



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 21.11.2010

Version 9.7

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Catalogue No.	106437
Product name	Sodium cyanide pure
REACH Registration Number	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses	Materials for use in technical applications For additional information on uses please refer to the Merck Chemicals portal ( <a href="http://www.merck-chemicals.com">www.merck-chemicals.com</a> ).
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### 1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	EQ-RS * e-mail: <a href="mailto:prodsafe@merckgroup.com">prodsafe@merckgroup.com</a>

1.4 Emergency telephone number	Please contact the regional company representation in your country.
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## 2. Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 2, Inhalation, H330  
Acute toxicity, Category 1, Dermal, H310  
Acute toxicity, Category 2, Oral, H300  
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.

#### Classification (67/548/EEC or 1999/45/EC)

T+; R26/27/28  
R32  
N; R50/53

For the full text of the R-phrases mentioned in this Section, see Section 16.

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## 2.2 Label elements

### Labelling (REGULATION (EC) No 1272/2008)

#### Hazard pictograms



#### Signal word

Danger

#### Hazard statements

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

H410 Very toxic to aquatic life with long lasting effects.

EUH032 Contact with acids liberates very toxic gas.

#### Precautionary statements

P273 Avoid release to the environment.

P280 Wear protective gloves.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

#### Reduced labelling (≤125 ml)

##### Hazard pictograms



##### Signal word

Danger

##### Hazard statements

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

EUH032 Contact with acids liberates very toxic gas.

##### Precautionary statements

P280 Wear protective gloves.

Index-No. 006-007-00-5

### Labelling (67/548/EEC or 1999/45/EC)

Symbol(s)	T+	Very toxic
	N	Dangerous for the environment
R-phrases(s)	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(s)	7-28-29-45-60-61	Keep container tightly closed. After contact with skin, wash immediately with plenty of soap and water. 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

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waste. Avoid release to the environment. Refer to special instructions/ Safety data sheets.

EC-No. 205-599-4

EC Label

**Reduced labelling (≤125 ml)**

Symbol(s) T+  
N

R-phrases 26/27/28-32

S-phrases 28-45-28

Very toxic  
Dangerous for the environment  
Very toxic by inhalation, in contact with skin and if swallowed. Contact with acids liberates very toxic gas.  
After contact with skin, wash immediately with plenty of water. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). After contact with skin, wash immediately with plenty of soap and water.

## 2.3 Other hazards

None known.

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## 3. Composition/information on ingredients

Formula	NaCN	CNNa (Hill)
CAS-No.	143-33-9	
Index-No.	006-007-00-5	
EC-No.	205-599-4	
Molar mass	49,01 g/mol	

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## 4. First aid measures

### 4.1 Description of first aid measures

#### *General advice*

Rapid action is called for. First aider needs to protect himself. Immediately call in physician (mentioning hydrocyanic acid poisoning).

After inhalation: fresh air. Immediately apply artificial respiration. If necessary oxygen. Immediately call in physician.

After skin contact: wash off with plenty of water. Remove contaminated clothing. Call a physician immediately.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

General information: If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

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

irritant effects, Cough, respiratory paralysis, Shortness of breath, Unconsciousness, agitation, spasms, Nausea, Vomiting, cardiovascular disorders, Headache, cardiac arrest, death  
The following applies to cyanogen compounds/ nitriles in general: utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration. Cardiovascular disorders, dyspnoea, unconsciousness.

### 4.3 Indication of immediate medical attention and special treatment needed

Keep antidotes ready  
dimethylaminophenol  
Cobalt-EDTA

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sodium thiosulfate

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## 5. Fire-fighting measures

### 5.1 Extinguishing media

*Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

*Unsuitable extinguishing media*

Carbon dioxide (CO<sub>2</sub>), Water, Foam

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

Not combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

Hydrogen cyanide (hydrocyanic acid)

### 5.3 Advice for firefighters

*Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Avoid generation and inhalation of dusts in all circumstances. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### 6.2 Environmental precautions

Do not empty into drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7.2 and 10.5).

Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### 6.4 Reference to other sections

Indications about waste treatment see section 13.

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## 7. Handling and storage

### 7.1 Precautions for safe handling

Observe label precautions.

Work under hood. Do not inhale substance.

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

Dry. Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

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Storage temperature: no restrictions.

### 7.3 Specific end uses

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

### 8.2 Exposure controls

#### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

#### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

#### *Hygiene measures*

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. Work under hood. Do not inhale substance.

#### *Eye/face protection*

Safety glasses

#### *Hand protection*

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

#### *Other protective equipment:*

protective clothing

#### *Respiratory protection*

required when dusts are generated.

Recommended Filter type: Filter B-(P3)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

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*Environmental exposure controls*  
Do not empty into drains.

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## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Form	solid
Colour	white
Odour	bitter almond-like
Odour Threshold	No information available.
pH	ca. 11,7 at 100 g/l 20 °C
Melting point	563 °C
Boiling point/boiling range	1.496 °C at 1.013 hPa
Flash point	not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapour pressure	at 20 °C not applicable
Relative vapour density	No information available.
Relative density	1,6 g/cm <sup>3</sup> at 20 °C
Water solubility	370 g/l at 20 °C
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	> 1.500 °C
Viscosity, dynamic	No information available.
Explosive properties	No information available.

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Oxidizing properties	No information available.
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## 9.2 Other data

Ignition temperature	not applicable
Bulk density	ca.750 - 900 kg/m <sup>3</sup>

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## 10. Stability and reactivity

### 10.1 Reactivity

See section 10.3.

### 10.2 Chemical stability

sensitive to moisture

### 10.3 Possibility of hazardous reactions

A risk of explosion and/or of toxic gas formation exists with the following substances:

Water, carbon dioxide, acids

Violent reactions possible with:

Oxidizing agents, alkali salts

Risk of explosion with:

chlorates, nitrites, nitrates

### 10.4 Conditions to avoid

Exposure to moisture.

### 10.5 Incompatible materials

Aluminium, Metals, Zinc

### 10.6 Hazardous decomposition products

in the event of fire: See chapter 5.

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## 11. Toxicological information

### 11.1 Information on toxicological effects

*Acute oral toxicity*

LD50 rat

Dose: 4,7 mg/kg

(RTECS)

LDLO human

Dose: 2,8 mg/kg

(RTECS)

Symptoms: Nausea, Vomiting

absorption

*Acute inhalation toxicity*

Symptoms: Possible damages:, mucosal irritations

absorption

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*Acute dermal toxicity*

LD50 rabbit  
Dose: 7,7 mg/kg  
(IUCLID)

absorption

*Eye irritation*

rabbit  
Result: Eye irritation  
(Regulation (EC) No 1272/2008, Annex VI) (IUCLID)

*Sensitisation*

Sensitization possible in predisposed persons.

*Genotoxicity in vitro*

Ames test  
Result: negative  
(IUCLID)

*Specific target organ toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

*Specific target organ toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*

No aspiration toxicity classification

## 11.2 Further information

*Further information*

Lethal effect after absorption.

Systemic effects:

agitation, spasms, Shortness of breath, respiratory paralysis, Unconsciousness, cardiovascular disorders, cardiac arrest, death

If swallowed

Headache

Other information

The following applies to cyanogen compounds/ nitriles in general: utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration. Cardiovascular disorders, dyspnoea, unconsciousness.

Further data:

This substance should be handled with particular care.

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## 12. Ecological information

### 12.1 Toxicity

*Toxicity to fish*

LC50  
Species: *Oncorhynchus mykiss* (rainbow trout)  
Dose: 0,057 mg/l  
Exposure time: 96 h  
(IUCLID)

### 12.2 Persistence and degradability



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*Biodegradability*

Result: Readily biodegradable.

> 99 %

Exposure time: 7 d

(IUCLID)

*Chemical Oxygen Demand (COD)*

816 mg/g

(IUCLID)

*Ratio BOD/ThBOD*

BOD7 6 %

**12.3 Bioaccumulative potential**

No information available.

**12.4 Mobility in soil**

No information 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**

*Additional ecological information*

Biological effects:

Hazard for drinking water supplies.

Forms toxic and corrosive mixtures with water even if diluted.

Further information on ecology

Do not allow to run into surface waters, wastewater, or soil.

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**13. Disposal considerations**

*Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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**14. Transport information**

**ADR/RID**

UN 1689 SODIUM CYANIDE, SOLID, 6.1, I

**IATA**

UN 1689 SODIUM CYANIDE, SOLID, 6.1, I

**IMDG**

UN 1689 SODIUM CYANIDE, SOLID, 6.1, I

EmS F-A S-A

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

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**15. Regulatory information**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

*EU regulations*

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Major Accident Hazard Legislation	96/82/EC Very toxic 1 Quantity 1: 5 t Quantity 2: 20 t
	96/82/EC Dangerous for the environment 9a Quantity 1: 100 t Quantity 2: 200 t
Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Take note of Dir 92/85/EEC on the safety and health at work of pregnant workers.
<i>National legislation</i>	
Storage class VCI	6.1B Non combustible substances, toxic

## 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

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## 16. Other information

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

H300	Fatal if swallowed.
H310	Fatal in contact with skin.
H330	Fatal if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

### Full text of R-phrases referred to under sections 2 and 3

R26/27/28	Very toxic by inhalation, in contact with skin and if swallowed.
R32	Contact with acids liberates very toxic gas.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### Training advice

Provide adequate information, instruction and training for operators.

Regional representation: This information is given on the authorised Safety Data Sheet for your country.

### Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*