

# MATERIAL SAFETY DATA SHEET

## A-1100 DLC<sup>®</sup>

Date Revised: September 21, 2011

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### SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: A-1100 DLC  
CHEMICAL NAME: gamma-Amino-propyl-triethoxysilane on Calcium Silicate

HMIS RATING	
Health	3
Flammability	1
Reactivity	2

Company:  NATROCHEM, INC.  
P.O. Box 1205  
Savannah, GA 31402-1205

Telephone Numbers:

Transportation Emergencies:

CHEMTREC (U.S.A.): (800) 424-9300 (24 hours)

CHEMTREC (International): (202) 483-7616 (24 hours, call collect)

Product Information: (912) 236-4464 (EST, 8:00 a.m. – 4:00 p.m. M-F)

### SECTION 2 - COMPONENTS

INGREDIENT	CAS REGISTRY	PERCENT
Gamma-Amino-propyl-triethoxysilane	919-30-2	~71
Calcium Silicate	1344-95-2	~29
Ethanol*	64-17-5	<0.5

\*Additional Ethanol may be formed by reaction with moisture.

### SECTION 3 - PHYSICAL DATA

Boiling Point: 220°C

Vapor Pressure (mm Hg) : <1

Vapor Density (Air = 1) : >1

Solubility in Water: Reacts rapidly

Appearance: Off-white, free flowing powder

Specific Gravity: 1.242

Percent Volatiles: N/DA

Evaporation Rate: <1

Odor: amine

### SECTION 4 - FIRE & EXPLOSION DATA

FLASH POINT (Method Used): 205°F (PMCC)

FLAMMABLE LIMITS: N/D

AUTOIGNITION TEMPERATURE: N/D

EXTINGUISHING MEDIA: This material is reactive with water, but the reaction will not significantly increase fire severity. Apply alcohol-type or all-purpose-type foam by manufacturer's recommended techniques for large fires. Use carbon dioxide or dry chemical for small fires.

SPECIAL FIRE FIGHTING PROCEDURES: Use self-contained breathing apparatus and body-covering protective clothing.

UNUSUAL FIRE & EXPLOSION HAZARDS: None.

### SECTION 5 - PERMISSIBLE EXPOSURE LIMITS

Calcium Silicate: 5 mg/m<sup>3</sup> respirable nuisance dust, OSHA. 10 mg/m<sup>3</sup> total nuisance dust, ACGIH.

Ethanol: 1000 ppm TWA, OSHA and ACGIH

## SECTION 6 - HEALTH HAZARD DATA

**EFFECTS OF REPEATED OVEREXPOSURE:** Prolonged or repeated exposure to excessive concentrations of this product dust or any nuisance dust can cause chronic pulmonary disease. Repeated contact with skin may cause a severe cumulative dermatitis. Long-term repeated oral exposure to ethanol may result in the development of progressive liver injury with fibrosis. Repeated exposure to aerosols from undiluted or aqueous material may result in irritation and injury of the respiratory tract.

Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of affects which together constitute the fetal alcohol syndrome. These include mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioral disorders, and small size head.

**PRIMARY ROUTE OF ENTRY-** Inhalation, eye, skin, ingestion, dust contact with eyes.

**CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN:** None

NTP: No                      IARC: No                      OSHA: No

**EFFECTS OF EXPOSURE-**

**EYES-** Causes severe irritation, experienced as discomfort or pain, excess blinking and tear production, marked excess redness and swelling of the conjunctiva, and chemical burns of the cornea. Corneal injury may be severe, extensive, and, if not treated properly, could result in permanent impairment of vision.

**SKIN-** Prolonged or widespread contact may result in the absorption of potentially harmful amounts of material. Kidney damage may occur. Brief contact may cause slight irritation with itching, local redness, and possibly swelling. Prolonged contact causes chemical burns with local discomfort or pain, severe excess redness and swelling, tissue destruction, fissures, ulceration, and possibly bleeding into the inflamed area. Effects may cause scar formation.

**INHALATION-** Irritation and soreness in throat & nose. In extreme exposures, some congestion may occur. May cause transitory upper respiratory irritation. High vapor concentrations may cause a burning sensation in the throat and nose, stinging and watering in the eyes. At concentrations which cause irritation, dizziness, faintness, drowsiness, nausea, and vomiting may also occur. Inhalation of aerosols may cause irritant effects including nasal discomfort and discharge, cough, production of sputum, discomfort in the chest, and possibly difficulty with breathing.

**INGESTION- TOXIC.** Causes irritation or chemical burns of the mouth, throat, esophagus, and stomach. There may be discomfort or pain in the mouth, throat, chest and abdomen, with difficulty in swallowing, nausea, vomiting, diarrhea, weakness, thirst, dizziness, faintness, drowsiness, headache, decreased awareness and responsiveness, euphoria, staggering gait, lack of coordination, shortness of breath, loss of consciousness, and death.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE-** Preexisting upper respiratory and lung disease such as, but not limited to bronchitis, emphysema and asthma. Skin contact may aggravate an existing dermatitis. May aggravate an existing liver or kidney disease. Exposure to aerosol may aggravate asthma and inflammatory or fibrotic pulmonary disease.

**SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:**  
Not genotoxic in various in vitro or in vivo studies. No evidence for systemic toxicity by short-term recurrent (9-day) application to the skin of rabbits up to 84.0 mg/kg/day (6 hr/day, occlusive), although a cumulative local irritation occurs. Recurrent exposure of rats to an aerosol of a hydrolysate of this material (150 mg/m<sup>3</sup>) produced inflammatory and irritant effects in the nasal, laryngeal and tracheal mucosae, and inflammatory reactions in the lungs.

The following information is based on ethanol: The International Agency for Research on Cancer (IARC) has determined that the consumption of alcoholic beverages is causally related to the occurrence of malignant tumors in the oral cavity, pharynx, larynx, esophagus and liver in humans. The carcinogenic response attributed to drinking alcoholic beverages has not been verified in studies with laboratory animals. Established uses of denatured ethanol and non-beverage uses of pure ethanol are not considered to pose any significant cancer hazard.

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#### SECTION 7 - EMERGENCY & FIRST AID PROCEDURES

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**EYE CONTACT:** Immediately rinse with clean water for 15 minutes. Retract eyelids often. Obtain medical attention without delay, preferably from an ophthalmologist.

**SKIN CONTACT:** Immediately remove contaminated clothing. Wash skin thoroughly with mild soap and water. Flush with lukewarm water for 15 minutes. Seek medical attention if ill effect or irritation develops.

**INHALATION:** If overcome by exposure, remove victim to fresh air. Call a physician immediately.

**INGESTION:** If patient is fully conscious, give two glasses of milk or water at once. **DO NOT INDUCE VOMITING.** Obtain medical attention without delay.

**NOTES TO PHYSICIAN:** Causes chemical burns of the skin. Causes chemical burns of the eyes. Moderately toxic by swallowing. May cause acute kidney injury (renal cortical tubular necrosis) by massive peroral overdose or sustained skin contact.

Due to the severely irritating or corrosive nature of the material, swallowing may lead to ulceration and inflammation of the upper alimentary tract with hemorrhage and fluid loss. Also, perforation of the esophagus or stomach may occur, leading to mediastinitis or peritonitis and the resultant complications. The stomach should be evacuated carefully in case of ingestion.

This material reacts immediately with water in the acid contents of the stomach to produce ethanol. Although ethanol production may occur, and there is a potential for nephrotoxicity, because of its intensely irritating effects, it is unlikely that large volumes of this material will be acutely ingested. Therefore, the irritant and aspiration hazards from regurgitation are more serious causes for concern. In view of this, it is recommended that emesis not be induced in the conscious patient, mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be undertaken with caution in order to avoid perforation of inflamed or ulcerated areas of the upper alimentary tract, or to avoid aspiration (e.g. gastric lavage in the presence of endotracheal intubation).

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**SECTION 8 - REACTIVITY DATA**

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STABILITY: Stable

MATERIALS TO AVOID- Hydrofluoric Acid, Water. Reaction with water or other aqueous media is rapid and exothermic. The addition of small amounts of water (in the range of 2-15%) can produce an exothermic reaction which generates alcohol, to the extent that the resulting solution can reach a temperature which exceeds the flash point of the new solution. If a water solution is desired, add the product to the water, and not vice versa.

CONDITIONS TO AVOID- Avoid high temperatures (>800°C) treatment. Moisture.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon, nitrogen and silicon.

HAZARDOUS POLYMERIZATION: Will not occur.

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**SECTION 9 - SPILL OR LEAK PROCEDURES**

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: MINIMIZE SPILL AREA. Vacuum spill material and place in closed plastic bags for disposal. Wear suitable protective clothing.

WASTE DISPOSAL METHOD: In a furnace in accordance with local, state, and federal regulations.

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**SECTION 10 - SPECIAL PROTECTION INFORMATION**

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RESPIRATORY PROTECTION: Use a respirator such as 3M 9900 or equivalent for protection against pneumoconiosis producing dusts.

VENTILATION: Provide explosion proof ventilation as required to control airborne dust levels. The sum total of all ingredients may emit vapors during normal processing. All possible health effects are not known and individual sensitivities will vary. Effective exhaust ventilation should always be provided to draw dust, fumes and vapors away from workers to prevent routine inhalation. Ventilation should be adequate to maintain ambient workplace atmosphere below the limits listed in Section V.

PROTECTIVE GLOVES: Impervious gloves to protect against contact with product.

EYE PROTECTION: Safety goggles.

OTHER PROTECTIVE EQUIPMENT: Protective clothing, eye wash station, safety shower.

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**SECTION 11 - SPECIAL PRECAUTIONS**

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HANDLING AND STORAGE: Handling can create explosive dust clouds. Eliminate ignition sources, use explosive proof equipment. Conveying and processing equipment should be spark-proof, well bonded and grounded. Avoid dust accumulations. Do not swallow. Do not get in eyes, on skin, on clothing. Avoid breathing mist or vapor. Keep container closed. Use with adequate ventilation.

OTHER PRECAUTIONS: Wash with soap and water before eating, drinking, smoking, or using toilet facilities. Launder contaminated clothing before reuse.

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**SECTION 12 - ENVIRONMENTAL INFORMATION**

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This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372):

CAS REGISTRY #	CHEMICAL NAME	PERCENT BY WEIGHT
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NONE.

This information must be included in all MSDSs that are copied and distributed for this material.

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THE FOLLOWING INFORMATION MAY BE USEFUL IN COMPLYING WITH VARIOUS STATE AND FEDERAL LAWS AND REGULATIONS UNDER VARIOUS ENVIRONMENTAL STATUES:

Reportable Quantity (RQ), EPA Regulation 40 CFR 302 (CERCLA Section 102):

No RQ for product or any constituent greater than 1% or 0.1% (carcinogen).

Threshold Planning Quantity (TPQ), EPA Regulation 40 CFR 355 (SARA Sections 301-313):

No TPQ for product or any constituent greater than 1% or 0.1% (carcinogen).

Hazardous Chemical Reporting, EPA Regulation 40 CFR 370 (SARA Sections 311-312):

Calcium Silicate- Acute Hazard

Ethanol- Immediate health hazard, Delayed health hazard, Reactive hazard.

The components of this product are included on the TSCA Chemical Substance Inventory.

TRANSPORTATION: Not regulated.

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**SECTION 13 - OTHER INFORMATION**

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Revision Note: Reviewed. Prepared by: Craig Moore

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N/A = Not applicable N/D = Not determined N/DA = No Data Available N/E = Not established

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