

**TOSOH CORPORATION**

TOSOH

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**MATERIAL SAFETY DATA SHEET**

Niclon 6500,7000,65G and 70G

This Material Safety Data Sheet (MSDS) contains toxicology, industrial hygiene, and environmental information for your employees. Please make sure they are provided with this information. It also contains information to assist with meeting community right-to-know and emergency response reporting requirements under SARA Title III and other laws. If you resell this product, provide the buyer with this MSDS or incorporate this information into a new MSDS. Disregard any previous edition of this MSDS. This MSDS was prepared according to the MSDS Standard (ISO11014-1).

<b>SECTION 1: PRODUCT IDENTIFICATION</b>
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PRODUCT NAME : Niclon 6500, 7000, 65G and 70G  
CHEMICAL NAME : Calcium hypochlorite, calcium chloride, calcium hydroxide, and calcium carbonate with minimum 65% or 70% available chlorine

**MANUFACTURER:**

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Issue Date : 03-01-04

NDA= No Data Available      NA= Not Applicable

<b>SECTION 2: COMPOSITION AND INFORMATION ON INGREDIENTS</b>
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Name (CAS#)	W/W%	Exposure Limits	References
Calcium hypochlorite (7778-54-3)	74.6	None under OSHA, ACGIH or NIOSH	NA
Calcium hydroxide (1305-62-0)	1.5	5mg/m <sup>3</sup> TWA-TLV (5 mg/m <sup>3</sup> vacated TWA-PEL)	ACGIH 96 OSHA 1910.1000 Table Z-1-A
Calcium carbonate (471-34-1)	1.5	None under OSHA, ACGIH or NIOSH	NA
Calcium chloride (10043-52-4)	1.0	None under OSHA, ACGIH or NIOSH	NA
Water	9	NA	NA
The product is capable of generating a nuisance dust. <i>TD=total dust</i> <i>RF=respirable fraction</i>	NA	10 mg/m <sup>3</sup> [IP] TWA-TLV 3 mg/m <sup>3</sup> [RF] TWA-TLV 15 mg/m <sup>3</sup> [TD] TWA-PEL 5 mg/m <sup>3</sup> [RF] TWA-PEL	ACGIH 95-96 ACGIH 95-96 OSHA 89 OSHA 89

<b>SECTION 3: HAZARD IDENTIFICATION</b>
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### EMERGENCY OVERVIEW

**APPEARANCE AND ODOR:** White granules with chlorine-like odor

**STATEMENT OF HAZARD:** DANGER!

**ACUTE HAZARDS:**

- Causes severe irritation and possibly burns to eyes, skin and Mucous membranes
- Pulmonary edema
- Possible explosion hazard

**CHRONIC HAZARDS:**

- May cause eczmatoid dermatiti
- May cause bronchitits

NFPA RATING: Health - 2 Flammability - 0 Reactivity - 2 Special - NDA

HMS RATING: Health - 2 Flammability - 0 Reactivity - 2 Protective Equipment - X

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NFPA and HMIS ratings are based on criteria published by the National Fire Protection Association and the National Paint & Coatings Association respectively, and should only be interested by persons trained in these rating systems.

1996 North American Emergency Response Guidebook: 140

## **ROUTES OF ENTRY**

- Eye contact-causes severe eye irritation and probably burns
- Skin contact-causes moderate-severe skin irritation and probably burns
- Ingestion-causes severe irritation and probably burns to the mouth, throat, esophagus and gastrointestinal tract.
- Inhalation-causes severe irritation

## **POTENTIAL HEALTH EFFECTS**

The degree of injury will depend upon exposure dose and speed and thoroughness of first aid treatment

### **ACUTE EFFECTS**

Local Effects (eyes, skin, nose, throat, stomach, etc...)

- Causes severe eye, skin and mucous membrane irritation and probably burns
- Causes irritation to the respiratory system; at higher concentrations can cause pulmonary edema

Systemic Effects

- Abdominal pain, vomiting and diarrhea

### **SUB-CHRONIC EFFECTS**

- NDA

### **NON- CARCINOGENIC CHRONIC EFFECTS**

- May cause eczmatoid dermatitis
- May cause bronchitis

### **REPRODUCTIVE OR DEVELOPMENTAL EFFECTS**

- None of the components of this product are listed on the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) list of chemicals known to cause reproductive toxicity.

**CANCER**

- The components of this product are not listed as carcinogens or potential carcinogens by NTP, IARC or OSHA [see 29 CFR § 1910. 1200(g) (2) (vii)].
- None of the components of this product are listed on the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) list of chemicals known to cause cancer.

**TARGET ORGANS**

- All tissue of contact (severe irritation and probably burns)
- Respiratory system

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE**

- NDA

**SECTION 4 : FIRST AID****EYE CONTACT**

- Immediately flush with water
- Remove contact lenses and continue flushing for at least 20 minutes
- Seek medical attention immediately

**SKIN CONTACT**

- Remove contaminated clothing
- Hush affected area with water for at least 20 minutes
- Wash affected area with mild soap and water
- Seek medical attention if symptoms develop and persist

**INGESTION**

- Immediately rinse mouth out with plenty of water
- If within 30 minutes after ingestion, give person a small glass of milk or water to sip (NEVER give anything by mouth to an unconscious person)
- Do not induce vomiting
- Seek medical attention immediately

**INHALATION**

- Remove to fresh air
- Seek medical attention immediately if breathing becomes difficult
- Effects may be delayed; keep person under observation following exposure

**SECTION 5: FIRE FIGHTING MEASURES**

Flash point and Method : NA  
Flammable Limits : NA  
Ignition Temperature : NDA

Issue Date : 03-01-04

NDA= No Data Available      NA= Not Applicable

**GENERAL HAZARD**

- Keep away from heat, sparks and open flame
- Inhalation, ingestion or contact with this material may cause severe injury, burns or death
- This substance will accelerate burning when involved in a fire
- This substance may decompose explosively when heated or involved in a fire
- This substance may explode from heat or contamination
- Oxidizing material: contact with moisture, acids, organic matter, hydrocarbons (fuels) or combustible material may start a chemical reaction with generation of heat, release of hazardous gases, and possible flame or explosion

**EXTINGUISHING MEDIA**

- Do not use dry chemicals, CO2, Halon or foams
- Use extremely large quantities of water

**FIRE FIGHTING INSTRUCTIONS**

- Wear appropriate protective clothing
- Use self-contained breathing apparatus
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw and let the fire burn
- Cool containers with flooding quantities of water until well after the fire is out

**HAZARDOUS COMBUSTION PRODUCTS**

- Chlorine gas

**SENSITIVITY OF EXPLOSION BY MECHANICAL CONTACT**

- NDA

**SENSITIVITY OF EXPLOSION BY STATIC DISCHARGE**

- NDA

<b>SECTION 6: ACCIDENTAL RELEASE MEASURES</b>
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**GENERAL**

- Do not attempt to clean up chemical spills without appropriate personal protective equipment(see section 8)
- Inhalation, ingestion or contact with this material may cause severe injury, burns or death
- Keep combustibles away from spilled material
- Avoid contact with organic or oxidizable materials
- Ventilate closed spaces before entering
- Do not get water inside containers

- Traces of water may ignite or detonate this material; prevent contamination
- With clean shovel, place material into clean dry steel, plastic or glass containers and cover; remove containers from the spill area
- For small liquid spill, use a non-combustible material like vermiculite, sand or dry earth to soak up the product and place into a container for later disposal
- For large spill, dike far ahead of liquid for later disposal
- Following product recovery, rinse spill area with plenty of water
- Keep waste out of sewers, watersheds, and waterways
- See section 13 for information on the disposal of recovered material

#### REPORTABLE QUANTITY (RQ)

- Calcium hypochlorite (7778-54-3) 10 lbs (4.54 kgs)

### SECTION 7: HANDLING AND STORAGE

Storage Temperature : Ambient  
Storage Pressure : Atmospheric

#### GENERAL

- Use with adequate ventilation
- Dry storage is essential
- Store away from incompatible materials (see section 10)
- Store in cool, dry place out of direct sunlight
- Keep away from sources of heat and combustible substances
- Avoid shock and friction
- Use with proper personal protective equipment (see section 8)
- Keep containers tightly closed at all times
- Empty containers may retain hazardous properties, follow all MSDS/label warnings even after container is emptied
- Do not reuse empty container for food, clothing, or products for human or animal consumption
- Keep this and all chemicals out of reach of children

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### ENGINEERING CONTROLS

- Use local exhaust

**PERSONAL PROTECTION**

**RESPIRATOR**

- Use of a dust mask is required
- The use of a NIOSH/MSHA approved respirator with an acid gas filter and a dust mist prefilter may be necessary
- If ventilation is inadequate, the use of an approved air purifying respirator may be necessary
- Seek professional advice prior to respirator selection and use
- Follow OSHA respirator regulations (29 CFR S 1910. 134)
- If there is a potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection, use a positive pressure air supplied respirator

**EYE PROTECTION**

- Wear safety goggles or face shield
- Never wear contact lenses in the work area

**PROTECTIVE CLOTHING**

- Prevent skin contact by wearing chemically resistant gloves, apron, impervious clothing, and boots

**SAFETY EQUIPMENT**

- Eyewash fountain
- Safety shower

**GENERAL**

- Use good personal and industrial hygiene practices
- Wash thoroughly after using product
- Keep product off clothing and equipment
- Launder contaminated clothing before re-use
- Do not eat, drink, or smoke in any work area
- It is always good industrial hygiene practice to limit, to the extent feasible, skin and eye contact and inhalation of chemical products

<b>SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES</b>
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Physical State : Solid  
 Appearance : White granules  
 Odor : Irritating chlorine odor  
 Vapor Pressure : Negligible  
 Vapor Density (air = 1): Negligible  
 Evaporation Rate (n-butyl acetate = 1): NDA  
 Percent Volatile By Volume: NDA

Freezing Point : NDA  
 Melting Point : Decomposes  
 Boiling Point : Decomposes  
 Decomposition Temperature: 356° F (180° C)  
 Viscosity : NDA  
 Specific Gravity : 2.1 , Bulk Density :1.0 , Density : 1.1  
 Water Solubility : Soluble, pH: 9.4 (100 ppm water)

<b>SECTION 10: STABILITY AND REACTIVITY</b>
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**GENERAL**

- This product will not polymerize.

**INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID**

- Acetylene
- Acids
- Algaecides
- Amines
- Ammonium chloride
- Calcium carbide
- Carbon
- Carbon tetrachloride
- Glycerine
- Heat
- Hydrocarbons
- Hydroxy compounds
- Iron oxide
- Moisture
- N,N'-dichloromethylamine
- Nitrogenous bases
- Nitromethane
- Organic matter
- Organic sulfur compounds
- Reducing substances
- Sodium carbonate
- Sodium hydrogen sulfate
- Starch
- Sulfur
- Turpentine
- Urea
- Water
- Always test the compatibility of materials before storing them together



## HAZARDOUS DECOMPOSITION PRODUCTS

- Chlorine gas

**SECTION 11: TOXICOLOGICAL INFORMATION**

This section provides relevant information with regard to any toxicity studies performed on the product, or the "pure" form of the component(s). This information can be subject to misinterpretation. Therefore, it is essential that the following information be interpreted by individuals trained in its evaluation.

## PRODUCT BASED

- NDA

## INGREDIENT BASED

- Calcium hypochlorite (CAS# 7778-54-3) is moderately to severely irritating and can cause burns to all exposed body surfaces, including the eyes and the respiratory tract. Prolonged skin contact can cause eczematoid dermatitis. Inhalation of vapor is extremely irritating and toxic. Possible injuries include conjunctivitis, blepharitis gingivitis, contact dermatitis and tooth damage. Exposure to significant concentrations can cause pulmonary edema. Repeated or prolonged inhalation can cause bronchitis with cough and/or shortness of breath. Ingestion is expected to cause nausea, vomiting and diarrhea along with irritation to the mouth, throat, esophagus, stomach and gastrointestinal tract. Death can result from local injury, shock, toxemia, hemorrhage, wall perforation, and obstruction. The rat-oral LD<sub>50</sub> is 850 mg/kg. Calcium hypochlorite has been shown to cause mutations *in vitro* studies. IARC has determined that calcium hypochlorite is not classifiable as to its carcinogenicity based on inadequate data evidence in animal studies (IARC Group 3). There were no data located regarding potential reproductive or developmental effects following exposure to calcium hypochlorite.
- Calcium chloride (CAS# 10043-52-4) is moderately to severely irritating to all exposed body surfaces, including the eyes and the respiratory tract. Workers packing dry calcium chloride experienced irritation, erythema, peeling of facial skin, lacrimation, eye discharge, a burning sensation and pain in the nasal cavities, occasional nose bleeds, tickling in the throat, and perforation of the nasal septum in an occupational setting. Ingestion is expected to cause nausea, vomiting and diarrhea along with irritation to the mouth, throat, esophagus, stomach and gastrointestinal tract. The rat-oral LD<sub>50</sub> is 1 gm/kg. Calcium chloride has been shown to cause mutations in a limited number of *in vitro* studies. There were no data located regarding potential reproductive, developmental or carcinogenic effects following exposure to calcium chloride .

- Calcium hydroxide is a strong base and a moderately caustic irritant to all exposed body surfaces, including the eyes and the respiratory tract. Exposure by all routes causes moderate to severe irritation. Ingestion is expected to cause nausea, vomiting and diarrhea along with irritation to the mouth, throat, esophagus, stomach and gastrointestinal tract. The rat-oral LD<sub>50</sub> is 7340 mg/kg. Rats fed tap water containing 50 and 350 mg/L had reduced food intake with restlessness and aggression 2 months after exposure. At autopsy decreased erythrocytes and phagocytes and hemoglobin 3 months after exposure. At autopsy these animals had inflammation of the small intestine, dystrophic changes of the stomach, kidneys and liver. There were no data located regarding potential reproductive, developmental or carcinogenic effects following exposure.
- Calcium carbonate is an odorless, tasteless powder or crystal. In general there have been no adverse health effects reported in the literature among workers using calcium carbonate. Skin or eye contact with moderate amounts of calcium carbonate may result in irritation. Calcium carbonate had no effect when applied to the surface of rabbit eyes. Inhalation of large amounts may result in respiratory irritation. Calcium carbonate has not been associated with pneumoconiosis and inhalation of the dust has not been associated with adverse effects. Acute single ingestion of calcium carbonate may result in mild gastrointestinal distress. The rat-oral LD<sub>50</sub> for calcium carbonate is 6450 mg/kg. Chronic ingestion of large amounts (4-60 g/day for 2 to 30 days) may result in metabolic disturbances. Available data indicate that exposure to calcium carbonate is not expected to cause carcinogenic, reproductive, or developmental effects.

## SECTION 12 : ECOLOGICAL INFORMATION

- Calcium hypochlorite. dry granular: LC50. fish: *Lepomia macro*, 96H. 65 µg
- Calcium chloride. LC50 *Daphnia hyali*, 48H, 3000 mg/L
- Calcium hydroxide: death, fish, *Gambusia affinis*, 96H, 100 mg/L
- Calcium carbonate: death. fish. *Poecillia reticulata*, 96H, 200 mg/L

## SECTION 13 : DISPOSAL INFORMATION

### GENERAL

- Consult a local expert for advice on the disposal of this material
- Characteristics of recovered material may differ from those of original material
- Ensure that disposal is in compliance with local, state, and federal regulations

**SECTION 14 : TRANSPORT INFORMATION**

DOT PROPER SHIPPING NAME: Calcium hypochlorite hydrated mixture, not less than 5.5%  
 But not more than 16 % water, UN 2880, 5.1, PGII  
 RQ calcium hypochlorite 10 lbs (4.54 kg)

**SECTION 15 : REGULATORY INFORMATION**

**Chemical Inventories**

- All components of this product are included on the TSCA inventory list and DSL/NDSL

**Reportable Quantities (RQ)**

- Calcium hypochlorite (7778-54-3) 10 lbs (4.54 kgs)

**SARA TITLE 111 (Superfund Amendments and Reauthorization Act)**

**§302 Extremely Hazardous Materials**

- Not listed

**§304 Notification Of Accidental Release**

- Not listed

**§311/312 Hazard Categories**

- Immediate (Acute) Health Effects : YES
- Delayed (Chronic) Health Effects : YES
- Fire Hazard : YES
- Sudden Release of Pressure Hazard : NO
- Reactivity Hazard : YES

**§313 Toxic Chemical Release Reporting**

- Not listed

**SECTION 16: OTHER INFORMATION**

**ABBREVIATIONS**

ACGIH	: American Conference of Governmental Industrial Hygienists
CAS#	: Chemical Abstracts Service Number
DOT	: Department Of Transportation
DSL	: Domestic Substance List
EINECS	: European Inventory of Existing Chemical Substances
IARC	: International Agency for Research on Cancer
IATA	: International Air Transport Association
IDLH	: Immediately Dangerous to Life and Health
IMO	: International Maritime Organization
LEL	: Lower Explosion Limit
MSDS	: Material Safety Data Sheet
NDSL	: Non-Domestic Substance List
NIOSH	: National Institute for Occupational Safety and Health
NTP	: National Toxicology Program
OSHA	: Occupational Safety and Health Administration
PEL	: Permissible Exposure Limit
RTECS	: Registry of Toxic Effects of Chemical Substances
STEL	: Short Term Exposure Limit
TSCA	: Toxic Substances Control Act
TWA	: Time-Weighted Average
ULE	: Upper Explosion Limit

**REVISION SUMMARY**

ISSUE DATE : 03-01-04  
 SUPERSEDES : NA

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