoid: High temperatures, dust generation, exposure to moist air or water.

Incompatibilities with Other Materials Strong oxidizing agents, acids.

Hazardous Decomposition Hydrogen cyanide, oxides of nitrogen, sodium hydroxide.

Products

Hazardous Polymerization

Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 143-33-9: VZ7525000

LD50/LC50: RTECS:
CAS# 143-33-9: Oral, rat: LD50 = 6440 ug/kg;
Oral, rat: LD50 = 4.7 mg/kg;
Skin, rabbit: LD50 = 10400 ug/kg;
Skin, rabbit: LD50 = 300 mg/kg;

Carcinogenicity: Sodium cyanide - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: The hazards associated with cyanide may be seen in this product.

Section 12 - Ecological Information

Other: No information available.

Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	SODIUM CYANIDE	SODIUM CYANIDE, SOLID	SODIUM CYANIDE
Hazard Class:	6.1	6.1	6.1
UN Number:	1689	1689	1689
Packing Group:	I	I	I

USA RQ: CAS# 143-33-9: 10 lb final RQ; 4.54 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T+ N

Risk Phrases:

R 26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.

R 32 Contact with acids liberates very toxic gas.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 7 Keep container tightly closed.

S 28A After contact with skin, wash immediately with plenty of water.

S 29 Do not empty into drains.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 60 This material and its container must be disposed of as hazardous waste.

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

WGK (Water Danger/Protection)

CAS# 143-33-9: 3

Canada

CAS# 143-33-9 is listed on Canada's DSL List

US Federal

TSCA

CAS# 143-33-9 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 1/14/1998

Revision #10 Date 9/19/2006

Revisions were made in Sections: 5

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