

MATERIAL SAFETY DATA SHEET
A174 DLC[®]

Date Revised: September 26, 2011

Page 1 of 6

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: A174 DLC

CHEMICAL NAME: gamma-Methacryloxypropyltrimethoxysilane on Calcium Silicate

Company:



NATROCHEM, INC.
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, 8:00AM – 4:00PM M-F)

SECTION 2 – COMPOSITION / INGREDIENTS

INGREDIENT	CAS REGISTRY	
Gamma-Methacryloxypropyltrimethoxysilane	2530-85-0	~71%
Calcium Silicate	1344-95-2	~28%
Methanol*	67-58-1	<2%
Silanes	not established	<1%

*Additional Methanol may be formed by reaction with moisture.

SECTION 3 – HAZARDS IDENTIFICATION

DANGER!

HARMFUL OR FATAL IF SWALLOWED.

HARMFUL BY INHALATION OF MIST.

MAY CAUSE ALLERGIC SKIN REACTION.

MAY CAUSE EYE DAMAGE AND BLINDNESS IF SWALLOWED.

MAY CAUSE DIZZINESS AND DROWSINESS.

MAY CAUSE HEART MUSCLE DAMAGE.

MAY CAUSE LIVER AND KIDNEY DAMAGE.

SECTION 4 – FIRST AID MEASURES

EYE CONTACT: Immediately rinse with clean water for 15 minutes. Retract eyelids often. Obtain medical attention.

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: Remove victim to fresh air. Give artificial respiration if not breathing. If breathing is difficult, oxygen may be given by qualified personnel. Obtain medical attention.

INGESTION: If patient is fully conscious, give two glasses of water. Induce vomiting. Obtain medical attention without delay.

NOTES TO PHYSICIAN: This material reacts with moisture in the acid contents of the stomach to produce methanol. The combination of visual disturbances, metabolic acidosis, and formic acid in the urine is evidence of methanol poisoning. The therapeutic intravenous administration of ethanol (10 ml per hour) allows it to be preferentially oxidized and reduces production of methanol metabolites. Acidosis must be treated by means of intravenous sodium bicarbonate and methanol elimination may be increased by hemodialysis, as indicated. Treatment should be based on blood methanol levels and acid-base balance. Folates may be administered to enhance the metabolism of formaldehyde. 4-Methyl pyrazole has been suggested as an antidote because of its alcohol dehydrogenase inhibiting effects, it reduces the production of formate and the development of metabolic acidosis. However, the value of this antidote remains to be proven in humans. Sensitized workers should avoid future handling of the material.

SECTION 5 - FIRE & EXPLOSION DATA

FLASH POINT (Method Used): 108°C (226°F) (TCC)

FLAMMABLE LIMITS: N/D

AUTOIGNITION TEMPERATURE: N/D

EXTINGUISHING MEDIA: Use alcohol-type foam or universal-type foam for large fires. Use carbon dioxide or dry chemical for small fires.

SPECIAL FIRE FIGHTING PROCEDURES: None. Use Self-contained breathing apparatus and protective clothing.

UNUSUAL FIRE & EXPLOSION HAZARDS: None known.

HAZARDOUS COMBUSTION PRODUCTS: Burning can produce oxides of carbon and oxides of silicon. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant. Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

SECTION 6 - SPILL OR LEAK PROCEDURES

MINIMIZE SPILL AREA. Vacuum spill material and place in closed plastic bags for disposal. Wear suitable protective clothing. Avoid contact with eyes and skin. This product is toxic to aquatic life; avoid discharge to natural waters. Dispose of in accordance with local, state, and federal regulations.

SECTION 7 – HANDLING AND STORAGE

Do not swallow. Avoid breathing dust. Use with adequate ventilation. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Danger! Harmful or fatal if swallowed due to methanol production in the stomach. Store in a closed container.

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.

WARNING! Hot organic chemical vapors or mists are susceptible to sudden spontaneous combustion when mixed with air. Ignition may occur at temperatures below those published in the literature as "autoignition" or "ignition" temperatures. Ignition temperatures decrease with increasing vapor volume and vapor/air contact time, and are influenced by pressure changes. Ignition may occur at typical elevated-temperature process conditions, especially in processes operating under vacuum if subjected to sudden ingress of air, or outside process equipment operating under elevated pressure if sudden escape of vapors or mists to the atmosphere occurs.

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

SECTION 8 - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Use a respirator such as 3M 9900 or equivalent for protection against pneumoconiosis producing dusts. Use a self-contained breathing apparatus in high dust concentrations.

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. General room ventilation is expected to be satisfactory where this product is stored and handled in closed equipment. Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

EXPOSURE LIMITS:

Calcium Silicate: 5 mg/m³ respirable nuisance dust, OSHA. 10 mg/m³ total nuisance dust, ACGIH.

Methanol: 200 ppm TWA, (skin) OSHA and ACGIH, 250 ppm STEL (skin) OSHA and ACGIH

PROTECTIVE GLOVES: Impervious gloves recommended in order of use: 4H, Butyl, Neoprene, Nitrile (NBR), PVC-coated.

EYE PROTECTION: Safety goggles.

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

SECTION 9 - PHYSICAL DATA

Boiling Point: 255°C (491°F)	Specific Gravity: 1.245 (Calculated)
Vapor Pressure (mm Hg) : <1	Percent Volatiles: N/DA
Vapor Density (Air = 1) : >1	Evaporation Rate: <1
Solubility in Water: Reacts slowly	Flash Point: 108°C (226°F)
Appearance and Odor: Off-white, free flowing powder with ester odor	

SECTION 10 - REACTIVITY DATA

STABILITY: Stable. This product is inhibited against polymerization.

MATERIALS TO AVOID- Alkalies, metal salts, oxidizing agents, water, free radical initiators such as peroxides.

CONDITIONS TO AVOID- Heat or high temperature, alkalies, metal salts, strong oxidizing agents, free radical initiators, such as peroxides. They may cause exothermic polymerization or degradation of the product. Avoid high temperature treatment (>800°C) that may alter surface properties of the silicate.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon, and silicon.

HAZARDOUS POLYMERIZATION: May occur.

CONDITIONS TO AVOID: Alkalies, metal salts, oxidizing agents, free radical initiators, such as peroxides. They may cause an exothermic polymerization and/or decomposition.

SECTION 11 - HEALTH HAZARD DATA

GENERAL: this product contains methanol. The potential for methanol toxicity (metabolic acidosis visual disturbances, CNS depression, fetal toxicity, and liver, kidney and muscle damage) to result from accidental exposure to large quantities of product, should be recognized.

EFFECTS OF REPEATED EXPOSURE: Prolonged or repeated overexposure to methanol vapor concentrations of 3000 ppm or greater may allow a cumulative effect to occur with resulting nausea, vomiting, headache, ringing in the ears, insomnia trembling, unsteady gait, vertigo, clouded and double vision. Liver and/or kidney injury may occur. Prolonged overexposure at levels of 800-1000 ppm may result in severe eye damage in some persons.

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

CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN: None

NTP: No **IARC:** No **OSHA:** No

EFFECTS OF EXPOSURE-

EYES- May cause irritation, experienced as stinging with excess blinking and tear production. Excess redness and swelling of the conjunctiva may occur. May cause temporary superficial injury of the cornea.

SKIN- Acute effects: No evidence of harmful effects from available information. Prolonged or repeated contact may cause defatting and drying of the skin. This material may be capable of inducing delayed contact hypersensitivity when applied topically. Dermal contact may cause an allergic skin reaction in sensitized individuals.

INHALATION- Acute effects: Short-term harmful health effects are not expected from vapor generated at ambient temperatures. However, this material is capable of forming methanol if hydrolyzed. Methanol vapor may cause dizziness, disturbance of vision, and tingling, numbness and shooting pains in the hands and forearms.

INGESTION- Acute effects: Acute oral exposure (ingestion of significant quantities) during organogenesis may lead to increased reproductive risk. This product hydrolyzes in the stomach to form methanol. Methanol may cause nausea, abdominal pain, vomiting, headache, dizziness, shortness of breath, weakness, fatigue, leg cramps, restlessness, confusion, drunken behavior, visual disturbances, drowsiness, coma, and death. There may be a delay of several hours between swallowing methanol and the onset of signs and symptoms. The effects observed are in part due to acidosis and partially to cerebral edema. Visual effects include blurred vision, diplopia, changes in color perception, restriction of visual fields, and complete blindness. Ingestion of moderate quantities of methanol also produces metabolic acidosis. Onset of symptoms may be delayed up to 48 hours. 60 - 200 ml of methanol is a fatal dose for most adults. Ingestion of as little as 10 ml has caused blindness. With massive overdoses, liver, kidney, and heart muscle injuries have been described.

MUTAGENICITY – The silane component of this material was negative in a bacterial mutagenicity assay (Ames test).

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.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION: Inhalation studies in laboratory animals have shown that repeated exposures to high concentrations of respirable, aqueous aerosol of the hydrolysis and condensation products of gamma-methacryloxypropyltrimethoxysilane may cause a chronic inflammatory reaction in the larynx. In vitro studies have shown this product not to be mutagenic, but a clastogenic effect was observed in cultured cells. The relevance of these findings to humans is unknown. Dermal hypersensitivity testing involving extensive injection and topical exposure (Guinea Pig Maximization Study) suggested a slight potential for sensitization. In a developmental study in rats, repeated oral gavage exposures to high concentrations during gestation resulted in significant maternal and fetal toxicity, including malformations. However, fetal effects were not observed in the absence of maternal toxicity. The no effect level for maternal and fetal effects was 0.5 ml/kg/day.

SECTION 12 – ECOLOGICAL INFORMATION

All available ecological data have been taken into account for the development of the hazard and precautionary information contained in this Material Safety Data Sheet.

SECTION 13 – DISPOSAL CONSIDERATIONS

General: Incinerate in a furnace where permitted under appropriate federal, provincial, and local regulations.

SECTION 14 – TRANSPORTATION INFORMATION

Canada: This product is not regulated by TDG.
IMDG Classification: This product is not regulated by IMDG
ICAO Classification: This product is not regulated by ICAO.

SECTION 15 - REGULATORY INFORMATION

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

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 28 %
Methanol- Immediate health hazard, delayed health hazard <0.20%

CHEMICAL INVENTORY:

Canada: The ingredients of this product are included on or exempt from the DSL.
Europe: 219-785-8

United States: The components of this product are on the TSCA Inventory, or exempt.

WHMIS CLASSIFICATION:

D2A Very toxic material causing other effects.

D2B Toxic material causing other effects.

CPR Compliance: The silane component of this product has been classified with the hazard criteria of the CPR and the MSDS contains all the information required by CPR.

SECTION 16 - OTHER INFORMATION

Revision Date: July 17, 2007

Replaces revision dated: July 7, 2000.

Revision Note: Updated to new format.

Prepared by: Craig Moore

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

The information given in this MSDS was obtained from sources which we believe are reliable. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, Natrochem, Inc. makes no warranty express or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon.