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## MATERIAL SAFETY DATA SHEET

Date of revision :

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### SECTION 1

#### IDENTIFICATION/PREPARATION/COMPANY

Commercial name : Sodium Cyanide

Synonyms : White cyanide, Sodium Cyanide Briquettes

Trading contact :

In case of emergency : in Korea call 052 259 7648 in the daytime or 052 259 7617 in the  
 nighttime  
in other countries inquire after local information centre

### SECTION 2 COMPOSITION

Hazardous ingredients : HCN, NaOH

CAS no. : 143-33-9

Customs no. : 2837111000

EINECS no. : 205-599-4

Hazchem code : T + very toxic

EEC no. : 006-007-00-5

R-phrases : 26/27/28-32

SIN/UN no. : 1689

ADR no. : 6.1 41a

S-phrases : 7-28-29-45

CHIP no. :

IMDG page no. : 6.1(Page no.6257)

### SECTION 3 HAZARD IDENTIFICATION

Inhalation : - SHORT TERM EFFECTS : May cause irritation, possibly severe.

Additional effects may include suffocation.

- LONG TERM EFFECTS : May cause effects as in short term exposure.

Additional effects may include nausea, headache and dizziness.

Skin contact : - SHORT TERM EFFECTS : May cause burns. Additional effects may include suffocation.

- LONG TERM EFFECTS : In addition to effects from short term exposure, rash, itching, nausea, headache and dizziness may occur.

Eye contact : - SHORT TERM EFFECTS : May be fatal if absorbed. May cause irritation possibly severe. May cause effects as reported in short term ingestion. Additional effects may include blurred vision and suffocation.

- LONG TERM EFFECTS : Same effects as short term exposure.

Ingestion : - SHORT TERM EFFECTS : May be fatal if swallowed. May cause burns.

Additional effects may include rash, nausea, chest pain, gasping, irregular heartbeat, headache, blindness, bluish skin color, suffocation, lung congestion, paralysis, convulsions and coma.

- LONG TERM EFFECTS : In addition to effects from short term exposure, dizziness may occur.

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## SECTION 4 FIRST AID MEASURES

**General** : Remove contaminated or saturated clothing immediately and dispose of safely. Bring affected people out of danger area.

**Inhalation** : FIRST AID - remove from exposure. Give amyl nitrite inhalation, 1 ampule (0.2 mL) every 5 minutes. If breathing has stopped or is depressed oxygen to maintain high blood/oxygen tension. Get medical attention immediately. (Dreisbach, Handbook of Poisoning, 12th Ed.)

**Skin contact** : FIRST AID - Remove contaminated clothing and shoes and wash affected areas with soap or mild detergent and large amount of water, taking care not to contact the chemical. Get medical attention immediately. (Cain, Emergency Treatment and Management, 7th Ed)

**Eye contact** : FIRST AID - Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains (at least 15-20 minutes). Continue irrigation with normal saline until pH has returned to normal (30-60 minutes). Cover with sterile bandages. get medical attention immediately.

**Ingestion** : FIRST AID - If patient is asymptomatic administer syrup of ipecac and/or perform gastric lavage, using tap water, dilute sodium bicarbonate solution or preferably, if available, dilute potassium permanganate solution (1:5000). Activated charcoal is ineffective. If breathing has stopped, give artificial respiration. Maintain airway. Oxygen therapy may be of value in combination with the antidote (Gosselin, Clinical Toxicology of Commercial Products 5th Ed.). Treatment should be performed by qualified medical personnel. Get medical attention immediately.

## SECTION 5 FIRE FIGHTING MEASURES

**Suitable extinguishing media** : Alkali powder quenching agent

**Extinguishing media to avoid** : Water, carbon dioxide

**Exposure hazards** : In the case of fire, hydrocyanic acid may be released

**Special protection for firemen** : In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit

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## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Personl precautions** : Be aware of stringent hygienic regulations and wear protective clothing, goggles and a NIOSH/MSHA approved respirator. Avoid formation of dust. Ensure sufficient ventilation. Avoid skin contact because of the danger of skin absorption

**Environmental precautions** : Do not let the material get into the public sewage system. Cyanide-containing sewage water and solutions must be decontaminated before entering a public canal network or stretch of water

**Spillage control** : Absorb mechanically and collect in a suitable container. Refer to manufacturer/supplier for information on recovery/recycling.

## SECTION 7 STORAGE AND HANDLING

**Handling** : Store under lock and key or in a way that only skilled persons have access to it

**Storage** : Keep container tightly sealed and store ina dry, well-ventilated place

## SECTION 8 EXPOSURE CONTROLS /PERSONAL PROTECTION

**General** : All precautionary measures indicated have to observed. No eating, drinking, Smoking or snuffing tobacco at work. After contact with skin, wash immediately with plenty of water. Preventive skin protective recommended. If the limites at the workplace are exceeded and/or larger amounts are released (leakage, spilling, etc.)the indicated respiratory protection should be used. If there is the possibility of skin/eye contact the indicated hand/eye/body protection should be used. Keep clothes separate.

**Respiratory protection** : If hydrocyanic acid occurs ; respiratory protective equipment independent of surrounding air. Note time limit for wearing respiratory protective equipment. If dust occurs; respirator with B2-B3 combination filter.

**Skin protection** : Chemical protective suit. During cleaning work; rubber or plastic boots. Immediately change moistened and saturated boots. Immediately change moistened and saturated work clothes

**Eye protection** : Basket-shaped glasses

**Hand protection** : Protective gloves ; rubber or plastic

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## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance/odour : Colorless to white deliquescent briquettes

pH-value : 11 - 12 (20g/l water)

Melting point : 564°C

Boiling point : 1,496°C

Density : 1.61g/cm<sup>3</sup> at 20°C (water = 1)

Vapour density : 0.10K Pa (at 800°C)

Vapour pressure : 1mmHg (817°C)

Flash point : not applicable

Oxidizing Properties : not applicable

Explosive properties : not applicable

Auto ignition temp. : not applicable

Solubility : 37 weight % (at 20°C in water)

## SECTION 10 STABILITY / REACTIVITY

Conditions to avoid : Stable up to 1,500

Materials to avoid : Under the influence of acid (as well as carbon dioxide)  
hydrocyanic acid is released which is combustible and may react  
with air to explosive gas mixtures

Hazardous decomposition products : Hydrocyanic acid

## SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation : ACUTE EXPOSURE - May cause irritation to the nose and mucous membranes.  
Mists of alkali cyanides, in concentrations slightly more congestion.  
CHRONIC EXPOSURE - Exposure to low levels of cyanide compounds over long  
periods of time, is reported to cause loss of appetite, headache, weakness,  
nausea, dizziness.

Skin contact : Contact with aqueous solution or solid on moist skin may cause redness  
pain, burns, contact dermatitis and ulcers which are slow to heal.

Eye contact : The lethal dose for red vision, and serious corneal burns.

Ingestion : Massive doses may result in immediate unconsciousness, often with  
convulsions and death, usually 1-15 minutes.

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## SECTION 12 ECOLOGICAL INFORMATION

Aquatic toxicity : Acute fish toxicity - LC50 (-h) 0.07 cyanide mg/l. *Leuciscus idus melanotus*, literature Acute toxicity to crustaceans - EC50 (-h) *Daphnia magna* 3mg/l, cyanide, literature

Bacterial toxicity : *Escherichia coli*, EC50 (-h) 0.0004 cyanide mg/l, literature

## SECTION 13 DISPOSAL CONSIDERATIONS

Disposal of product and packaging according to E.C. or local authorities regulations

## SECTION 14 TRANSPORT INFORMATION

Hazard warning : Toxic

Hazchem symbol :

UN no. : 1689

IMDG page no. : 6257 (IMDG code : 6.1)

ADR Class : 6.1 4 1a

Packaging group : PG I

EmS : 6.1-04

## SECTION 15 REGULATORY INFORMATION

Label name : Sodium Cyanide Briquettes

Hazchem symbol :

R-phrases : 26/27/28 Very toxic by inhalation, in contact with skin and if swallowed  
32 Contact with acids liberates very toxic gas

S-phrases : (1/2) Keep locked up and out of reach of children  
7 Keep container tightly closed  
28 After contact with skin, wash immediately with water  
29 Do not empty into drains  
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

Concentration limits : -

## SECTION 16 FURTHER INFORMATION

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