

## SAFETY DATA SHEET

Version 4.14  
Revision Date 09/22/2017  
Print Date 11/10/2018

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 1.1 Product identifiers

Product name : Sodium cyanide

Product Number : 380970

Brand : Sigma-Aldrich

Index-No. : 006-007-00-5

CAS-No. : 143-33-9

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

#### 1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832

Fax : +1 800-325-5052

#### 1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

##### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Corrosive to metals (Category 1), H290

Acute toxicity, Oral (Category 1), H300

Acute toxicity, Inhalation (Category 1), H330

Acute toxicity, Dermal (Category 1), H310

Specific target organ toxicity - repeated exposure (Category 1), H372

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H290 May be corrosive to metals.

H300 + H310 + H330 Fatal if swallowed, in contact with skin or if inhaled

H372 Causes damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P234 Keep only in original container.

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

|                    |                                                                                                                     |
|--------------------|---------------------------------------------------------------------------------------------------------------------|
| P262               | Do not get in eyes, on skin, or on clothing.                                                                        |
| P264               | Wash skin 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.                                                                        |
| P284               | Wear respiratory protection.                                                                                        |
| P301 + P310 + P330 | IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.                                                 |
| P302 + P350 + P310 | IF ON SKIN: Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/ physician.       |
| P304 + P340 + P310 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. |
| P314               | Get medical advice/ attention if you feel unwell.                                                                   |
| P362               | Take off contaminated clothing and wash before reuse.                                                               |
| P390               | Absorb spillage to prevent material damage.                                                                         |
| P391               | Collect spillage.                                                                                                   |
| P403 + P233        | Store in a well-ventilated place. Keep container tightly closed.                                                    |
| P405               | Store locked up.                                                                                                    |
| P406               | Store in corrosive resistant stainless steel container with a resistant inner liner.                                |
| P501               | Dispose of contents/ container to an approved waste disposal plant.                                                 |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Contact with acids liberates very toxic gas.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

|                  |                |
|------------------|----------------|
| Formula          | : CNNa         |
| Molecular weight | : 49.01 g/mol  |
| CAS-No.          | : 143-33-9     |
| EC-No.           | : 205-599-4    |
| Index-No.        | : 006-007-00-5 |

#### Hazardous components

| Component             | Classification                                                                                                  | Concentration |
|-----------------------|-----------------------------------------------------------------------------------------------------------------|---------------|
| <b>Sodium cyanide</b> |                                                                                                                 |               |
|                       | Met. Corr. 1; Acute Tox. 1; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H290, H300 + H310 + H330, H372, H410 | 90 - 100 %    |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of 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.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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**5. FIREFIGHTING MEASURES****5.1 Extinguishing media****Suitable extinguishing media**

Dry powder

**5.2 Special hazards arising from the substance or mixture**

No data available

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

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**6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

**6.2 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.

**6.3 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.

**6.4 Reference to other sections**

For disposal see section 13.

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**7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

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.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters****Components with workplace control parameters**

| Component      | CAS-No.  | Value                                                                                                                | Control parameters             | Basis                                                                                   |
|----------------|----------|----------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------|
| Sodium cyanide | 143-33-9 | TWA                                                                                                                  | 5.000000 mg/m3                 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|                | Remarks  | CAS number varies with compound<br>Skin designation                                                                  |                                |                                                                                         |
|                |          | C                                                                                                                    | 5.000000 mg/m3                 | USA. ACGIH Threshold Limit Values (TLV)                                                 |
|                |          | Upper Respiratory Tract irritation<br>Headache<br>Nausea<br>Thyroid effects<br>Danger of cutaneous absorption varies |                                |                                                                                         |
|                |          | C                                                                                                                    | 4.700000 ppm<br>5.000000 mg/m3 | USA. NIOSH Recommended Exposure Limits                                                  |
|                |          | 10 minute ceiling value                                                                                              |                                |                                                                                         |
|                |          | C                                                                                                                    | 5.000000 mg/m3                 | USA. ACGIH Threshold Limit Values (TLV)                                                 |
|                |          | Upper Respiratory Tract irritation<br>Headache<br>Nausea<br>Thyroid effects<br>Danger of cutaneous absorption varies |                                |                                                                                         |
|                |          | C                                                                                                                    | 4.7 ppm<br>5 mg/m3             | USA. NIOSH Recommended Exposure Limits                                                  |
|                |          | 10 minute ceiling value                                                                                              |                                |                                                                                         |
|                |          | TWA                                                                                                                  | 5 mg/m3                        | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|                |          | CAS number varies with compound<br>Skin designation                                                                  |                                |                                                                                         |
|                |          | C                                                                                                                    | 5 mg/m3                        | USA. ACGIH Threshold Limit Values (TLV)                                                 |
|                |          | Upper Respiratory Tract irritation<br>Headache<br>Nausea<br>Thyroid effects<br>Danger of cutaneous absorption varies |                                |                                                                                         |
|                |          | PEL                                                                                                                  | 5 mg/m3                        | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
|                |          | Skin                                                                                                                 |                                |                                                                                         |

## 8.2 Exposure controls

### Appropriate engineering controls

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

### Personal protective equipment

#### Eye/face 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 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.

Full contact  
Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: 480 min  
Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact  
Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: 480 min  
Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, 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 and safety officer 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.

### 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.

### 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).

### Control of environmental exposure

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

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

|                                                 |                                                   |
|-------------------------------------------------|---------------------------------------------------|
| a) Appearance                                   | Form: crystalline<br>Colour: white                |
| b) Odour                                        | odourless                                         |
| c) Odour Threshold                              | No data available                                 |
| d) pH                                           | 11.0 - 12.0 at 49.0 g/l at 25 °C (77 °F)          |
| e) Melting point/freezing point                 | Melting point/range: 563.7 °C (1,046.7 °F) - lit. |
| f) Initial boiling point and boiling range      | 1,500 °C (2,732 °F) at 1.013 hPa (0.760 mmHg)     |
| g) Flash point                                  | No data available                                 |
| h) Evaporation rate                             | No data available                                 |
| i) Flammability (solid, gas)                    | No data available                                 |
| j) Upper/lower flammability or explosive limits | No data available                                 |
| k) Vapour pressure                              | 1 hPa (1 mmHg) at 817 °C (1,503 °F)               |
| l) Vapour density                               | No data available                                 |
| m) Relative density                             | 1.59 kg/m <sup>3</sup> at 20 °C (68 °F)           |
| n) Water solubility                             | ca.49 g/l at 20 °C (68 °F) - soluble              |
| o) Partition coefficient: n-octanol/water       | No data available                                 |

|                              |                   |
|------------------------------|-------------------|
| p) Auto-ignition temperature | No data available |
| q) Decomposition temperature | No data available |
| r) Viscosity                 | No data available |
| s) Explosive properties      | No data available |
| t) Oxidizing properties      | No data available |

## 9.2 Other safety information

No data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Do not store near acids., Strong oxidizing agents, Carbon dioxide (CO<sub>2</sub>)

### 10.6 Hazardous decomposition products

Other decomposition products - No data available

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

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 4.7 mg/kg

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

Inhalation: No data available

LD50 Dermal - Rabbit - 10.4 mg/kg

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

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 sensitisation

No data available

#### Germ cell mutagenicity

Ames test

Salmonella typhimurium

Result: negative

#### 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.
- 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.

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.

### **Specific target organ toxicity - single exposure**

No data available

### **Specific target organ toxicity - repeated exposure**

No data available

### **Aspiration hazard**

No data available

### **Additional Information**

RTECS: VZ7525000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

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## **12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

Toxicity to fish static test LC50 - Tilapia mossambica - 0.04 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

### **12.2 Persistence and degradability**

No data available

### **12.3 Bioaccumulative potential**

No data available

### **12.4 Mobility in soil**

No data available

### **12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### **12.6 Other adverse effects**

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

Very toxic to aquatic life with long lasting effects.

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### 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.

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## 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  
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: yes

### IATA

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

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## 15. REGULATORY INFORMATION

### 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

The following components are subject to reporting levels established by SARA Title III, Section 313:

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

### 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

|                                                                                                                               | CAS-No.  | Revision Date |
|-------------------------------------------------------------------------------------------------------------------------------|----------|---------------|
| WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. | 143-33-9 | 2013-08-15    |
| Sodium cyanide                                                                                                                |          |               |

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## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| Acute Tox.         | Acute toxicity                                                  |
| Aquatic Acute      | Acute aquatic toxicity                                          |
| Aquatic Chronic    | Chronic aquatic toxicity                                        |
| H290               | May be corrosive to metals.                                     |
| H300               | Fatal if swallowed.                                             |
| H300 + H310 + H330 | Fatal if swallowed, in contact with skin or if inhaled          |
| H310               | Fatal in contact with skin.                                     |
| H330               | Fatal if inhaled.                                               |
| H372               | Causes damage to organs through prolonged or repeated exposure. |
| H400               | Very toxic to aquatic life.                                     |

### HMIS Rating

|                        |   |
|------------------------|---|
| Health hazard:         | 4 |
| Chronic Health Hazard: | * |
| Flammability:          | 0 |
| Physical Hazard        | 0 |

### NFPA Rating

|                    |   |
|--------------------|---|
| Health hazard:     | 4 |
| Fire Hazard:       | 0 |
| Reactivity Hazard: | 0 |

### Further information

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### Preparation Information

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

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