



CHIN CHA-ROEN INTERCHEM CO.,LTD.

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**NIPPON SODA CO.,LTD.**

**Material Safety Data Sheet**

MSDS No. KCN

Section 1 Chemical Product and Company Identification					
Product Name		Potassium cyanide			
Chemical Name		Potassium cyanide			
Primary Use		Electroplating, Raw materials of chemicals			
Distributor	Name				
	Address				
	TEL. No.			Fax No.	
Manufacturer	Name	Nippon Soda Co., Ltd.			
	Address	2-1, Ohtemachi 2-Chome, Chiyodaku, Tokyo 100-8165, Japan			
	TEL. No.		+81-3-3245-6134	Fax No.	+81-3-3245-6217
Emergency	TEL. No	1-800-424-9300 (CHEMTREC)		Fax No.	
Date Prepared		Feb 19, 2010		Date Revised	

Section 2 Hazardous Identification				
Route of Entry		Skin : Yes	Inhalation : Yes	Ingestion : Yes
Emergency Overview	White crystal with faint order of bitter almonds. May be fatal if swallowed and through skin. Very toxic by inhalation, in contact with skin and if swallowed. Contact with acids liberates very toxic gas. Very toxic to aquatic organisms.			
Potential Health Effects				
Eye	Severe irritant to eyes. Eye contact may cause corneal damage or blindness.			
Skin	May be fatal if through skin. Mild irritant to skin. Skin contact may produce inflammation and blistering.			
Inhalation	May be fatal if inhaled. Causes respiratory tract irritation and symptoms including weakness, headache, giddiness, dizziness, confusion, anxiety, nausea and vomiting.			
Ingestion	May be fatal if swallowed. Causes gastro-intestinal tract burns. May cause effects similar to those for inhalation exposure.			
Signs and Symptoms	Rapidly fatal poison when taken into the digestive system. Dizziness, mental dulness, headache, rapid pulse, constriction of chest, numbness of the upper lip, blood-shot eyes, skin irritation, vomiting, labored breathing, great quickness of heart beat, etc.			
Chronic	Not available.			
Target Organs	Not available.			
Other Comments	None			

Section 3 Composition/Information on Ingredient				
Component	% (wt.)	Exposure Limits		
		OSHA PEL	ACGIH TLV	Specified Other Limit
Potassium cyanide (CAS No. 151-50-8)	≥ 98	5(mg/m <sup>3</sup> ) As CN	5(mg/m <sup>3</sup> ) as CN	None
Potassium hydroxide (CAS No. 1310-58-3)	<1	Not listed	2(mg/m <sup>3</sup> )	None
Potassium carbonate (CAS No. 584-08-73)	<1	Not listed	Not listed	None

Section 4 First Aid Measures	
Eye	Immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.
Skin	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	Vomit by drinking large amounts of water or milk . Get medical attention immediately. Never give anything by mouth to an unconscious person.
Note to Physicians	None

Section 5 Fire Fighting Measures	
Flammable Properties	Not flammable
Unusual Fire & Explosion Hazards	Do not use carbon dioxide extinguisher. Thermal decomposition or combustion produces very toxic fumes of potassium oxide, hydrogen cyanide, and nitrogen oxides.
Extinguishing Media	Alcohol foam, polymer foam or water spray.
Fire Fighting Instructions	Wear a NIOSH/MSHA-approved self-contained breathing apparatus and special protective clothing to avoid inhalation of toxic decomposition product and contact with skin and eyes. Move containers from fire area if you can do it without risk. Fight fire from maximum distance. Do not scatter the material.

## Section 6 Accidental Release Measures

### Protective equipment

Wear suitable protective equipment. Refer to section 8 for personal protective equipment.

### Personal precaution

Avoid raising dust.

### Environment precaution

Prevent from releasing it to the environment as this product is very toxic to aquatic organisms.

### Cleaning procedure

Avoid water. Keep unnecessary people away. Collect the material using proper tools such as a shovel.

Then collect the rest of the material using a broom and place in a closed container. The tools should be washed with water thoroughly.

When the spilled product gets wet, wash the polluted area and collect all the aqueous potassium cyanide solution.

Don't flush into a sewer.

## Section 7 Handling and Storage

### Handling

Wear suitable protective equipment. Refer to section 8 for personal protective equipment.

Don't breathe dust.

Don't get in eyes, on skin, on clothing.

Use only with adequate ventilation.

Wash thoroughly after handling.

### Storage

Store in tightly sealed containers to avoid the contact with air or water.

Don't store in any place where acidic gases may be generated or acids are stored.

Don't store together with any foods and feeding stuff.

Store in a cool dry place.

Keep the store room locked to prevent theft, misplacing or spilling.

## Section 8 Exposure Control/Personal protection

### Specific Engineering Controls

A system of local and/or general exhaust is recommended to keep exposures below the Airborne Exposure Limits.

### Personal Protection Equipment

Respiratory	NIOSH/MSHA-approved respirator for hydrogen cyanide	Gloves	Rubber
Eye/Face	Safety goggles	Footwear	Rubber boots
Clothing	Suitable working wear with long sleeves	Others	Rubber apron, safety shower and eye bath

Section 9 Physical and Chemical Properties			
Appearance	White crystal	Odor	Faint odor of bitter almonds
Density	1.56 g/cm <sup>3</sup>	Bulk Density	1.3~1.4g/cm <sup>3</sup> (tablet) 0.7~0.8 g/cm <sup>3</sup> (granular)
Melting Point	634.5°C	Boiling Point	Not applicable
Vapor Density (air=1)	Not applicable	Vapor Pressure	Not applicable
Evaporation Rate (Ethyl acetate=1)	Not applicable		
Solubility in water	72g/100g water (at 25°C)	Solubility in solvent	Not available
Log Po/w	Not applicable		
Flash Point	Not applicable	Autoignition Temp.	Not applicable
Explosive Limit	Not available		

Section 10 Stability and Reactivity			
Chemical Stability	Stable	X	If unstable, condition to avoid unstable reaction
	Unstable		
Hazardous Polymerization	May occur		If polymerization may occur, condition to avoid it
	Will not occur	X	
Reactivity	Reacts with any acid to release toxic hydrogen cyanide gas. Moisture may cause this material to volatilize as hydrogen cyanide. Reacts with carbon dioxide in ordinary air to form toxic hydrogen cyanide gas.		
Incompatible materials	Acids, acidic salts, acidic gases, strong oxidizers, moisture or water		
Hazardous Decomposition Product	Contact with acid releases highly flammable and very toxic hydrogen cyanide gas. Moisture may cause this material to volatilize as hydrogen cyanide. Thermal decomposition or combustion produces very toxic fumes of potassium oxide, hydrogen cyanide, and nitrogen oxides.		
Others	None		

Section 11. Toxicological Information			
Effect of Acute Exposure			
Acute Toxicity			
Oral	LD <sub>50</sub> (rat)	7.49mg/kg	
Dermal	LD <sub>50</sub> (rat)	22.3mg/kg	
Effect of Chronic Exposure			
Not available			
Irritancy			
Eyes : Contact with eyes causes severe irritation.			
Dermal : Contact with skin causes mild irritation.			

Sensitization Skin(guinea pig) : Not available.			
Mutagenicity	Ames test Positive		Chromosomal aberration test Not available
	UDS test Not available		Micronucleus test Not available
Carcinogenicity	NTP :Not listed	IARC Monograph: Not listed	ACGIH Regulated: Not listed
Others None			

## Section12 Ecological Information

### Environmental Fate

Not available

### Ecological Toxicity

#### Acute Toxicity to aquatic organisms

Acute Toxicity to Mysid shrimp	LC <sub>50</sub> (mysid shrimp):	0.113mg/L(96h)
Acute Toxicity to Fish	LC <sub>50</sub> (rainbow trout):	0.062 mg/L(96h)
Acute toxicity to Daphnia	EC <sub>50</sub> (daphnia magna):	0.49 mg/L(48h)
Acute toxicity to Alga	EC <sub>50</sub> (alga):	0.13 mg/L(72h)

## Section 13 Disposal Considerations

Wear suitable protective equipment. Refer to section 8 for personal protective equipment.

- 1)Treat a dilute basic solution(pH 10-11) of the material with a 50% excess of sodium (or calcium) hypochlorite solution (bleach).
  - 2)Control the temperature by the addition rate of bleach, if necessary.
  - 3)Let stand overnight.
  - 4)Cautiously adjust solution to pH 7 and dilute with plenty of water before disposal of solution.
- Obey Federal, State and Local regulations for health and safety environmental protection etc..

## Section 14 Transport Information

### International marine transportation(IMDG)

Proper Shipping Name: Potassium cyanide, solid

UN No. 1680

Hazard Class 6.1

Packaging Group I

Marine pollutant Applicable(P)

### DOT Regulations

Proper Shipping Name: Potassium cyanide, solid

Identification No. 1680

Hazard Class 6.1

Packing Group I

North American Emergency Response Guidebook No. 157

### ICAO/IATA Dangerous Goods Regulations

Proper Shipping Name: Potassium cyanide, solid

UN No. 1680

Hazard Class 6.1

Packing Group I

**Section 15 Regulatory Information**

TSCA	Listed
OSHA (highly hazardous chemicals)	Listed
SARA (extremely hazardous substance)	Listed
CERCLA (Hazardous Substance)	Listed
Others	None

**Section 16 Other Information**

## Label Information

## NFPA Rating

Health ; 3 Flammability; 0 Instability; 0

## Regulatory Information in other area

ENCS (Japan) : Listed (1-1086)

DSL(Canada) : Listed

EINECS (EU) : Listed (205-792-3)

AICS (Australia) Listed

IECSC (China) : Listed

ECL(South Korea): Listed(KE-29092)

## Revised Information

This MSDS is revised according to ANSI Z400.1-2003.

This information is taken from sources or based upon data believed to be reliable.

However, Nippon Soda Co., LTD. makes no warranty as to the absolute correctness or sufficiency of any of the foregoing or that additional or other measures may not be required under particular conditions.