



## Material Safety Date Sheet

### 1 Identification of substance:

#### Product details:

Trade name :C serials getter

Documents number:JS-CA-000017

Chemical Name: Calcium oxide

Chemical Formula: CaO

#### Manufacturer/supplier:

NANJING HUADONG ELECTRONICS VACUUM MATERIAL COMPANY LIMITED

No.1 Jiulongshan road, Nanjing, PRC

### 2 Composition/information on ingredients

#### Composition

Name	CAS #	% by Weight
Calcium oxide	1305-78-8	100

**Toxicological Data on Ingredients:** Calcium oxide LD50: Not available. LC50: Not available.

### 3 Hazards identification

#### Potential Acute Health Effects:

Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive). The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe overexposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

#### Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

### 4 First aid measures

#### Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention immediately.

#### Skin Contact:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

#### Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

#### Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing



is difficult, give oxygen. Get medical attention.

**Serious Inhalation:**

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

**Ingestion:**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:** Not available.

## 5 Fire fighting measures

**Flammability of the Product:** Non-flammable.

**Auto-Ignition Temperature:** Not applicable.

**Flash Points:** Not applicable.

**Flammable Limits:** Not applicable.

**Products of Combustion:** Not available.

**Fire Hazards in Presence of Various Substances:** Not applicable.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:** Not applicable.

**Special Remarks on Fire Hazards:** Chlorine Trifluoride reacts violently with calcium oxide producing flame.

**Special Remarks on Explosion Hazards:** Not available.

## 6 Accidental release measures

**Small Spill:**

Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary:

Neutralize the residue with a dilute solution of acetic acid.

**Large Spill:**

Corrosive solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

Neutralize the residue with a dilute solution of acetic acid. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

## 7 Handling and storage

**Precautions:**

Keep container dry. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes. Keep away from incompatibles such as organic materials, acids, moisture.

**Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24° C (75.2° F).

## 8 Exposure controls and personal protection

**Engineering Controls:**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.



## Personal Protection:

Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent Gloves.

## Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

## Exposure Limits:

TWA: 2 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States] TWA: 2 (mg/m<sup>3</sup>) [Canada] TWA: 5 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] Consult local authorities for acceptable exposure limits.

## 9 Physical and chemical properties:

**Physical state and appearance:** Powder

**Odor:** Odorless.

**Taste:** Not available.

**Molecular Weight:** 56.08 g/mole

**Color:** White.

**pH (1% soln/water):** 10 [Basic.]

**Boiling Point:** 2850° C (5162° F)

**Melting Point:** 2572° C (4661.6° F)

**Critical Temperature:** Not available.

**Specific Gravity:** 3.33 (Water = 1)

**Vapor Pressure:** Not applicable.

**Vapor Density:** Not available.

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** Not available.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** Not available.

### Solubility:

Soluble in acids, glycerol, sugar solution. Practically insoluble in alcohol. Very slightly soluble in cold water, hot water. Insoluble in methanol, diethyl ether, n-octanol.

## 10 Stability and reactivity

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Incompatible materials

**Incompatibility with various substances:** Reactive with organic materials, acids, moisture.

**Corrosivity:** Not available.

### Special Remarks on Reactivity:

Absorbs CO<sub>2</sub> from air. Reacts with fluorine to evolve much heat and some light. Reacts with water. Addition of water to Quicklime has generated temperatures as high as 800 C. Some reports describe the reaction as violent. In water, calcium oxide forms calcium hydroxide generating a large quantity of heat. Ignition of sulfur, gunpowder, wood, and straw by heat of Quicklime-water reaction has been reported. Liquid hydrofluoric acid and calcium oxide react very violently. Calcium reacts with phosphorous pentoxide extremely violently when initiated by local heating. Lime becomes incandescent when heated to near its melting point (2500 C).

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

## 11 Toxicological information

**Routes of Entry:** Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

**Toxicity to Animals:**

LD50: Not available. LC50: Not available.

**Chronic Effects on Humans:** Not available.

**Other Toxic Effects on Humans:**

Very hazardous in case of skin contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive, permeator), of eye contact (corrosive).

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:** Not available.

**Special Remarks on other Toxic Effects on Humans:**

Acute Potential Health Effects: Skin: Causes skin irritation and burns. Eyes: Causes eye irritation and burns. Inhalation: Material is irritating to respiratory tract and mucous membranes and upper respiratory tract. Ingestion: May be harmful if swallowed. Irritates gastrointestinal tract with possible burns. Swallowing may become painful, and difficult. A burning pain extends down the esophagus to the stomach. May affect respiration. Vomitous is thick and slimy due to mucous. Later is may contain blood shred of mucous membrane due to necrosis.

## 12 Ecological information:

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The product itself and its products of degradation are not toxic.

**Special Remarks on the Products of Biodegradation:** Not available.

## 13 Disposal considerations

**Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

## 14 Transport information

**DOT Classification:** Class 8: Corrosive material

**Identification:** : Calcium Oxide UNNA: 1910 PG: III

**Special Provisions for Transport:** Not available.

## 15 Regulatory information

**Federal and State Regulations:**

Connecticut hazardous material survey.: Calcium oxide Illinois toxic substances disclosure to employee act: Calcium oxide Rhode Island RTK hazardous substances: Calcium oxide Pennsylvania RTK: Calcium oxide Minnesota: Calcium oxide Massachusetts RTK: Calcium oxide California Director's List of Hazardous Substances: Calcium oxide TSCA 8(b) inventory: Calcium oxide TSCA 8(a) chemical risk rules: Calcium oxide

**Other Regulations:**

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

**Other Classifications:**

**WHMIS (Canada):** CLASS E: Corrosive solid.

**DSCL (EEC):**

R38- Irritating to skin. R41- Risk of serious damage to eyes. S2- Keep out of the reach of children. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S39- Wear eye/face protection. S46- If swallowed, seek medical advice immediately and show this



container or label.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 2

Personal Protection: j

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 2

Specific hazard:

Protective Equipment:

Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

## 16 Other information:

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if we have been advised of the possibility of such damages.*