SECTION 1 : Identification of the substance/preparation and of the company / undertaking

(a) GHS product identifier
Vitex Liquid A

(e) Emergency phone number
CHEMTRAC 1-800-424-9300
CCN9105

(b) Other means of identification
N/A

(c) Recommended use of the chemical and restrictions on use
Dental manufacturing or Laboratory use

(d) Supplier's details
Garreco, LLC.
430 Hiram Road
Heber Springs, AR 72543
Phone: 1-800-334-1443

SECTION 2: Hazards identification

(a) GHS classification of the substance/mixture

Substance Name

1. Ethyl Silicate
2. Ethanol

(b) Label Elements

Hazard statements

Flammable liquid and vapor.
Harmful if inhaled.
Causes serious eye irritation.
May cause respiratory irritation.
Highly flammable liquid and vapor.

Precautionary statements

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep container tightly closed
Ground and bond container and receiving equipment.
Use explosion-proof equipment
Use non-sparking tools.
Take action to prevent static discharges.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wash thoroughly after handling.

Response

IF ON SKIN: Take off immediately all contaminate clothing. Rinse skin with water or shower for 15 minutes. If skin becomes irritated and irritation persists, medical attention may be necessary. Wash contaminated clothing before reuse, discard contaminated shoes.

IF INHALED: May cause respiratory irritation. Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. Call a poison center if you feel unwell. In inhalation of decomposition products, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

IF SWALLOWED: Causes severe burns. Rinse mouth. DO NOT induce vomiting. Immediately call a poison center or doctor if you feel unwell. If professional advice is not available, give two glasses of water to drink.

IF IN EYES: Causes serious eye irritation. Rinse cautiously with water for a minimum of 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

Hazard Symbol(s)
Flame
Exclamation Mark

Signal Word(s)
Danger

(c) Other hazards which do not result in classification

ND

SECTION 3: Composition/information on ingredients

(a) Chemical(s) Identity:		**Mixture:**
(b) Common Name:	**(c) CAS No.**	**Concentration (Percentage)**
1. Ethyl Silicate	78-10-4	~67%
2. Ethanol	64-17-5	~32%

SECTION 4: First-aid measures

(a) Description of first aid measures:

IF ON SKIN (or hair): Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately.

IF INHALED: Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.

IF SWALLOWED: DO NOT INDUCE VOMITING! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

IF IN EYES: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately seek medical attention.

(b) Most important symptoms and effects, both acute and delayed:

May irritate the respiratory tract and may cause central nervous system depression, dizziness, headache, confusion, moderate skin irritation, coughing, choking, nausea, vomiting.

(c) Indication of any immediate medical attention and special treatment needed:

Central nervous system depression, dizziness, headache, confusion, moderate skin irritation, coughing, choking, nausea, vomiting. Persons with pre-existing kidney or liver disease may be at an increased risk.

SECTION 5: Fire-fighting measures

(a) Suitable extinguishing media:

Use water fog, dry powder, alcohol foam or carbon dioxide extinguishing agents. Water may be

(b) Special hazards arising from the chemical or mixture:

This product is a volatile, flammable liquid. Vapors may travel to a source of ignition and flash back. Decomposes under fire conditions to give off oxides of silicon and carbon.

(c) Special protective equipment and precautions for fire-fighters:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Evacuate nonessential personnel from the fire area. Firefighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. If possible, move containers from the fire area. High pressure water may spread product from broken containers increasing contamination of fire hazard.

SECTION 6: Accidental release measures

(a) Personal precautions, protective equipment and emergency procedures:

Wear chemical safety glasses or goggles. Use an OSHA approved respirator. Wear nitrile or rubber gloves and apron.

(b) Environmental precautions:

Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.

(c) Methods and material for containment and cleaning up:

If material is spilled, all ignition sources in the area should be extinguished and the leak stopped at the source. For large spill's dike ahead of spill to contain. For small spills, absorb with sand or other inert absorbent. Place in a proper container for disposal. Personnel involved in spill control and cleanup should follow the recommended exposure controls in SECTION 8 of this MSDS. All non-essential personnel should be evacuated from the immediate spill area.

SECTION 7: Handling and storage

(a) Precautions for safe handling:

Electrically grounded tanks and containers should always be used as should non-sparking, electrically grounded hand tools and appliances. Ground or bond to ground all vessels when transferring to prevent the accumulation of static electricity. See National Electric Code.

(b) Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well-ventilated area away from sources of heat, ignition, direct sunlight, oxidizers and alkalis. Keep container closed when not in use. Open closures slowly; internal pressure may be present. Store below flashpoint. This product may attack certain plastics over extended periods of time.

SECTION 8: Exposure controls/Personal protection

(a) Control parameters:

	ACGIH	OSHA
Chemical	**TLV**	**PEL TWA**
1. Ethyl Silicate	85 mg/m³	850 mg/m³
2. Ethanol	1000 ppm	1000 ppm

(b) Appropriate Engineering Controls:

Local exhaust ventilation, enclosed system design, continuous monitoring devices, process isolation and remote control are traditional exposure control techniques that may be used to effectively minimize employee exposure. All food and smoking materials should be kept in a separate area away from the storage/use location. Eating, drinking and smoking should be prohibited in areas where there is a potential for exposure to this material. Before eating, drinking or smoking, hands and face should be thoroughly washed.

(c) Individual protection measures:

RESPIRATORY: Use NIOSH-approved organic vapor respirators with dust, mist and fume filters to reduce potential for inhalation exposure if use conditions generate vapor, mist or aerosol and adequate ventilation (i.e. outdoor or well-ventilated area) is not available. Where exposure potential necessitates a higher level of protection, use a NIOSH-approved, positive-pressure/pressure-demand, air-supplied respirator. When using respirator cartridges or canisters, they must be changed frequently (following each use or at the end of the workshift) to assure breakthrough exposure does not occur.

OTHER PROTECTIVE EQUIPMENT: Skin contact with liquid or its aerosol should be prevented through the use of suitable protective clothing, gloves and footwear selected with regard for use condition exposure potential. If the possibility of splashing or spraying of this material exists, chemical goggles and/or a full face shield should be worn.

SECTION 9: Physical and chemical properties

(a) Appearance:	Water-white liquid
(b) Odor:	sweet ketone odor
(c) Odor threshold:	85 ppm (ethyl silicate)
(d) pH:	NA
(e) Melting point / freezing point:	-119°F
(f) Initial boiling point and boiling range:	~334°F
(g) Flash point	80-90°F
(h) Evaporation rate (BuAc=1):	LT 1
(i) Flammability:	Highly flammable
(j) Upper/lower flammability or explosive limits:	19% / 3.3%
(k) Vapor Pressure:	13 (mmHg) @ 50°F
(l) Vapor density:	7.22 (Air = 1.0)
(m) Relative density:	NA
(n) Solubility:	Hydrolyzes in water
(o) Partition coefficient: n-octanol/water:	ND
(p) Auto-ignition temperature:	685°F
(q) Decomposition temperature:	NA
(r) Viscosity:	0.72 cps @ 68°F

SECTION 10: Stability and reactivity

(a) Reactivity:
This product is stable at ambient temperatures and atmospheric pressures. It is not self-reactive and is not sensitive to physical impact.

(b) Chemical stability:
This product is stable at ambient temperatures and atmospheric pressures. It is not self-reactive and is not sensitive to physical impact.

(c) Possibility of hazardous reactions:
Hazardous polymerization is not expected to occur.

(d) Conditions to avoid:
Under wet alkaline or acidic conditions, prolonged storage at elevated temperatures should be avoided to assure product integrity. Store away from foodstuffs, animal feed and incompatibles such as oxidizers, acids and alkalis. The substance can presumably form explosive peroxides, under the influence of light and air. Check for peroxide prior to distillation, eliminate if found.

(f) Hazardous decomposition products:
Thermal decomposition products include oxides of carbon and silicon.

SECTION 11: Toxicological information

Acute toxicity	LC50 for ethyl silicate is greater than 7.5 mg/L in rats.
Skin corrosion/irritation	LD50 for ethyl silicate is grater that 1000 mg/kg in rabbits.
Serious Eye Damage / Irritation	Primary irritation to eyes, redness, tearing, blurred vision.
Respiratory or skin sensitization	Anesthetic. Irritates respiratory tract. May cause pulmonary edema.
Germ cell mutagenicity	This product is not reported to produce mutagenic effects in humans.
Carcinogenicity	Neither this product nor its components have been classified as a carcinogen by IARC, NTP, OSHA, or ACGIH>
Reproductive toxicity	NA
STOT-single exposure	Kidneys, blood, nerves, liver, lungs.
STOT-repeated exposure	Kidneys, blood, nerves, liver, lungs, eyes, skin, and respiratory system.
Aspiration Hazard	Yes

(a) Exposure route:
inhalation, skin and/or eye contact

(b) Symptoms related to the physical, chemical and toxicological characteristics:
Eye irritation, respiratory irritation, central nervous system depression, dizziness, headache, confusion, eye redness, tearing, blurred vision, dermatitis, blindness, abdominal irritation, nausea, vomiting, and diarrhea.

(c) Delayed and immediate effects and also chronic effects from short and long tem exposure:
Eye irritation, respiratory irritation, central nervous system depression, dizziness, headache, confusion, eye redness, tearing, blurred vision, dermatitis, blindness, abdominal irritation, nausea, vomiting, and diarrhea.

(d) Numerical measures of toxicity:
NA

SECTION 12: Ecological information

(a) Ecotoxicity:
Bacteria (psuedomonas putida) 6500 mg/L
Algae (Microcystis aeruginosa) 1450 mg/L
Protozoa (Entosiphon sulcatum) 65 mg/L
Fingerling Trout: 24 hr LC50 11,200 mg/L
Guppies (Poecilia reticulata) LC50: (7 days): 11,050 ppm
Creek chub (Semotilus atromaculatus); 24 hr. LC50 >7000 mg/L

(b) Persistence and degradability:
This product hydrolyzes slowly in wet alkaline or acidic conditions to silicon oxides and ethanol.

(c) Bioaccumulative potential
This product does not accumulate or biomagnify in the environment.

(d) Mobility in soil:
This material is a mobile liquid.

(e) Other adverse effects:
NA

SECTION 13: Disposal considerations

Product:

Recommendation

WASTE DISPOSAL: It is the responsibility of the waste generator to evaluate whether his wastes are hazardous by characteristics or listing.

CONTAINER DISPOSAL: Containers should be cleaned of residual product before disposal. Empty containers should be disposed of in accordance with all applicable laws and regulations.

SECTION 14: Transport information

(a) UN Number	UN 1993
(b) UN Proper shipping name	Flammable Liquid, N.O.S (Contains: Ethyl silicate and ethyl alcohol)
(c) Transport hazard class(es)	3
(d) Packing Group	3
(e) Environmental hazards	This product does not contain an environmentally hazardous substance or Marine Pollutant per 49 CFR 172.101 Appendices.
(f) Transport in bulk	NA
(g) Other Information	NA

SECTION 15: Regulatory information

SARA Reporting Requirements:	Acute Health, Fire
SARA Threshold Planning Quantity:	NA
TSCA Inventory Status:	All ingredients are listed on the TSCA Inventory.
Other Federal Requirements:	All ingredients are listed on the DSCL Inventory.
Other Canadian Regulations:	All ingredients are listed on the DSL Inventory.
State Regulatory Information:	Not listed.

SECTION 16: Other information

PREPARED BY: Kristofer Mainar

GAR QMS SDS REFERENCE: A056, A308

HAZARDOUS MATERIAL IDENTIFICATION (HMIS) RATING:

Health	2
Flammability	2
Reactivity	0
Other	NA

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATING:

Health	2
Flammability	3
Reactivity	0
Specific hazard	NA

REVISION NUMBER: 170731

CHANGES FROM PREVIOUS VERSION: Reviewed for accuracy.

ABBREVIATIONS

NA Not Applicable
ND Not Determined
NE Not Established
ppm parts per million
G Gallon
mg Milligram
L Liter
gm Gram
mol Mole
kg Kilogram
µ Micro
mm Millimeter
p Pico
Pa Pascals
c cento
LC Lethal Concentration
ACGIH American Conference of Governmental Industrial Hygienist
OSHA Occupational Safety and Health Administration
DSL Canadian Domestic Substances List
NDSL Canadian Non-domestic Substance List
IARC International Agency for Research for Cancer
LD Lethal Dose
TC Toxic Concentration
TD Toxic Dose
BOD Biological Oxygen Demand
COD Chemical Oxygen Demand
Lo Lowest
ThOD Theoretical Oxygen Demand
TLm Threshold Limit
IC Inhibitory Concentration
DOC Dissolved Organic Carbon
H Hours
M Months
D Days
Y Years
W Weeks
CPR Controlled Product's Regulation
NOEL No Observed Effect Level
NOAEL No Observed Adverse Effect Level
PEL Permissible Exposure Limit
TLV Threshold Limit Value

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