Material Safety Data Sheet

1 Product And Company Identification

Product Name: Calcium Hypochlorite
STARCHLON 65%

Manufacturer
Name : Nankai Chemical Co., Ltd.
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Reference No. : 218 November 25, 1992 The 1st edition
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2 Hazardous & Toxicological Information Classification by GHS

Physical/Chemical Hazard

3 Composition/Information on Ingredients

Product name: : Calcium Hypochlorite
Chemical name : Calcium Hypochlorite,
Calcium Oxychloride or Chlorinated Lime
Chemical Formula or Structural Formula
: Ca(ClO)2
Composition : AVAILABLE CHLORINE 65%
CAS No : 7778－54－3
Chemical Manufacturing and Inspection Act
: （1）－ 177
Industrial Health and Safety Act
: （1）－ 177
Existing Chemicals Evaluation Act of Japan:
: NA
The United Nations Classification
: Class 5.1 (Oxidizing Material, Container Grade Ⅱ)
The UN No. : 3487

4 Hazards Identification

Fire Defense Law of Japan: Hazards Group Ⅰ

Physical And Chemical Hazards

Danger:

Direct contact with the substances mentioned below may cause decomposition of material and fire or explosion.

Fire, heat, acid, alkali, organic solvent, reducing agent and other combustible material like oil&fat, grease.

Contact with those above may cause degradation of material and fire or explosion.

Contact with inorganic bleaching powder, ammonia and ammonium salt may generate hazardous and explosive gases.

Potential Health Effects:

Eye contact may cause irritation and pain burns.

Skin contact may cause irritation and prolonged contact may cause burns.

Inhalation may cause irritation, choking and damage to respiratory tract, mucous membranes.

Ingestion may cause damage to mucous membranes and digestive tract.

Potential Environmental Effects

Material is believed not to persist in the environment. Hydrolysis reaction occurs in water.

Odor: Chlorine-like odor

Classification: Oxidizing substance

Classification of Danger and Harmfulness

Name of Classification
: Oxidizing Substances

Danger : They are applicable under the Ⅰ grade dangerous articles of the Fire Services Act.
If they are exposed to heat, or touch grease, oil, deoxides, and other flammable materials,they dissolve and they may cause fire or an explosion.
If they are mixed with organo bleaching powder (chlorinated isocyanuric acid) they produce harmful and explosive gas.

Harmfulness : In case of personal contact, they irritate eyes and roughen skin.
If swallowed, mucus problems will occur.

Effective environment
: They gradually dissolve in water.

5 First Aid Measures

Inhalation

Immediately remove the victim to fresh air or uncontaminated area.

Call immediately emergency services and medical assistance.

Eye Contact

Immediately wash thoroughly with running water, eyes and upper/lower lids for at least 15minutes.

Immediately get Medical Attention.

Skin Contact

Immediately remove clothes and/or wash contaminated area with running water.

Wash contaminated area with soap and running water for at least 15 minutes.

Immediately get Medical Attention.

Ingestion

Immediately get Medical Attention.

When conscious, drink plenty of water or milk and vomit.

When unconscious, do not force to vomit.

6 Fire Fighting Measures

Fire And Explosion Hazards

Extinguish Media

Large amount of water.

Do not use any dry chemicals, carbon dioxide, halogenated extinguishing agent

In case of fire

Evacuate to the safe areas where supposed locations of upwind and high.

Move container from fire area if safety ensured.

If not, spray large amount of water to cool container to prevent from vapor/rupture.

Spraying water may also help gas/vapor disperse wider.

Extinguishing action

Extreme caution is needed if to do.

Wear thoroughly protective clothing and self-contained breathing apparatus.

Avoid inhalation of material and gas/vapor.

Damp material must be neutralized thoroughly before waste and also contaminated water must be neutralized.

7 Accidental Release Measures

In case of spill

Clean up immediately.

Wear gloves when touch spilled material.

Action to clean up

Wear appropriate protective clothing and equipment.

Keep unnecessary person away.

Do not use water to spilled material.

Scoop spilled material into clean, dry container and sweep spilled area thoroughly.

Extreme care to prevent from any contamination with combustible or organic material.

Do not return spilled material to original container.

Prevent material from get into sewers, waterways and rivers.

Caution to release

Do not damp spilled material.

Damp/wet material must be neutralized thoroughly before release.

8 Handling And Safety

Handling

Wear appropriate protective clothing and equipment.

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

Avoid breathing vapor, hume, dust of material.

Handle container with care not to damage.

Avoid generate mist and dust.

Ensure adequate ventilation.

Prevent from contact with inorganic bleaching powder, ammonia and ammonium salt.

Prevent from any contamination and contact with combustible or organic material.

Prevent from contact with fire, heat, acid, alkali, grease.

Wash thoroughly body and clothing after handling.

Storage

Store in tightly closed container in clean, dry, cool and well-ventilated area.

Do not allow water/humidity get into container.

Prevent from contact with ammonia.

Store away from fire, heat, acid, alkali, grease, oil, deoxides, incompatible material and combustible material

Isolate from Chlorinated isocyanuric acid.

Recommend to keep container on pallet, in dark place avoiding direct exposure to sunlight.

Keep temperature below 40 ℃.

9 Exposure Controls And Personal Protection

Specific control

Implement complete procedure of operation not to accumulate dust.

Control density: Japan Industry Hygienic Academic Society (1992 edition)
Not available

ACGIN (1991 - 1992 edition)
Not available

Ventilation

Ensure adequate ventilation.

Install local exhausting ventilator where mist or dust may generated.

Eye Protection

Wear appropriate goggles to prevent eyes from contact with material.

Install for emergency eye wash fountain and drench shower within the immediate work area.

Respiratory

Wear full face protective mask of dust-free or anti halogen-gas

Specific respirator may be used.

Protective tools

Gloves

Wear suitable gloves made of rubber

Clothing

Wear protective clothing to prevent skin contact.

10 Physical And Chemical Properties

Appearance	POWDER or GRANULAR
Color	White
Odor	Chlorine-like odor
Molecular weight	142.98 g/mol
Boiling point	None
Melting point	None
Decomposition temperature	Approx. 180℃ (by DTA)
Solubility in water	Approx. 20 g/100g (Water) (20℃)
Density	1.1
Bulk density	1.0
Specific gravity (H2O = 1)	2.1
pH	9.4 (100 ppm in water)
Corrosiveness	Almost same level as chlorine gas

11 Stability And Reactivity

Stability:

Stable if dry.

Hazardous thermal decomposition/combustion:

Hazardous when contact with organic materials, deoxides or acid to produce gases of oxygen or chlorine and ignite inflammable material.

Water:

Contact with water generate heat.

When wet, dissolve and/or explode with generated heat and/or may cause fire or generate hazardous gases.

Contamination:

Cause hazardous decomposition.

Keep away from fire, heat, acid, alkali, grease, oil, deoxides, incompatible material and combustible material.

Reactivity:

Ignition point	None
Decomposition temperature	Approx. 180℃ (by DTA)
Oxidation	

Corrosive under Rules & Regulations for Dangerous Articles Transportation by sea

12 Toxicological Information

Effects to human

Eyes

May cause severe irritation to mucous membranes, pain, burns and conjunctivis

Skin

May cause severe irritation, pain, dermatitis and burns

Inhalation

May cause severe irritation, choking and damage to respiratory tract, mucous membranes,

Harmfulness

Sensibility	: No data
Acute Virulence	
	: Rat, 790-1260 mg/Kg1), 2) orally
Variability	: (Ames test) Negative 2)

13 Ecological Information

Ecotoxicity: No Data.

14 Disposal Consideration

Dispose in accordance with all applicable regulations.

Caution to dispose

1. Do not dispose in trash or waste bin.

Do not dispose together with organic materials including chlorinated isocyanuric acid.

Do not dispose any leaked or waste of of the product without appropriate treatment.

or

Dispose after dissolving the product in large amount of water and

treat with deoxidizing chemicals such as Hypo (Sodium thiosulfate), Sodium sulfite, Sodium sulfide and Lime sulfur mixture and dilute with a large amount of water.

15 Transport Information

Caution to transport

1. Handle container with enough care not to damage container.
   Do not drop container or give shock/impact and avoid any damage onto container
   Keep container dry and do not get wet.
   Keep away from exhaust gas out of truck/car.
2. Keep container upright and properly tighten not to fall down.
   Make sure not to allow water/humidity get into container.
   Avoid direct exposure of sunlight.
3. Do not put together with chlorinated isocyanuric acid.
4. Do not put together with hazardous material controlled by Fire Defense Law.
   i.e. Group: Ⅱ,Ⅲ, Ⅳ, Ⅴ (Fire Defense Law of Japan)
5. Prevent any contact with water, acid, other chlorine material, reducing agents, oil&fat, grease and any other combustible material.

ID No	UN3487	
	Hazard Class	5.1
	Sub risk	8
	Marine pollutant	yes
	Packing group	Ⅱ

16 Regulatory Information

Available Laws and regulations

1. Fire Defense Law of Japan
   Hazards Group: Group Ⅰ : Calcium Hypochlorite, designated amount (50 kg)
2. Industrial Safety Health Act
   Dangerous: Oxidizing substances
3. Rules and Regulations for Dangerous Goods Transport by Ship and Storage
   Oxidizing substances
4. Port and Harbor Law of Japan
   Oxidizing substances
5. ICAO/IATA: Oxidizing substances
6. Japan Railways Freight Transport Regulation
   Dangerous goods
7. IMO/IMDG: Class 5.1, Packaging group Ⅱ

17 Additional Information

Important

These information is believed to be correct but it is provided without representation, guarantee or warranty, expressed or implied as to the accuracy or correctness, reliability or completeness of the information.

It does not assumed any responsibility for injury, damage or loss arising from the use of the material.

The information is intended for use of appropriate and safety precautions and handling.

In case of special handling, new directions and rules are necessary for safety protection.

Reference:

1) N. I. Sax, R. I. Lewis, Sr., Dangerous Properties of Industrial Materials, 7th ed., P. 197.1 (1989)

2) "Agricultural Chemicals Times" No 162, 54 edited by Japan Soda Co., Ltd. Agricultural Chemicals Development Department (2000)

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