

## Material Safety Data Sheet

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Version 1.3

According to 91/155/EEC

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1 - Product and Company Information

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Product Name SODIUM CYANIDE, REAGENTPLUS, 99.98%  
Product Number 431591

Company Sigma-Aldrich Pte Ltd  
#08-01 Citilink Warehouse  
Singapore 118529  
Singapore

Technical Phone # 65 271 1089  
Fax 65 271 1571

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2 - Composition/Information on Ingredients

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Product Name	CAS #	EC no	Annex I Index Number
SODIUM CYANIDE	143-33-9	205-599-4	006-007-00-5

Formula NaCN  
Molecular Weight 49.01 AMU  
Synonyms Cianuro di sodio (Italian) \* Cyanide of sodium \*  
Cyanobrik \* Cyanogran \* Cyanure de sodium  
(French) \* Cymag \* Hydrocyanic acid, sodium salt  
\* Kyanid sodny (Czech) \* Prussiate of soda \*  
RCRA waste number P106 \* Sodium cyanide (ACGIH)

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3 - Hazards Identification

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## SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

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.

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4 - First Aid Measures

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## AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give  
artificial respiration. If breathing is difficult, give oxygen.

## AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for  
at least 15 minutes. Remove contaminated clothing and shoes.  
Call a physician.

## AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of  
water for at least 15 minutes. Assure adequate flushing by  
separating the eyelids with fingers. Call a physician.

## AFTER INGESTION

If swallowed, wash out mouth with water provided person is

conscious. Call a physician immediately.

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## 5 - Fire Fighting Measures

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### EXTINGUISHING MEDIA

Suitable: Appropriate foam.

Unsuitable: Do not use carbon dioxide extinguisher on this material.

### SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

### SPECIFIC METHOD(S) OF FIRE FIGHTING

Use water spray to cool fire-exposed containers.

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## 6 - Accidental Release Measures

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### PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition.

### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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## 7 - Handling and Storage

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### HANDLING

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

### STORAGE

Conditions of Storage: Keep tightly closed.

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## 8 - Exposure Controls / Personal Protection

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### ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

### GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

### EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	-
Poland		NDSCh	-
Poland		NDSP	5 mg/m <sup>3</sup>
			-

Remarks: {BASED ON CN} W PRZELICZENIU NA CN

### EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	5 mg/m <sup>3</sup>



or water.

Materials to Avoid: Avoid contact with acid., Strong oxidizing agents Carbon dioxide.

#### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Hydrogen cyanide Carbon monoxide, Carbon dioxide, Nitrogen oxides.

Hazardous Decomposition Products Formed Upon Contact with Water: Hydrogen cyanide

#### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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### 11 - Toxicological Information

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RTECS NUMBER: VZ7525000

#### ACUTE TOXICITY

LDLO  
Oral  
Woman  
40 mg/kg  
Remarks: Gastrointestinal:Other changes.

LDLO  
Oral  
Child  
100 mg/kg  
Remarks: Gastrointestinal:Other changes.

LDLO  
Oral  
Human  
2.8 mg/kg

LDLO  
Oral  
Man  
6.557 mg/kg  
Remarks: Behavioral:Fluid intake. Gastrointestinal:Gastritis.

LDLO  
Oral  
Human  
2.857 mg/kg

LD50  
Oral  
Rat  
6.44 mg/kg

LD50  
Intraperitoneal  
Rat  
4300 UG/KG

LD50  
Intraperitoneal  
Mouse  
4900 UG/KG

LD50  
Subcutaneous  
Mouse  
3600 UG/KG

LD50  
Subcutaneous  
Dog  
5360 UG/KG

LD50  
Skin  
Rabbit  
10.4 mg/kg  
Remarks: Behavioral:Somnolence (general depressed activity).  
Behavioral:Tremor. Lungs, Thorax, or Respiration:Dyspnea.

LD50  
Intramuscular  
Rabbit  
1666 UG/KG

LD50  
Ocular  
Rabbit  
5048 UG/KG

LD50  
Subcutaneous  
Guinea pig  
5800 UG/KG

LD50  
Oral  
Chicken  
21 mg/kg  
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and  
Taste):Eye:Other. Lungs, Thorax, or Respiration:Other changes.  
Gastrointestinal:Changes in structure or function of salivary  
glands.

LD50  
Oral  
Quail  
8.5 mg/kg  
Remarks: Behavioral:Tremor. Behavioral:Ataxia. Lungs, Thorax, or  
Respiration:Dyspnea.

LD50  
Oral  
Duck  
2.5 mg/kg

LD50  
Oral  
Domestic Animals  
4 mg/kg

LD50  
Oral  
Mammal  
8 mg/kg

LD50

Oral

Bird (wild)

4 mg/kg

Remarks: Behavioral:Tremor. Behavioral:Ataxia. Lungs, Thorax, or Respiration:Dyspnea.

#### SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Lung irritation. Cyanosis. CNS depression.

#### ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: May be fatal if absorbed through skin.

Eye Contact: Causes burns.

Inhalation: May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: May be fatal if swallowed.

#### TARGET ORGAN INFORMATION

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

#### CHRONIC EXPOSURE - TERATOGEN

Species: Hamster

Dose: 5999 MG/KG

Route of Application: Implant

Exposure Time: (6-9D PREG)

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

#### CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat

Dose: 2148 MG/KG

Route of Application: Oral

Exposure Time: (13W MALE)

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

Species: Mouse

Dose: 4177 MG/KG

Route of Application: Oral

Exposure Time: (13W MALE)

Result: Paternal Effects: Testes, epididymis, sperm duct.

Species: Hamster

Dose: 5928 MG/KG

Route of Application: Implant

Exposure Time: (6-9D PREG)

Result: Effects on Fertility: Post-implantation mortality (e.g.,

dead and/or resorbed implants per total number of implants).  
Specific Developmental Abnormalities: Central nervous system.

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## 12 - Ecological Information

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No data available.

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## 13 - Disposal Considerations

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### SUBSTANCE DISPOSAL

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. Observe all federal, state, and local environmental regulations.

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## 14 - Transport Information

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### RID/ADR

UN#: 1689  
Class: 6.1  
PG: I  
Proper Shipping Name: Sodium cyanide

### IMDG

UN#: 1689  
Class: 6.1  
PG: I  
Proper Shipping Name: SODIUM CYANIDE, SOLID  
Marine Pollutant: Yes  
Severe Marine Pollutant: No

### IATA

UN#: 1689  
Class: 6.1  
PG: I  
Proper Shipping Name: Sodium cyanide  
Inhalation Packing Group I: No

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## 15 - Regulatory Information

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### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 006-007-00-5

NOTA: A

INDICATION OF DANGER: T+ N

Very toxic. Dangerous for the environment.

R-PHRASES: 26/27/28 32 50/53

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.

S-PHRASES: 7 28 29 45 60 61

Keep container tightly closed. After contact with skin, wash immediately with plenty of soap-suds. Do not empty into drains. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

### COUNTRY SPECIFIC INFORMATION

Germany  
WGK: 3

SWITZERLAND  
SWISS POISON CLASS: 1

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16 - Other Information

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WARRANTY

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 Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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