

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Sodium cyanide

Product Number : 380970  
Brand : Sigma-Aldrich

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

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

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.

**Other hazards**

Contact with acids liberates very toxic gas.

**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.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : CNNa  
Molecular Weight : 49.01 g/mol

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

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**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.

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**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**

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**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.

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## 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.

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## 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 <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
Remarks	Skin designation			
		C	5 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
	Upper Respiratory Tract irritation Headache Nausea Thyroid effects Danger of cutaneous absorption varies			
		TWA	5 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		C	4.7 ppm 5 mg/m <sup>3</sup>	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.

#### Immersion protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 480 min

Material tested: Dermatril® (Aldrich Z677272, Size M)

#### Splash protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm  
Break through time: > 30 min  
Material tested: Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### **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.

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## **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

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## **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**

Other decomposition products - no data available

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**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

<b>Inhalation</b>	May be fatal if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	May be fatal if swallowed.
<b>Skin</b>	May be fatal if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	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

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## 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.

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## 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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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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