



# Safety Data Sheet

## Sodium Cyanide Solution

Version 1.02

Revision Date 14.05.2019

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

**Product identifier**

**Trade name** Sodium Cyanide Solution

**Relevant identified uses of the substance or mixture and uses advised against**

**Use** Industrial use.

**Manufacturer or supplier's details**

**Company** Sasol Chemicals, a division of Sasol South Africa Ltd

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South Africa

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+27 (0)17 610 4444 (South Africa)  
0800 112 890 RSA-Local only  
+61 (2) 8014 4558 (Australia)

### SECTION 2. Hazards identification

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### Classification of the substance or mixture

#### South Africa. GHS Classification and Labelling of Chemicals - SANS 10234

##### Classification

Acute oral toxicity	Category 1
Acute inhalation toxicity	Category 1
Acute dermal toxicity	Category 1
Specific target organ toxicity - repeated exposure	Category 1
Skin corrosion/irritation	Category 2
Eye damage/irritation	Category 2
Hazardous to the aquatic environment - acute hazard	Category 1
Hazardous to the aquatic environment - chronic hazard	Category 1

### Label elements

#### South Africa. GHS Classification and Labelling of Chemicals - SANS 10234

##### Pictogram



##### Signal word

Danger

##### Hazard statements

H300: Fatal if swallowed.  
 H310: Fatal in contact with skin.  
 H330: Fatal if inhaled.  
 H372: Causes damage to organs through prolonged or repeated exposure.



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H315: Causes skin irritation.

H319: Causes serious eye irritation.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

### Precautionary statements

#### Prevention

P264: Wash skin thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P262: Do not get in eyes, on skin, or on clothing.

P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

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

P271: Use only outdoors or in a well-ventilated area.

#### Response

P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P302 + P350: IF ON SKIN: Gently wash with plenty of soap and water.

P310: Immediately call a POISON CENTER or doctor/ physician.

P361: Remove/Take off immediately all contaminated clothing.

P363: Wash contaminated clothing before reuse.

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

P320: Specific treatment is urgent (see supplemental first aid instructions on this label).

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313: If eye irritation persists: Get medical advice/ attention.



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<b>Storage</b>	P405: Store locked up. P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
<b>Disposal</b>	P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.
<b>Other hazards</b>	No data available

## SECTION 3. Composition/information on ingredients

### Mixture

#### Sodium cyanide

Contents:  $\geq 28.00$  -  $< 34.00$  %W/W

CAS-No. 143-33-9

Index-No. 006-007-00-5

EC-No. 205-599-4

**Hazard statements** *H330 H300 H310 H410 H400 H315  
H319 H372*

#### Sodium Hydroxide; Caustic Soda

Contents: 1.50 %W/W

CAS-No. 1310-73-2

Index-No. 011-002-00-6

EC-No. 215-185-5

**Hazard statements** *H314 H290*

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

## SECTION 4. First aid measures



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### Description of necessary first-aid measures

**Inhalation** Ensure Important Considerations are also applied: See general information above. Do not use direct mouth to mouth resuscitation to prevent also being contaminated. Make use of mouthpiece, positive pressure face mask and bag resuscitator. Administer 100% medical Oxygen by facial mask at a feed rate of 12L/min to 15L/min. Get medical attention immediately

**Skin contact** Ensure Important Considerations are also applied: See general information above. Immediately remove all contaminated clothing and contain in plastic dust bags. Flush the affected skin with large amounts of water for 5-15 minutes and observe/treat as for inhalation.

**Eye contact** Ensure above Important Considerations are also applied. See general information: Immediately wash the eye(s) with clean water including under the eyelids, for at least 5 to 15 minutes. Take care not to contaminate unaffected eye with contaminated water and constantly observe/treat as for inhalation.

**Ingestion** Ensure Important Considerations are also applied: See general information above. Never give anything by mouth to an unconscious person. Maintain airway and respiration and observe/treat as for inhalation. If vomiting occurs, keep head lower than the hips to help prevent aspiration. Get medical attention immediately

### Most important symptoms/effects, acute and delayed

Refer to SECTION 11



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#### Treatment

The product user must agree to the principle treatment protocol to be used with medical doctor in charge. The recommended Cyanide anti-dote kit to be kept by user for use: Tripac-Cyano Cyanide Anti-dote Kit.

## SECTION 5. Firefighting measures

#### Suitable extinguishing media

Dry sodium carbonate BC powder Large fire: Water spray, fog or fire-fighting foam

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

Although non-combustible, flammable and toxic hydrogen cyanide gas and ammonia are produced when heated to decomposition.

#### Special protective equipment for firefighters

An approved positive pressure self-contained breathing apparatus must be worn. Although it will provide little or no thermal protection, chemical protective clothing must be worn when handling this substance.

## SECTION 6. Accidental release measures

#### Personal precautions

Ensure fully encapsulating, vapour-protective clothing during removal of spillage. Cordon off the area and deny entry to non-protected persons and the public. Evacuate to an area away from and upwind of the incident, if possible, to higher ground. Always work upwind of any spill. Do not touch or walk through spilled material. Stop leaks if you can do so without risk. Avoid



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the use of Ferrous Sulphate on any spilled product. Ferrous Sulphate does not neutralize cyanide and is acidic when dissolved and results in poisonous hydrogen cyanide fumes being emitted. Do not try to neutralise the spilled product by means of chemical treatment.

**Environmental precautions** Do not allow product/runoff from fire or spillage control to enter sewers, drains or watercourses. Do not spread this substance to other areas - keep contained and isolated. Any product spillages or contaminated runoff into sewers, water courses or storm water drains must be reported -Product supplier, Local Authority, Department of Water Affairs and other appropriate regulatory bodies.

**Methods for cleaning up** Absorb spilled product with sand or other non-combustible absorbent material. Sweep up and shovel into suitable containers for disposal. Use only non-sparking tools. Disposal may only be done by trained personnel. Contact the supplier for information and assistance before clean up and disposal is attempted.

**Reference to other sections** Refer to section 8 and 13

## SECTION 7. Handling and storage

**Safe handling advice** Avoid contact with skin and eyes. Keep away from fire, sparks and heated surfaces. Always pre-assess the risk and wear the Personal Protective Equipment appropriate to the task/situation. Never work alone and do not breathe any product related mist/fumes. Use only in well ventilated areas



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and never enter vessels, which contain sodium cyanide. Use in well-ventilated areas and keep container closed. Do not eat, drink or smoke when using this product. Always wash hands before after use, before eating, drinking and or smoking. During maintenance atmospheric levels should be monitored and controlled in compliance to occupational exposure limits. Eye wash fountains and quick drench showers must be provided within the immediate work area for emergency site. Keep away from acids, oxidizing agents and flammable substances

**Advice on protection against fire and explosion** No data available

**Requirements for storage areas and containers** Sodium Cyanide should be stored under strictly controlled conditions in designated areas and in accordance to legal requirements.SA Chamber of mines Guidelines on Cyanide Management, and the standard practice SANS 310-1.

**Advice on common storage** No data available

**container material** Unsuitable materials: Zinc Aluminium

### SECTION 8. Exposure controls/personal protection

#### Components with workplace control parameters

#### NATIONAL OCCUPATIONAL EXPOSURE LIMITS

Components	Type	Control parameters	Update	Basis
	TWA	5 mg/m3	1995	South Africa RELs





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SODIUM HYDROXIDE	STEL	2 mg/m <sup>3</sup>	1995	South Africa RELs
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### Exposure controls

#### Engineering measures

Provide sufficient air exchange and/or exhaust in work rooms.

Eye wash fountains and quick drench showers must be provided within the immediate work area for emergency use.

#### Personal protective equipment

##### Respiratory protection

Self-contained breathing apparatus (EN 133) is likely to occur or in the event of hydrogen cyanide gas being evolved. Negative pressure canister type respirator masks should be used for escape or short term rescue purposes. Cannisters should be compatible to cyanide fumes.

##### Hand protection

Impervious gloves

##### Eye protection

Safety goggles and a full-face shield to be worn.

##### Skin and body protection

It is recommended that a hooded chemical resistant(plastic) body suit be worn during operations where there is high risk of exposure.SABS approved acid repellent type overall is recommended.Overalls must be buttoned to the neck and sleeves worn over the gloves.Wear acid resistant impervious gloves when handling the product.-they must be of long type which reach to the elbow and are worn underneath the sleeve.Full length chemically resistant boots must be worn when handling this substance.STANSA(Standards SA, previously SABS) approved hard hats should be used to

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protect against falling objects and possible product spray

### Hygiene measures

Wash hands before breaks and immediately after handling the product. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Keep away from food, drink and animal feedingstuffs.

## SECTION 9. Physical and chemical properties

### Information on basic physical and chemical properties

<b>Form</b>	Liquid
<b>State of matter</b>	Liquid; at 20 ° C; 1,013 hPa
<b>Colour</b>	Light to dark red
<b>Odour</b>	bitter almond ammoniacal
<b>Odour Threshold</b>	No data available
<b>pH</b>	> 11
<b>Melting point/range</b>	-2 - 12 ° C; 1,013 hPa
<b>Boiling point/boiling range</b>	112 ° C; 1,013 hPa
<b>Flash point</b>	Flammable hydrogen cyanide gas is released in the presence of acids, acid salts and carbon dioxide.
<b>Evaporation rate</b>	No data available
<b>Flammability (solid, gas)</b>	No data available
<b>Vapour pressure</b>	17.33 hPa; 20 ° C



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<b>Relative vapour density</b>	No data available
<b>Density</b>	1.15 g/cm <sup>3</sup> ; 25 ° C
<b>Water solubility</b>	Completely soluble

#### SECTION 10. Stability and reactivity

<b>Reactivity</b>	Stable under normal conditions. It can absorb CO <sub>2</sub> from air to liberate highly toxic and flammable hydrocyanic gas. May react violently with strong oxidizing and acidic agents. Ammonia gas may be liberated at high temperatures.
<b>Chemical stability</b>	No data available
<b>Possibility of hazardous reactions</b>	Sodium Cyanide solutions are incompatible with acids. In the presence of acid, acid salts and carbon dioxide, hydrocyanic gas is released which is toxic and highly flammable. Concentrated sodium cyanide solutions react violently with flourine, magnesium, nitrates, nitric acid, and nitrites.
<b>Conditions to avoid</b>	Direct sources of heat. Contact with acids liberates toxic gas
<b>Materials to avoid</b>	Carbon dioxide (CO <sub>2</sub> ) Acids Oxidizing agents. Zinc Aluminium Brass
<b>Hazardous decomposition products</b>	ammoniaHydrogen cyanide (hydrocyanic acid)

#### SECTION 11. Toxicological information

**Acute oral toxicity** Sodium cyanide:

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	LD50 Rat: 4.8 mg/kg; (literature value);
<b>Acute inhalation toxicity</b>	Very toxic by inhalation. Low concentrations will cause irritation of the respiratory tract, headache, dizziness, nausea, vomiting, general weakness
<b>Acute dermal toxicity</b>	Sodium cyanide: LD50 Rabbit: females; 14.6 mg/kg;
<b>Skin irritation</b>	Very toxic when in contact with the skin and adverse effects similar to inhalation will occur. Acute exposure can cause skin irritation and burns. Repeated or prolonged exposure
<b>Eye irritation</b>	Sodium cyanide: irritating
<b>Eye irritation</b>	Sodium Hydroxide; Caustic Soda: Rat: Causes serious eye damage.

## SECTION 12. Ecological information

<b>Toxicity to daphnia and other aquatic invertebrates</b>	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
<b>Toxicity to algae</b>	It can cause damage to aquatic plants., Sodium Cyanide is very toxic to algae, aquatic life and micro organisms at concentrations >2 mg/l of cyanide in water
<b>Biodegradability</b>	The product is substantially biodegradable in water and soil over extended time.
<b>Bioaccumulation</b>	The product has low potential for bioaccumulation.
<b>Other adverse effects</b>	The substance is fatal to aquatic organisms if pH of natural



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water is higher than 8. The product is substantially removed by means of biological treatment processes. The no-effect level for biological treatment processes is 10 mg/l as CN ion. Large discharges may contribute to increased alkalinity in effluent treatment systems and injure sewage treatment organisms. Inform the Management Authorities on Sewage Works if this product enters the sewers.

#### SECTION 13. Disposal considerations

**Product**

Dispose of as special waste in compliance to local, national and international regulations. The product should not be allowed to enter drains, water courses or the soil. Waste must be classified and labelled prior to recycling or disposal. Contaminated absorbent must be removed and disposed via an authorised waste contractor.

#### SECTION 14. Transport information

**ADR**

**UN number:** 3414

**Class:** 6.1

**Packaging group:** I; T4;

**Proper shipping name:** SODIUM CYANIDE SOLUTION

**RID**



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**UN number:** 3414  
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### ADNR

**UN number:** 3414  
**Class:** 6.1  
**Packaging group:** I; T4  
**Proper shipping name:** SODIUM CYANIDE SOLUTION

### IMDG

**UN number:** 3414  
**Class:** 6.1  
**EmS:** F-A, S-A  
**Packaging group:** I; Marine pollutant  
**Proper shipping name:** SODIUM CYANIDE SOLUTION

**Marine pollutant** Marine pollutant

### ICAO/IATA



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<b>UN number :</b>	3414
<b>Class:</b>	6.1
<b>Packaging group:</b>	I
<b>Proper shipping name:</b>	SODIUM CYANIDE SOLUTION
<b>Further Information</b>	Should not be released into the environment.

## SECTION 15. Regulatory information

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

<b>USA TSCA Inventory</b>	All chemical constituents are listed in: USA TSCA Inventory (See chapter 3)
<b>Canadian Domestic Substances List (DSL)</b>	All chemical constituents are listed in: Canadian Domestic Substances List (DSL) (See chapter 3)
<b>Australian Inv. of Chem. Substances (AICS)</b>	All chemical constituents are listed in: Australian Inv. of Chem. Substances (AICS) (See chapter 3)
<b>New Zealand Inventory of Chemicals (NZIoC)</b>	All chemical constituents are listed in: New Zealand Inventory of Chemicals (NZIoC) (See chapter 3)
<b>Jap. Inv. of Exist. &amp; New Chemicals (ENCS)</b>	All chemical constituents are listed in: Jap. Inv. of Exist. & New Chemicals (ENCS) (See chapter 3)
<b>Japan. Industrial Safety &amp; Health Law (ISHL)</b>	All chemical constituents are listed in: Japan. Industrial Safety & Health Law (ISHL) (See chapter 3)



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<b>Korea. Existing Chemicals Inventory (KECI)</b>	All chemical constituents are listed in: Korea. Existing Chemicals Inventory (KECI) (See chapter 3)
<b>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</b>	All chemical constituents are listed in: Philippines Inventory of Chemicals and Chemical Substances (PICCS) (See chapter 3)
<b>China Inv. Existing Chemical Substances (IECSC)</b>	All chemical constituents are listed in: China Inv. Existing Chemical Substances (IECSC) (See chapter 3)

## SECTION 16. Other information

### Full text of H-Statements

- H290 May be corrosive to metals.
- H300 Fatal if swallowed.
- H310 Fatal in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

All reasonable efforts were exercised to compile this SDS in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). The SDS only provides information regarding the health, safety and environmental hazards at the date of issue, to facilitate the safe receipt, use and handling of this product in the workplace and does not replace any product information or product specifications. Since Sasol and its subsidiaries cannot anticipate or control all conditions under which this product may be handled, used and received in the workplace, it remains the obligation of each user, receiver or handler to, prior to usage, review this SDS in the context within which this product will be received, handled or used in the workplace. The user, handler





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or receiver must ensure that the necessary mitigating measures are in place with respect to health and safety. This does not substitute the need or requirement for any relevant risk assessments to be conducted. It further remains the responsibility of the receiver, handler or user to communicate such information to all relevant parties that may be involved in the receipt, use or handling of this product.

Although all reasonable efforts were exercised in the compilation of this SDS, Sasol does not expressly warrant the accuracy of, or assume any liability for incomplete information contained herein or any advice given. When this product is sold, risk passes to the purchaser in accordance with the specific terms and conditions of sale.