TOSOH

SAFETY DATA SHEET
（ S D S ）

SDS No. A1096002000 EX

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1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND THE SUPPLIER

Product Name	Niclon-7000
Manufacturer	Tohoku Tosoh Chemical Co., LTD
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Recommended use and restrictions on use

General industrial products

2. HAZARD IDENTIFICATION

GHS classification

Explosives:	Not applicable
Flammable gases:	Not applicable
Aerosols:	Not applicable
Oxidizing gases:	Not applicable
Gases under pressure:	Not applicable
Flammable liquids:	Not applicable
Flammable solids:	Not classified
Self-reactive substances and mixtures:	Not applicable
Pyrophoric liquids:	Not applicable
Pyrophoric solids:	Not classified
Self-heating substances and mixtures:	Not classified
Substances and mixtures which, in contact with water, emit flammable gases:	Not classified
Oxidizing liquids:	Not applicable
Oxidizing solids:	Category 2
Organic peroxides:	Not applicable
Corrosive to metals:	Classification not possible

Acute toxicity

Oral:	Category 4
Dermal:	Not classified
Inhalation(Gases):	Not applicable
Inhalation(Vapours):	Not applicable
Inhalation(Dusts/Mists):	Classification not possible
Skin corrosion/Irritation:	Category 1
Serious eye damage/eye irritation:	Category 1

Sensitization	
Respiratory:	Classification not possible
Skin:	Classification not possible
Germ cell mutagenicity:	Classification not possible
Carcinogenicity:	Not classified
Reproductive toxicity:	Classification not possible
Specific target organ toxicity (Single exposure):	Category 2
Specific target organ toxicity (Repeated exposure):	Classification not possible
Aspiration hazard:	Classification not possible
Aquatic environment	
Acute hazard:	Category 1
Long-term hazard:	Classification not possible
Hazardous to the Ozone layer:	Classification not possible

GHS label elements

Danger

Hazard Statement:

May intensify fire; oxidizer

Harmful if swallowed

Causes serious skin burn/ eye damage

Causes serious eye damage

May cause damage to Causes damage to organs (stated in Section 11. Toxicological information, if known).

Very toxic to aquatic life

Precautionary statement:

≪Precautionary measures≫

Keep away from heet.

Take any precaution to avoid mixing with combustibles/other incompatible materials to be spcified.

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Wear protective gloves and eye protection/face shield.

Store away from flammable substances and other incompatible substances.

Use dust/mist filtering respirator not to inhale dust or fume.

≪Measures to be taken≫

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Wash contaminated clothing before reuse.

IF SWALLOED: Wash mouths, do not induce vomiting and get medical attention immediately.

IF IN EYES: Wash eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then, get medical

attention immediately.

During fire, use plenty of water for fire fighting.

≪Storage≫

Store away from combustibles/incompatible materials to be spcified.

Store locked up.

Store in a well-ventilated and cool place, protected from fire, heat and direct sunlight.

Do not give damage or strong shock to the packaging containers during transportation and storage.

≪Disposal≫

Consign dispose of the contents and container to the disposal-specialized services approved by a prefectural governor.

Do not throw away in garbage cans or at a dump.

Dissolve in water, dilute, process with reductants such as sodium thiosulfate and sodium sulfite, dilute with plenty of water, and dispose of the solution in accordance with the related laws and regulations.

Other hazards which do not result in GHS classification:

Applicable to Category 1 Hazardous Substance (Oxidizing Substances) of the Fire Services Act.

This product is decomposed by contact with heat, grease, oils, reducing substances, and other flammable substances, and causes fire or explosion. In addition, harmful and explosive gas is generated by mixing with chlorinated isocyanuric acid (organic chlorinated lime)

Important symptoms:

No information available

Summary of assumed emergency:

This product reacts by contact with organic substances, reducing substances, and flammable substances may cause ignition/ explosion.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Classification of the chemical substance or/mixture:

Mixture

Chemical name or common name:

calcium hypochlorite

Concentration or concentration range:

Chemical name or common name	Abbreviation	Concentration or concentration range	Reference number in Gazetted List in Japan		CAS No
			Japanese Chemical Substances Control Law (JCSCL)	Japanese Industrial Safety and Health Law	
calcium hypochlorite	－	Not less than70%（in available chlorine）	(1)-177	Existing chemical substances	7778-54-3
calcium hydroxide	－	1～5%	(1)-181	Existing chemical substances	1305-62-0
water	－	7～16%	Not applicable	Not applicable	7732-18-5

Chemical formula:

<calcium hypochlorite>

$Ca(ClO)_2$

<calcium hydroxide>

$Ca(OH)_2$

<water>

H_2O

Component subject to regulation:

Ingredient	Japanese Industrial Safety and Health Law	Japanese PRTR Law (Pollutant Release and Transfer Register)
calcium hypochlorite	Japanese Industrial Safety and Health Law (Article 57-1 of the Law) - Labeling, etc Number 200	Not applicable to the specified chemical substances of Japanese PRTR Law
calcium hydroxide	Japanese Industrial Safety and Health Law (Article 57-1 of the Law) - Labeling, etc Number 317	Not applicable to the specified chemical substances of Japanese PRTR Law
water	Not applicable to the substances for labelling/deliver of documents required in Japanese Industrial Safety and Health Law	Not applicable to the specified chemical substances of Japanese PRTR Law

PRTR Law shows the information for each chemical substances since April, 2010

Impurities and stabilizing additives which contribute to the classification of GHS:

No information available

4. FIRST-AID MEASURES

IF INHALED:

Remove a victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately.

IF ON SKIN:

Remove all contaminated clothing immediately, wash it with plenty of water and soap, and shower it. Then get medical attention.

Wash contaminated clothing before reuse.

IF IN EYES:

Wash eyes with plenty of water for at least 15 minutes immediately. Remove contact lenses, if present and easy to do. Continue rinsing. Then get medical attention immediately.

IF SWALLOWED:

Call a physician immediately. Rinse mouth.

Do not induce vomiting.

Most important effects and symptoms:

Causes severe eye damage attributed to alkaline.

Protection for first-aid responders:

Remove contaminated clothing and protective equipment. First-aid responders should wear gloves to avoid contacting hazards.

Note to physician:

No information available

5. FIRE-FIGHTING MEASURES

Extinguishing media:

Plenty of water

Unsuitable extinguishing media:

Dry chemical powder, foam

Specific hazards arising from the chemical if burning:

This product is decomposed rapidly by heating, and irritating, toxic, or corrosive gases may be generated.

This product has fire assist property and might intensify fire.

Specific fire fighting measures:

Without any risks such as exposure to heat, evacuate containers to a safe place. For irremovable containers, cool containers with water spray to prevent increase of container temperature. Cool them with enough water after fighting fire.

Special protective equipment for fire fighter:

During fire-fighting, wear heat resistance gloves, safety goggles, and breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

In case of indoors, conduct ventilation sufficiently until the disposal is completed.

Keep people away from around the leakage site by encircling it with a rope.

During working, wear protective equipment stated in “Section 8. Exposure controls and personal protection” so as to prevent adhering powder to the skin and inhalation of gas.

Environmental precautions:

Do not drain the leaked product into the rivers and the sewage directly.

Method of cleaning up:

Collect the leaked products as much as possible, and flush with plenty of water.

Dispose of the leaked products in accordance with ""Section 13. Disposal considerations.""

Prevention measures of secondary disaster:

Keep flammable substances (wood, paper, oil, etc,) from the leaked products.

7. HANDLING AND STORAGE

Handling

Appropriate engineering controls:

Take facility measures stated in “Section 8. Exposure controls and personal protection” and wear protective equipment.

Never handle the container roughly, such as tumbling, dropping, impacting, or dragging.

Use dry and clean containers/ equipments made of stainless, china, resin, or glass during handling.

Local and entire ventilation:

Conduct local or entire exhaust ventilation stated in “Section 8. Exposure controls and personal protection.”

General precautions:

Exercise caution especially during handling high concentration of aqueous solutions, since severity of skin/ eye irritation of the aqueous solutions increases with the concentration.

Do not contact with skin/ eyes, swallow, or inhale.

Safe handling advice:

Keep away from flammable substances and oxidizing substances (grease/ oils/reducing substances).

Avoid contact with nitrogen compounds such as ammonia and its salts or chlorinated

isocyanuric acid.

Use away from fire and hot surfaces.

Do not leave wet.

Do not drink, eat, or smoke during handling.

Wash hands thoroughly after handling.

Avoid contact:

Refer to Storage and handling「10. Stability and reactivity Information」.

Hygiene measures:

Wash hands thoroughly and gargle after working, and eat and drink.

Storage

Appropriate engineering controls:

Store locked up.

A storage place should be fire-proof structure, store in a dry indoor place, protected from direct sunlight, and install ventilation facility.

Store away from flammable substances and incompatible substances.

Safe storage conditions:

Avoid contact with grease, oils, reducing substances, flammable substances, oxidizing substances, ammonia and its salts, nitrogen compounds, and chlorinated isocyanuric acid.

Safe containers and packaging materials:

Dry container made of stainless, china, resin, or glass.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Facility measures

Install a ventilation system at a handling place.

Install eye-washing facility and shower.

Administrative levels

Not established

Occupational Exposure Limits

calcium hydroxide	5mg/m3	TWA	ACGIH

Personal protective equipment

Respiratory protection:

Dust/mist filtering respirator, air-supplied mask, air respirator, etc.

Hand protection

Rubber protective gloves

Eyes Protection:

Safety goggles

Skin and body protection:

Working clothing with long sleeves and long pants

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid (granular)
Color:	White－Whitish
Odor(Odor threshold):	Odor of chlorine
pH:	Alkaline when dissolved in water
Melting point/Freezing point:	Not Applicable

Boiling point:	Not Applicable
Initial boiling point:	Not Applicable
Boiling range:	Not Applicable
Flash point:	Not Applicable
Evaporation rate:	Not Applicable
Flammability (solid, gas):	Noncombustible
Lower flammability or explosive limits:	None
Upper flammability or explosive limits:	None
Vapor pressure:	No data.
Vapor density:	No data.
Specific gravity (Relative density):	2.35 （20℃）
Solubility:	21.4% （water、25℃）
Partition coefficient; n-octanol/water:	No data.
Auto-ignition temperature:	No data.
Decomposition temperature:	177℃
Viscosity:	Unknown
Other information:	No information available

10. STABILITY AND REACTIVITY

Reactivity:

This product is a not reactive under normal storage and handling.

Chemical stability:

Stable at ordinary storage and handling conditions

This product is decomposed by contact with heat and acids, and light, and chlorine gas is generated.

Possibility of hazardous reactions:

This product reacts with flammable substances and reducing substances violently and may cause ignition and explosion.

Conditions to avoid:

Avoid contact with direct sunlight, and high temperature body.

Incompatible materials:

Grease, oils, reducing substances, flammable substances, oxidizing substances, ammonia and its salts, nitrogen compounds, chlorinated isocyanuric acid, etc.

Hazardous decomposition products:

Chlorine and nitrogen compounds are formed by contact with acids, and especially explosive and toxic nitrogen trichloride is formed by contact with chlorinated isocyanuric acid.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

calcium hypochlorite	790mg/kg	Oral rat (LD50)	SIDS
calcium hypochlorite	>2000mg/kg	Dermal rabbit (LD50)	HSDB
calcium hydroxide	7340mg/kg	Oral rat (LD50)	HSDB

Product Harmful if swallowed.

Skin corrosion/Irritation:

Product	Causes serious skin burn/ eye damage.
calcium hypochlorite	It is indicated that this product may cause moderate to

	severe skin damage.
calcium hypochlorite	Severe skin irritation is indicated.
calcium hypochlorite	In the description, skin corrosion was observed in the test in rabbits.
calcium hydroxide	Causes serious skin burn/ eye damage.

Serious eye damage/eye irritation:

Product	Causes serious eye damage
calcium hypochlorite	This products is indicated to cause severe eye irritation by contact.
calcium hypochlorite	It is indicated that eye corrosion was observed in eye irritation test in animals.
calcium hydroxide	Causes serious eye damages

Respiratory sensitization or Skin sensitization:

Unknown

Germ cell mutagenicity:

Unknown

Carcinogenicity:

calcium hypochlorite	IARC: Group 3 (Cannot be classified as to its carcinogenicity to humans)

Reproductive toxicity:

Unknown

Specific target organ toxicity - Single exposure:

Product	May cause damage to organ (respiratory system).
calcium hypochlorite	May cause damage to an organ (respiratory system)
calcium hypochlorite	It is indicated that if inhaled, this product causes irritation to the lungs and may cause pulmonary edema.
calcium hydroxide	Causes damage to respiratory system

Specific target organ toxicity - Repeated exposure:

calcium hydroxide	May cause damage to lungs

Aspiration hazard:

Unknown

12. ECOLOGICAL INFORMATION

Ecotoxicity

Fish:

calcium hypochlorite	0.049-0.16mg/L(96h)	Bluegill (LC50)	IUCLID

Crustacea:

No information available

Algae:

No information available

Persistence/Degradability:

Product	This product is decomposed under the presence of light.

Bioaccumulative Potential:

Product	Although acute toxicity is strong, bioaccumulation is estimated low.

calcium hypochlorite	Although acute toxicity is strong, bioaccumulation is estimated low.

Mobility in soil:

No information available

Hazardous to the Ozone layer:

No information available

Other adverse effects:

Product	In order to prevent marine organisms and birds from taking it, it must not be disposed of or released to any ocean or water areas.
calcium hypochlorite	In order to prevent marine organisms and birds from taking it, it must not be disposed of or released to any ocean or water areas.

13. DISPOSAL CONSIDERATIONS

Residual wastes:

Do not throw away in general garbage cans.

In case of disposal, dissolve the product in water, dilute, process with reductants such as sodium thiosulfate and sodium sulfite, dilute with plenty of water, and dispose of the solution in accordance with the related laws and regulations.

Contaminated containers and packaging:

As for containers that have been used, remove the contents completely, and commit disposal to industrial waste disposal contractor that have received approval from the municipalities.

14. TRANSPORT INFORMATION

International regulations

UN number:	3487 CALCIUM HYPOCHLORITE, HYDRATED, CORROSIVE or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE,CORROSIVE with not less than 5.5% but not more than 16% water
UN classification:	Class 5.1 (Oxidizing Substances) Secondary Risk Class 8 (Corrosive Substances)
Packing group:	Ⅱ

Domestic regulations:

Refer to laws and regulation that are applied.

Special precautions:

No information available

Special precautions and conditions in transport:

At the time of transportation by vehicles, always have the driver carry yellow cards.

Protect from direct sunlight.

No exposure to water.

No lay down.

During cargo handling, handle cautiously and carefully, and avoid damages on container and scattering contents by fall or impulse. In particular, exercise caution not to roll containers, or plunge them with hand claws and claws of forklift, water leakage, or contact with vehicle exhaust gas.

Avoid contact with trichloroisocyanuric acid (organic chlorinated lime), reducing substances/flammable substances, and acids.

Avoid consolidation with hazardous substances Type 2, Type 3, Type 4, and Type 5 of the Fire

Services Act.

First-aid guide number:

140 (Oxidizing solid N.O.S.)

15. REGULATORY INFORMATION

<Product>

Japanese Road Traffic Law Enforcement Ordinance Article 19 Item 13 Restriction of Vehicle Traffic Japan Highway Public Corporation Notification Attached Table

Fire Services Act, Article 2, Paragraph 7 Hazardous Substance, Attached Table 1, Category 1 Type 1 Oxidizing Solids

<calcium hypochlorite>

Industrial Safety and Health Law, Labeling of Names, etc. stated in Article 57, Notifiable Substance stated in Article 57-2, Investigation of Toxicity stated in Article 57-3

Japanese Law on Industrial Safety and Hygiene Enforcement Ordinance Attached Table 1-3 Oxidizing substance

Japanese Air Navigation Law Enforcement Ordinance Article 194 Hazardous Material Notification Attached Table 1 Oxidizing Substance

Japanese Air Navigation Law Enforcement Ordinance Article 194 Hazardous Material Notification Attached Table 1 Corrosive Substance

Regulations for the Carriage and Storage of Dangerous Goods in Ship, Articles 2 and 3, Hazardous Substances, Attached Table 1 of Notification, Corrosive Substances

Japanese Port and Harbor Law Enforcement Regulation Article 12 Hazardous Material Notification Oxidizing substance class Oxidizing substance

Regulations for the Carriage and Storage of Dangerous Goods in Ship, Articles 2 and 3 Hazardous Substances, Attached Table 1 of Notification, Oxidizing Substances/ Oxidizing Substance

Law Relating to the Prevention of Marine Pollution and Maritime Disaster, Attached Table 1 of the Enforcement Ordinance, (Harmful to the same extent as X substance etc)

<calcium hydroxide>

Industrial Safety and Health Law, Labeling of Names, etc. stated in Article 57, Notifiable Substance stated in Article 57-2, Investigation of Toxicity stated in Article 57-3

Japanese Waste Disposal and Public Cleansing Law

Japanese Air Navigation Law Enforcement Ordinance Article 194 Hazardous Material Notification Attached Table 1 Corrosive Substance

Regulations for the Carriage and Storage of Dangerous Goods in Ship, Articles 2 and 3, Hazardous Substances, Attached Table 1 of Notification, Corrosive Substances

Water Pollution Control Law (Section of Hydrogen Ion Concentration)

16. OTHER INFORMATION

References

<calcium hypochlorite>

IUCLID

HSDB :Hazardous Substances Data Bank

Emergency Response Guidebook [Revised Version], Japan Chemical Industry Association (2003) (Original Article: Emergency Response Guidebook: A Guidebook For First Responders During The Initial Phase Of A Dangerous Goods/Hazardous Materials Incident, 2000)

ACGIH,TLVs and BEIs Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices (2014)

Journal of Occupational Health Vol.56 (2014)

Hommel (1991); Hommel Handbook of Dangerous Goods

Weiss (2nd、1986)；Weiss's Hazardous Chemicals Data Book

NFPA （12th,1997）；Fire Protection Guide to Hazardous Materilas, 13th Ed. (NFPA)

SIDS Initial Assessment Report

HSFS (2003)；Hazardous Substance Fact Sheet (New Jersey Department of Health and Senior Services)

IARC 52(1991)；IARC Monographs Programme on the Evaluation of Carcinogenic Risk to Humans

<calcium hydroxide>

ACGIH,TLVs and BEls Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices (2006)

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