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药劑

## Material Safety Data Sheet

### SECTION I – PRODUCT IDENTIFICATION AND USES

**Product name & description**

SODIUM CYANIDE, HYDROCYANIC ACID SODIUM SALT



*Sodium cyanide is a highly toxic chemical compound. Immediate medical attention is required in all events of cyanide poisoning as it is quickly fatal.*

**Applications**

Sodium cyanide works as a depressant to extract gold and other precious metals from ore.

**Sales representative**

LMS Canada

### SECTION II – CHEMICAL INGREDIENTS

**Main ingredient**

NaCN 94 – 98%,

**Other**

NaOH ≤ 1.0%, Na<sub>2</sub>CO<sub>3</sub> ≤ 2.0%, water ≤ 2.0%, insoluble substance ≤ 0.1%

### SECTION III – PHYSICAL & CHEMICAL DATA

**Physical state**

Solid

**Appearance**

White granular powder

**Odour**

Bitter almonds but not everyone can smell.

**Vapor pressure**

0.76 mmHg at 800 °C

**Vapor density**

1.7 (Air = 1)

**Melting point**

Approx 564 °C

**Evaporation rate**

No information found

**pH value**

Aqueous solution presents of strong alkali, pH = 12 - 14

**Special gravity**

1.596 g/cm<sup>3</sup>

### SECTION IV – FIRE AND EXPLOSION

**Flammability**

Not combustible, but upon decomposition or contact with acid, this material releases highly flammable and toxic hydrogen cyanide gas. Keep away from all ignition sources including cigarettes, open flames, sparks, mobile phones etc...

**Means of extinction**

May Use dry powder, soil or any means suitable for extinguishing surrounding fire. Do not use carbon dioxide as it can react with this material in the presence of moisture to produce hydrogen cyanide. Water spray may be used to keep fire exposed containers cool. Wear fully protective clothing and approved self-contained breathing apparatus with face protection when fighting fire.

**Flashpoint**

N/A

**Auto-ignition temperature**

538 °C

**Explosion data**

Not considered as an explosion hazard, but violent explosion occurs if

melted with nitrite salt. Sealed containers may rupture when heated.

## SECTION V – STABILITY AND REACTIVITY

**Chemical stability** Stable when dry. Moisture will cause slow decomposition, releasing hydrogen cyanide gas.

**Solubility in water** 48 g/100 ml at 10 °C

**Incompatible conditions and substances**

Heat, moisture, strong acids and strong oxidizing agents

**Reactivity, and under what conditions**

Emits toxic fumes of cyanide and oxides of nitrogen when heated to decomposition. Reacts with acids in air can liberate toxic and combustible hydrogen cyanide gas. Strong reaction with nitrites and chlorates may pose explosive hazards.

## SECTION VI – TOXICOLOGICAL PROPERTIES

**Skin contact** May lead to severe pain and skin burns. Solutions are corrosive to skin and eyes and may cause deep ulcer which heal slowly. May also be absorbed through skin with symptoms similar to those noted for inhalation.

**Eye contact** May result in irritation, pain, redness, blurred vision and eye damages.

**Inhalation** Corrosive to respiratory tract. The substance reduces cellular respiration and may result in blood, central nervous system, and thyroid changes. Symptoms include headache, weakness, dizziness, labored breathing, nausea and vomiting, which can be followed by weak and irregular heart beat, unconsciousness, and convulsion, coma and death.

**Ingestion** Highly toxic! Corrosive to gastro-intestinal tract with burning in mouth and throat, and causes abdominal pain. Bitter almonds odour may be noted on the breath of vomits to identify the illness. Larger doses may produce sudden loss of consciousness and prompt death form respiratory arrest. Ingestion of 200 mg of NaCN will cause fatal danger.

**Ecological effect** This material is expected to be very toxic to both aquatic and terrestrial lives.

## SECTION VII – PREVENTIVE MEASURES

**Personal protective gear**

A ventilation system and/or a general exhaust system are recommended to keep employee exposure below the nationally or locally stipulated airborne exposure limits (e.g. OSHA permissible Exposure Limit: 5 mg/m<sup>3</sup> skin). Prevent dispersion of the material into general work area. If exposure limit is exceeded and engineering controls are not feasible, wear a fully protective face shield with self-contained breathing apparatus and take every possible precaution.

**Hand and skin** Wear impervious protective clothing, including boots, gloves, lad coat, apron or coveralls, as appropriate, to prevent skin and hand contact.

**Eye** Use appropriate eye protection equipment approved for chemicals to minimize contact with dust from dry product such as chemical safety goggles. Wear full face shield where dusting or splashing of solutions is possible.

**Other** Workers using cyanides should have a replacement and periodic medical exam. Those with history of central nervous system, thyroid, skin, heart or lung diseases may be more susceptible to the effects of this substance.

## SECTION VIII – FIRST AID MEASURES

<b>General</b>	<i>In case of cyanide poisoning</i> , start first aid treatment immediately, seek urgent medical attention. Consult professional for cyanide poisoning first aid treatment and it should be practiced before beginning work with cyanides. Eye wash facilities and cyanide first aid kit should be readily available in cyanide workplace.
<b>Skin</b>	Immediately remove contaminated clothing and shoes, flush skin with plenty of water for at least 15 minutes. Obtain medical attention while flushing skin. Thoroughly wash clothing and shoes before reusing.
<b>Eye</b>	Immediately flush eyes with plenty of water for at least 15 minutes with holding eyelids apart occasionally. Obtain medical attention at once.
<b>Inhalation of dust</b>	Remove victim to fresh air. Apply first aid treatment if poisoning symptoms occur, get medical attention immediately. Do not give mouth to mouth resuscitation as the rescuer may become a victim.
<b>Ingestion</b>	If victim is conscious, immediately give activated charcoal slurry. Never give anything by mouth to an unconscious victim. Do not induce vomiting as it could interfere with resuscitator use. Seek immediate medical attention.

## SECTION IX – STORAGE, SHIPPING & DISPOSAL

### Spill and waste disposal

Ventilate area of leak or spill immediately. Allow only qualified personnel to handle spill. Clean-up personnel should use protective clothing and equipment noted in **VII Protective Measures** while handling spills and waste. May use hypochlorite solution to decompose the material before wash the contaminated area with water. Do not flush spill into drain or sewer! Waste should be treated in accordance with applicable national and local regulations on hazardous waste and send to an authorized waste facility.

### Handling procedures and equipment

Workers must carefully follow good hygienic practices, including no eating, drinking, or smoking in workplace, proper use and maintenance of protective equipment is essential. Special training should be given to workers using cyanides. Observe all warnings and precautions listed for the product.

### Storage and shipping requirement

Keep in tightly closed containers, store in a separate, dry, cool, and ventilated area. Protect against physical damages. Ensure containers are properly labeled. Check regularly for spills. Keep away from sources of ignition and direct sunlight. Isolate from combustibles and flammables since subsequent fire fighting with water could lead to cyanide solution runoff. Handle with care during shipping. Transportation equipment can only take the indicated routes, no stops allowed.

## SECTION X – PREPARATION OF MSDS

Prepared and translated by  
Last update

LMS Canada  
June, 2006

Note: The information in this Material Safety Data Sheet associates only to the specific material designated herein and does not apply to uses in combination with any other materials or for any other processes. The information given is based on technical data provided by the manufacturer and those publications available when compiling/updating document and we believed to be reliable. It is subject to change or update without notice. Because conditions of applications vary and are beyond our control, it is users' responsibility to obtain safety data for combinations with other materials, or for applications in other processes. Always follow local safety regulations applicable on erection sites.