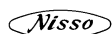


Section 1 Chemical Product and Company Identification			
Product Name	HI-CHLON 70G		
Chemical Name	Calcium Hypochlorite		
Primary Use	Sterilant for swimming pool, drinking water, wastewater and food processing.		
Distributor	Name		
	Address		
	TEL. No.		Fax No.
Manufacturer	Name	Nippon Soda Co., Ltd.	
	Address	2-1, Ohtemachi 2-Chome, Chiyoda-ku, Tokyo 100-8165, Japan	
	TEL. No.	+81-3-3245-6148	Fax No. +81-3-3245-6248
Emergency	TEL. No	+1-703-527-3887(CHEMTREC)	
Date Prepared		Date Revised	June 15, 2011

Section 2 Hazardous Identification			
Route of Entry	Skin : No	Inhalation : Yes	Ingestion : Yes
Emergency Overview	<p>White granular with chlorine odor.</p> <p>Strong oxidizing agent. It may be cause fire or explosion in contact with combustibile substance, reducing agent and compounds containing nitrogen. It evolves toxic chlorine in contact with acid. It does not have strong toxicity but corrosive property to skin, eye and mucous membranes.</p> <p>Very toxic to aquatic organisms.</p>		
Potential Health Effects			
Eye	<p>Corrosive to eye.</p> <p>May cause serious damage such as the loss of eyesight if the medical treatment is too late.</p>		
Skin	<p>Corrosive to skin. May cause serious damage to skin if the medical treatment is too late.</p>		
Inhalation	<p>Corrosive to tissues of the mucous membranes and upper respiratory tract.</p> <p>May be fatal by inhalation</p>		
Ingestion	<p>Not be strong toxic but corrosive to the mucous membranes of digestive organ.</p> <p>May be fatal by ingestion.</p>		
Signs and Symptoms	<p>May include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.</p>		
Chronic	Not known		
Target Organs	Not known		
Other Comments	None		

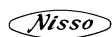


Section 3 Composition/Information on Ingredient				
Component	% (wt.)	Exposure Limits		
		OSHA PEL	ACGIH TLV	Specified Other Limit
Calcium hypochlorite (CAS No.7778-54-3)	≥ 70 (as available chlorine)	Not listed	Not listed	None
Water (CAS No.7732-18-5)	12.5 ± 2%	Not listed	Not listed	None
Sodium chloride (CAS No. 7647-14-5)	} < 20	Not listed	Not listed	None
Calcium chloride (CAS No. 10043-52-4)		Not listed	Not listed	None
Calcium hydroxide (CAS No. 1305-62-0)		5mg/m3	5mg/m3 (respirable fraction)	None
Calcium chlorate (CAS No. 10137-74-3)		Not listed	Not listed	None

Section 4 First Aid Measures	
Eye	Immediately flush eyes or skin with plenty of water for at least 15 minutes. Assure adequate of flushing of the eyes by separating eyelids with fingers. Call a physician.
Skin	Immediately flush skin with plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Get medical advice if irritation persists.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
Ingestion	Do not induce vomiting. Call a physician immediately.
Note to Physicians	None

Section 5 Fire Fighting Measures	
Flammable Properties	Not flammable but strong oxidizing agent.
Unusual Fire & Explosion Hazards	Contamination or contact with any foreign matter such as combustible materials may cause FIRE or EXPLOSION. Especially avoid contact with compounds containing nitrogen such as chlorinated isocyanurate as toxic and explosive trichloroamine can be evolved. It may cause fire or explosion by being heated or heat-accumulation by contact with water.
Extinguishing Media	The fire about this material is very strong. Flood with water. Do not use dry chemicals, CO ₂ , foams or small amount of water.
Fire Fighting Instructions	This product may evolves toxic gas such as chlorine in fire. Evacuate personnel to a safe area. Wear suitable protective equipment containing self-contained breathing apparatus. Move containers from fire area if you can do without risk. If impossible, cool fire-exposed containers with water spray.

Section 6 Accidental Release Measures	
Evacuate area. Shut off all sources of ignition. Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Place in closable containers using tools and transport them outdoors. They must not be sealed as decomposition gas evolves in storing. Clean up spill, flush with plenty of water. This chemical is toxic to aquatic organisms. Treated water should not be discharged directly to river, lake or pond etc. Refer to "Waste Disposal Method" for discharging waste water. Do not return spilled chemical into the original drum or vessel. Do not throw this chemical into the trash.	



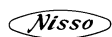
Section 7 Handling and Storage	
Handling	Refer to section 8 for personal protective equipment. Do not breathe dust. Do not get in eyes, on skin and on clothing. Use only in a dry, clean cup or vessel made of ceramic, plastic or glass when handling. Protect from direct contact with water and excessive moisture. Do not drop or roll the drums. Do not drop onto, or slide across sharp objects. Avoid creasing or impacting of side walls. Do not permit truck engine exhaust gas to contact this chemical. Avoid contact combustible materials, reducing agent acid and compounds containing nitrogen such as chlorinated isocyanurate.
Storage	Keep away from combustible materials, reducing agent, compounds containing nitrogen heat, sparks, open flame and sunlight. Store in a cool place in original container. Keep tightly closed. Do not store on side.

Section 8 Exposure Control/Personal protection			
Specific Engineering Controls	Local exhaust : Recommended Mechanical(general) ventilation : Desirable		
Personal Protection Equipment			
Respiratory	NIOSH/MSHA-approved respirator for dust if the dust is raised.	Gloves	Chemical-resistant gloves (such as rubber)
Eye/Face	Safety goggles	Footwear	Boots
Clothing	Aprons or chemical suits	Others	Eye bath and safety shower

Section 9 Physical and Chemical Properties			
Appearance	White granular	Odor	Chlorine odor
Density	Not applicable	Bulk Density	About 2 g/cm ³
Melting Point	Not applicable	Boiling Point	Not applicable
Vapor Density (air=1)	Not applicable	Vapor Pressure	Not applicable
Evaporation Rate (Ethyl acetate=1)	Not applicable		
Solubility in water	Approx 20g/100g(at 20°C)	Solubility in solvent	Not applicable
Log Po/w	Not available		
Flash Point	Not applicable	Autoignition Temp.	Not applicable
Dust explosion	Lower limit concentration : None		

Section 10 Stability and Reactivity			
Chemical Stability	Stable		Conditions to Avoid Heat and moisture
	Unstable	x	
Hazardous Polymerization	Will not occur	x	
	May occur		
Reactivity	Strong oxidizer. May react with combustible materials and reducing agents violently and exothermically. May react with compounds containing nitrogen such as chlorinated isocyanurates and evolve toxic and explosive trichloroamine. It reacts with acid and liberate toxic chlorine.		
Incompatible materials	Water, moisture, acids, acidic salts, acidic gases, strong reducing agents, chlorinated isocyanurates, nitrogen compounds such as ammonia and amines, metal oxides or combustible materials		
Hazardous Decomposition Product	Gradually generates oxygen, toxic chlorine and hydrogen chloride gas. Toxic chlorine and oxygen by thermal decomposition. Toxic and explosive trichloroamine may be evolved by contact with nitrogen compounds, especially chlorinated isocyanurates. Toxic chlorine is evolved rapidly by contact with acidic materials.		
Others	None		

Section 11 Toxicological Information			
Effect of Acute Exposure			
Acute Toxicity			
Oral	LD ₅₀ (rat)	790~1260 mg/kg as a calcium hypochlorite containing 70% available chlorine	
Effect of Chronic Exposure			
Not known.			
Irritancy			
Irritant to eye	: This product and the high conc. of its solution is very corrosive to eye. May cause serious damage such as the loss of eyesight if medical treatment is too late.		
Irritant to skin	: Severely irritant(PII = 5.8, rabbit ¹) This product and the high conc. of its solution is corrosive to skin. May cause serious damage if medical treatment is too late.		
Sensitization			
Generally this chemical is not considered to be sensitizer.			
Mutagenicity	Ames test Positive and negative (the different results are reported)		Chromosomal aberration test Positive
	UDS test Not known		Micronucleus test Negative
Carcinogenicity	NTP : Not listed	IARC Monograph: 3	ACGIH Regulated: Not listed
Others None			

**Section 12 Ecological Information**

Environmental Fate

Degradability

In water this chemical is decomposed to calcium chloride and oxygen relatively rapidly.
This decomposition is accelerated by sunshine.

Bio-accumulative potential

Not available

But, bio-accumulative potential is estimated to be very low because of the high solubility in water.

Ecological Toxicity

Very toxic to aquatic organisms

Acute Toxicity to Fish : LC₅₀(Atlantic silverside); 0.15mg/L(96hr)

LC₅₀(White perch); 0.22mg/L(96hr)

Acute toxicity to Daphnia: LC50(Daphnia magna) ; 0.116mg/L(48hr)

Acute toxicity to Algae : ErC(Diatom); 0.075mg/L(24hr)

Section 13 Disposal Considerations

Dispose in accordance with all applicable federal, state, and local regulations for environment and health.

General procedure for treatment of this chemical is following

- 1) Make a 3 % solution of the chemical in water.
- 2) Gradually add a 50 % excess of aqueous sodium bisulfite with stirring at room temperature.
- 3) An increase in temperature indicates that a reaction is taking place.
- 4) Destroy excess bisulfite, neutralize and flush the solution down the drain.

Section 14 Transport Information

International marine transportation(IMDG)

Proper Shipping Name: Calcium hypochlorite, hydrated mixture, corrosive

UN No. 3487

Hazard Class : 5.1 Subsidiary Hazard Class : 8

Packing Group II

Marine pollutant Applicable

DOT Regulations

Proper Shipping Name: Calcium hypochlorite, hydrated mixture, corrosive

Identification No. UN 3487

Hazard Class : 5.1 Subsidiary Hazard Class : 8

Packing Group II

North American Emergency Response Guidebook Code. 140

ICAO/IATA Dangerous Goods Regulations

Proper Shipping Name: Calcium hypochlorite, hydrated mixture, corrosive

UN No. 3487

Hazard Class : 5.1 Subsidiary Hazard Class : 8

Packing Group II

Section 15 Regulatory Information

TSCA

All ingredients are registered

OSHA (highly hazardous chemicals)

All ingredient are not listed

SARA (extremely hazardous substance)

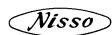
All ingredient are not listed

CERCLA (Hazardous Substance)

All ingredient are not listed

Others

None

**Section 16 Other Information**

Label Information

NFPA Rating : Health ; 2 Inflammability ; 0 Instability ; 2 Special ; OX

Regulatory Information in other areas

ENCS(Japan): All ingredients are listed. No. (1)-177(calcium hypochlorite)

DSL(Canada): All ingredients are listed.

EINECS/ELINCS(EU): All ingredients are listed in EINECS. EC No.2319087(calcium hypochlorite)

IECSC(China): All ingredients are listed.

Revised Information

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

Reference

- 1) Hazardous evaluation certificate, No.KK2123/10, Physical & Chemical Analysis Center, Nippon kaiji Kentei Kyokai(2011.4.15)

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