

# MATERIAL SAFETY DATA SHEET



Date Issued: 08/19/2010  
MSDS No: 2010.199

## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT CODE:** C3555  
**PRODUCT FORMULATION NAME:** 3-Cyanopropyltrichlorosilane  
**MOLECULAR FORMULA:** C<sub>4</sub>H<sub>6</sub>Cl<sub>3</sub>NSi

### MANUFACTURER

UCT Specialties, Inc.  
2731 Bartram Road  
Bristol, PA 19007

**Emergency Contact:** Jon Telepchak  
**E-Mail:** jtelepchak@unitedchem.com  
**Product Stewardship:** 215-781-9255  
ex141  
**Service Number:** 717-247-0896

### 24 HR. EMERGENCY TELEPHONE NUMBERS

**CANUTEC (Canadian Transportation) :**(613) 996 - 6666  
**CHEMTREC (US Transportation) :**(800) 424 - 9300

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

**PHYSICAL APPEARANCE:** Clear liquid

**IMMEDIATE CONCERNS:** Material may form a siloxane polymer on the skin, eyes or in the lungs. In the event of direct contact of the liquid with these tissues, seek medical attention.

### POTENTIAL HEALTH EFFECTS

**EYES:** \*Conjunctivitis, corneal damage. Causes severe chemical burns.

**SKIN:** \* Causes severe chemical burns. Corrosive- causes tissue destruction

**INGESTION:** \* Causes severe chemical burns. Corrosive- cause tissue destruction.

**INHALATION:** \*Causes severe chemical burns. Corrosive- causes tissue destruction

### SIGNS AND SYMPTOMS OF OVEREXPOSURE

**ACUTE TOXICITY:** Liquid and vapors react with moisture on the skin, eyes and mucous membranes to release hydrogen chloride (corrosive)

Prolonged or repeated exposure and/or high concentrations of vapors will produce chemical burns and destruction of affected tissues. Respirable vapors or mist are irritating to the upper respiratory tract and bronchi. Inhalation may be fatal as a result of spasm, inflammation and edema of the lungs or larynx. Prolonged or widespread contact may result in the absorption of potentially harmful amount of material. If ingested, this material may cause severe burns of the mouth, pharynx, esophagus and stomach

Contact of the skin, eyes and mucous membranes with Diemthylamine may lead to severe inflammation, blistering, epidermal necrosis, and possible ulceration of exposed tissue.

Symptoms of exposure may be a burning sensation, coughing, wheezing, laryngitis, shortness of

breath, headache, nausea and vomiting possibly leading to loss of consciousness and death.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS
3-Cyanopropyltrichlorosilane	1071-22-3

### 4. FIRST AID MEASURES

**EYES:** Flush with clean water for at least 15 minutes and consult physician

!!!!Get Medical Attention Immediately!!!!

**SKIN:** Remove contaminated clothing and shoes. Wipe off excess chemical VERY GENTLY and WITHOUT DELAY and wash affected area under the shower with mild soap.

**INGESTION:** GET MEDICAL ATTENTION, Give one full cup or milk or water to dilute ingested material. If possible, give victim a full glass of (a) Milk and Libitum or (b) milk of magnesia or other antacid preparation, or (c) emollients such as table oil or fresh eggs..

**INHALATION:** Remove victim to fresh air, give CPR or oxygen if necessary

**NOTES TO PHYSICIAN:** **EYES:** If pain persists, repeat washing the eye for 15 minutes or until the pain is relieved or until the pH of the eye returns to normal as tested with litmus paper. If great pain persists, place one (1) drop Benoxinate solution (0.4%) in the affected eye(s).

**SKIN:** Dust affected area with powdered Sodium Bicarbonate, wash affected area again under the shower with mild soap, rinse with tepid water, and dry the skin gently with a clean dry towel.

**ADDITIONAL INFORMATION:** **INHALATION:** To relieve coughing, have victim inhale from a gauze pad soaked with a few drops of Ethyl alcohol or Diethyl ether and administer positive pressure oxygen.

**COMMENTS:** If symptoms persist, get medical attention

Never give anything by mouth to an unconscious person

### 5. FIRE FIGHTING MEASURES

**FLASH POINT AND METHOD:** 72°C (162°F) (Closed cup)

**GENERAL HAZARD:** CAUTION: After fire has been extinguished with non-aqueous media, it may be easily reignited. make sure re-ignition does not occur

**EXTINGUISHING MEDIA:** Alcohol Foam, dry chemical, CO<sub>2</sub>.

**FIRE FIGHTING EQUIPMENT:** Fire Fighters must wear positive- pressured, self-contained breathing apparatus and full protective clothing.

**COMMENTS:** WARNING: Use only dry media to extinguish flames. Water spray or fog should only be used to knock down Hydrogen Chloride vapors.

### 6. ACCIDENTAL RELEASE MEASURES

**SMALL SPILL:** Evacuate the spill area of all non-essential personnel, ventilate the spill area, cover liquid completely (smother) with dry Sodium Bicarbonate and blanket spill area with inert gas. Place absorbed material in a dry, lined waste container before transporting it for disposal. Keep all sources of ignition away from the spilled area until clean-up is complete.

**LARGE SPILL:** Evacuate spill area of all non-essential personnel, ventilate the spill area and cover liquid completely with non-reactive high expansion foam. use water mist to knock down any Hydrogen Chloride vapors that might be generated by directing the spray into the fume cloud as it travels away from the spill

**GENERAL PROCEDURES:** Absorb spilled material with suitable chemical binder. Shovel absorbent into

suitable waste container. Neutralize washing with soap ash or lime. Do not contaminate soil, groundwater or surface water.

**SPECIAL PROTECTIVE EQUIPMENT:** Wear appropriate personal protective equipment as specified in section 8.

**COMMENTS:** CAUTION: NEVER direct the hose stream onto an unignited spill

## 7. HANDLING AND STORAGE

**HANDLING:** Container requires grounding during use.

**STORAGE:** Store in a cool and dry place. Maintain nitrogen blanket and tightly closed container. Protect from moisture. Protect from heat, direct sunlight and source of ignition. Store away from alkaline, acidic and oxidizing materials. Provide adequate ventilation.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Local exhaust ventilation may be necessary to control any fume levels during the use of this product.

### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** Use chemical goggles and face shield.

**SKIN:** Use impervious gloves. Use impervious clothing as necessary to protect against skin contact

**RESPIRATORY:** Local Exhaust required. Explosion- proof mechanical ventilation required.

If exposure exceeds TVL, use appropriate NIOSH approved respiratory

**WORK HYGIENIC PRACTICES:** General industrial hygiene practice.

**COMMENTS:** To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29 CFR 1910.132) be conducted before using this product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** Liquid

**ODOR:** Sharp, hydrochloric acid- like odor

**COLOR:** Clear

**PERCENT VOLATILE:** <50%

**VAPOR DENSITY:** > 1

**BOILING POINT:** 93°C /8mm

**FLASH POINT AND METHOD:** 72°C (162°F) (Closed cup)

**SOLUBILITY IN WATER:** Reacts

**SPECIFIC GRAVITY:** 1.280

## 10. STABILITY AND REACTIVITY

**STABILITY:** (UNDER NORMAL CONDITIONS): Stable under ordinary conditions of use and storage.

**POLYMERIZATION:** Hazardous polymerization may occur

**CONDITIONS TO AVOID:** Contact with water and alcohols; Generates Hydrogen Chloride; TVL=C5ppm; Contact with air, heat, sparks or other sources of ignition, Contact with air

**POSSIBILITY OF HAZARDOUS REACTIONS:** Avoid contact with Lewis acids such as Iron Trichloride or Aluminum Trichloride unless under carefully controlled reaction conditions and allow for the generation of gaseous products

**INCOMPATIBLE MATERIALS:** Oxidizing agents, alkali, acids, Lewis Acids, and primary amines or ammonia

**COMMENTS:** DANGER: Polymerization is accompanied by generation of large volumes of Hydrogen

Chloride gas (corrosive) that may result in a violent release of pressure and heat if reaction occurs in a confined space

## 11. TOXICOLOGICAL INFORMATION

### ACUTE

**NOTES:** Organic material containing the Cyano- group can be partially metabolized to yield Cyanide in vivo. Long term exposure to the material may possibly lead to cardiovascular and/or nervous system effects

### CARCINOGENICITY

**IARC:** No

**NTP:** No

**OSHA:** No

**COMMENTS:** No information available

Material generates Hydrogen Chloride on contact with water and alcohols.

Hydrochloric Acid (aqueou): Toxicity Data: ihl-hmn LCLo: 1300ppm/ 30 minutes; unk-man LDLo: 81 mg/kg; ihl-rat LC50: 3124ppm / 1 hour; ihl-mus LC50: 1180ppm/ 1 hour; ihl-man LCLo: 1000 mg/m3/ 2 hour; orl -rbt LD50: 900 mg/kg.

Hydrgoen Chloride (gas): Toxicity Data: ihl-rat LC50: 5660ppm / 30 minutes; ihl- mus LC50: 2142ppm/ 30 minutes

## 12. ECOLOGICAL INFORMATION

**COMMENTS:** No information available

## 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Incineration is recommended . Treat or dispose of waste material in accordance with all local, state/provincial and national requirements.

**EMPTY CONTAINER:** Containers of this material may be hazardous when empty since they retain product residues(liquid); observe all warnings and precautions listed for this product.

## 14. TRANSPORT INFORMATION

### DOT (DEPARTMENT OF TRANSPORTATION)

**PROPER SHIPPING NAME:** Chlorosilanes, N.O.S.

**TECHNICAL NAME:** (3-Cyanopropyltrichlorosilane)

**PRIMARY HAZARD CLASS/DIVISION:** 8

**UN/NA NUMBER:** 2987

**PACKING GROUP:** II

**NAERG:** 60

**LABEL:** Corrosive

## 15. REGULATORY INFORMATION

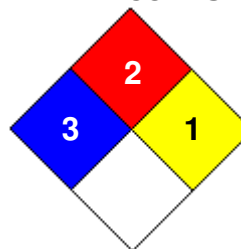
### UNITED STATES

**DOT LABEL SYMBOL AND HAZARD CLASSIFICATION**

Corrosive

**TSCA (TOXIC SUBSTANCE CONTROL ACT)****TSCA STATUS:** This product is listed on the TSCA Inventory.**16. OTHER INFORMATION****APPROVED BY:** Office of Environmental Health Safety & Security      **TITLE:** Dir. of Env. Health Safety & Security**PREPARED BY:** jnm**INFORMATION CONTACT:** jtelepchak@unitedchem.com**REVISION SUMMARY:** New MSDS**HMIS RATING**

<b>HEALTH:</b>	<b>3</b>
<b>FLAMMABILITY:</b>	<b>2</b>
<b>PHYSICAL HAZARD:</b>	<b>1</b>
<b>PERSONAL PROTECTION:</b>	

**NFPA CODES****MANUFACTURER SUPPLEMENTAL NOTES:** All technical data is believed to be correct but does not purport to be all inclusive and shall be used only as a guide.**MANUFACTURER DISCLAIMER:** The data in this Material Safety Data Sheet relates only to the specific material designated herein.

It does not relate to use in combination with any other material or in any process.

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