

## Material Safety Data Sheet

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Version 1.4  
Regulation (EC) No 1907/2006

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1 - Product and Company Information

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Product Name SODIUM CYANIDE 98 % NACN, LUMPS  
Product Number 11835  
  
Company Sigma-Aldrich Company Ltd.  
The Old Brickyard  
New Road, Gillingham SP8 4XT  
United Kingdom  
  
Technical Phone # 44-(0)-1747-833000  
Fax 44-(0)-1747-833313  
E-mail Address eurtechserv@sial.com  
Emergency Phone # 44-(0)-1747-833100

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2 - 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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3 - 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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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/m3
			-

Remarks: {BASED ON CN} W PRZELICZENIU NA CN

EXPOSURE LIMITS - DENMARK

	Source	Type	Value
Remarks: LH	OEL	TWA	5 mg/m3
EXPOSURE LIMITS - GERMANY			
	Source	Type	Value
Remarks: 4	OEL TRGS 900	OEL	3.8 mg/m3, E
Remarks: H			
EXPOSURE LIMITS - SWITZERLAND			
	Source	Type	Value
Remarks: E H	OEL	OEL	5 mg/m3
EXPOSURE LIMITS - UNITED KINGDOM			
	Source	Type	Value
Remarks: Skin	OEL	TWA	5MG (CN) /M3

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). 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.  
 Hand Protection: Compatible chemical-resistant gloves.  
 Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance	Physical State: Solid	
	Color: White	
	Form: Fine crystals	
Property	Value	At Temperature or Pressure
pH	11.0 - 12.0	
BP/BP Range	N/A	
MP/MP Range	563.7 °C	
Flash Point	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	1 mmHg	817 °C
SG/Density	N/A	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	1.7 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	

Solubility

Solubility in Water:complete, colorless 1 M  
in H2O, 20°C

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## 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions of Instability: May decompose on exposure to moist air or water.

Materials to Avoid: Strong oxidizing agents Avoid contact with acid. 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:Tremor. Lungs, Thorax, or  
Respiration:Dyspnea. Behavioral:Somnolence (general depressed  
activity).

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: Lungs, Thorax, or Respiration:Other changes.  
Gastrointestinal:Changes in structure or function of salivary  
glands. Sense Organs and Special Senses (Nose, Eye, Ear, and  
Taste):Eye:Other.

LD50  
Oral  
Quail  
8.5 mg/kg  
Remarks: Behavioral:Ataxia. Behavioral:Tremor. 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:Ataxia. Behavioral:Tremor. 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

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

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

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

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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  
ID-Number: 60  
KBwS-Decision

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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 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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