

Material Safety Data Sheet

Version 3.3
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Sodium cyanide

Product Number : 71431

Brand : Sigma-Aldrich

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

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Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Target Organ Effect, Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption

Target Organs

Central nervous system, Blood, Lungs, Cardiovascular system., Thyroid.

Other hazards which do not result in classification

Rapidly absorbed through skin.

GHS Classification

Acute toxicity, Oral (Category 1)
Acute toxicity, Inhalation (Category 2)
Acute toxicity, Dermal (Category 1)
Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H300 + H310

Fatal if swallowed or in contact with skin

H330

Fatal if inhaled.

H400

Very toxic to aquatic life.

Precautionary statement(s)

P260

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

P264

Wash hands thoroughly after handling.

P273

Avoid release to the environment.

P280

Wear protective gloves/ protective clothing.

P284

Wear respiratory protection.

P302 + P350

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

P310

Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard: 4
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

NFPA Rating

Health hazard: 4
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be fatal if inhaled. May cause respiratory tract irritation.
Skin May be fatal if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.
Ingestion May be fatal if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : CNNa
Molecular Weight : 49.01 g/mol

Component		Concentration
Sodium cyanide		
CAS-No.	143-33-9	-
EC-No.	205-599-4	
Index-No.	006-007-00-5	

4. FIRST AID MEASURES**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES**Conditions of flammability**

Not flammable or combustible.

Suitable extinguishing media

Dry powder

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sodium oxides

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Never allow product to get in contact with water during storage. Do not store near acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Basis
Sodium cyanide	143-33-9	TWA	5 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
Remarks	Skin designation			
		C	5 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
	Upper Respiratory Tract irritation Headache Nausea Thyroid effects Danger of cutaneous absorption varies			
		TWA	5 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		C	4.7 ppm 5 mg/m ³	USA. NIOSH Recommended Exposure Limits
	10 minute ceiling value			

Personal protective equipment**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	crystalline
Colour	white

Safety data

pH	11.0 - 12.0 at 49.0 g/l at 25 °C (77 °F)
Melting point/freezing point	Melting point/range: 563.7 °C (1,046.7 °F) - lit.
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	1 hPa (1 mmHg) at 817 °C (1,503 °F)
Density	no data available
Water solubility	ca.49 g/l at 20 °C (68 °F)
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available

Materials to avoid

Do not store near acids., Strong oxidizing agents, Carbon dioxide (CO₂)

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sodium oxides
Reacts with water to form: - Hydrogen cyanide (hydrocyanic acid)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD₅₀

LD₅₀ Oral - rat - 4.8 mg/kg

Remarks: Behavioral:Tetany. Behavioral:Ataxia. Lungs, Thorax, or Respiration:Respiratory obstruction.

Inhalation LC₅₀

no data available

Dermal LD50

LD50 Dermal - rabbit - 10.4 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Tremor. Lungs, Thorax, or Respiration:Dyspnea.

Other information on acute toxicity

LD50 Intramuscular - rabbit - 1.666 mg/kg

LD50 Intraperitoneal - rat - 4.3 mg/kg

LD50 Intraperitoneal - mouse - 4.9 mg/kg

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Reproductive toxicity - rat - Oral

Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct.

Reproductive toxicity - Hamster - Implant

Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Specific Developmental Abnormalities: Central nervous system.

no data available

Teratogenicity

Developmental Toxicity - Hamster - Implant

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects**Inhalation**

May be fatal if inhaled. May cause respiratory tract irritation.

Ingestion	May be fatal if swallowed.
Skin	May be fatal if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

Synergistic effects

no data available

Additional Information

RTECS: VZ7525000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.05 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	LC50 - Daphnia magna (Water flea) - 0.09 mg/l - 96 h
Toxicity to algae	EC50 - Nitzschia closterium - 0.051 mg/l - 72 h

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1689	Class: 6.1	Packing group: I
Proper shipping name: Sodium cyanide, solid		
Reportable Quantity (RQ): 10 lbs		
Marine pollutant: No		
Poison Inhalation Hazard: No		

IMDG

UN number: 1689	Class: 6.1	Packing group: I	EMS-No: F-A, S-A
Proper shipping name: SODIUM CYANIDE, SOLID			
Marine pollutant: Marine pollutant			

IATA

UN number: 1689 Class: 6.1 Packing group: I
Proper shipping name: Sodium cyanide, solid

15. REGULATORY INFORMATION

OSHA Hazards

Target Organ Effect, Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption

SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Sodium cyanide	143-33-9	1993-04-24

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Sodium cyanide	143-33-9	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Sodium cyanide	143-33-9	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Sodium cyanide	143-33-9	1993-04-24

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information

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