

# SAFETY DATA SHEET

## SUPER SEAL ADVANCED™ MEDIUM SYSTEMS

Revision Date: May 6, 2015  
Supersedes: February 1, 2012

Version: 2.2

### Section 1 – Identification of the Substance/Mixture and of the Company/Undertaking

**Product Name:** SUPER SEAL ADVANCED™ MEDIUM SYSTEMS

**Part Number(s):** 944KIT

**Product Class:** HVAC and refrigeration additive

**Manufacturer:** Cliplight Manufacturing  
961 Alness Street  
Toronto, ON M3J 2J1, Canada

**email:** sales@cliplight.com

**Telephone:** +1 416 736 9036

**Emergency Telephone:** +1 613 996 6666 (Canutec)

### Section 2 – Hazards Identification

#### GHS Classification

Flammable liquids: Category 3

Skin irritation: Category 3

Eye irritation: Category 1

Skin Sensitization: Category 1

Hazardous to the aquatic environment (Chronic 3)

#### **Label elements:**



Danger

#### **Hazard statements:**

H226 Flammable liquid and vapour

H316 Causes mild skin irritation

H318 Causes serious eye damage

H317 May cause an allergic skin reaction

H412 Harmful to aquatic life with long lasting effects

#### **Precautionary statements:**

P280 Wear protective gloves and eye protection.

P261 Avoid breathing mist, vapour or spray.

P273 Avoid release to the environment.

P302 + P352 IF ON SKIN: Wash with soap and plenty of water.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately seek medical attention.

P501 Dispose of contents and container in accordance with local, state and national regulations.

#### **Other hazards**

None known.

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**Section 3 – Composition/Information on Ingredients**

| <b>Ingredient Name</b>                           | <b>CAS No.</b> | <b>EC No.</b> | <b>Composition, wt%</b> |
|--|----------------|---------------|-------------------------|
| Triethylorthoformate                             | 122-51-0       | 204-550-4     | 30 - 50                 |
| Trimethoxyvinylsilane                            | 2768-02-7      | 220-449-8     | 5 - 10                  |
| N-(3-(trimethoxysilyl)propyl)<br>ethylenediamine | 1760-24-3      | 217-164-6     | 5 - 10                  |
| Trimethoxy(methyl)silane                         | 1185-55-3      | 214-685-0     | 0.5 – 1.5               |

Remaining components are not classified as hazardous under the GHS or 29 CFR 1910.1200.

**Section 4 – First Aid Measures**

**Inhalation**

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

**Eye Contact**

Remove contact lenses and immediately flush eyes with copious amounts of water for at least 15 minutes. Obtain medical attention.

**Skin Contact**

Immediately wash skin with soap and plenty of water. If irritation persists or if contact has been prolonged, obtain medical attention. Wash contaminated clothing before reuse.

**Ingestion**

Do NOT induce vomiting. Wash out mouth with water provided person is conscious. Call a physician.

**Acute and Delayed Symptoms**

This product is expected to react with moisture in the gastrointestinal tract to form methanol. Symptoms may be delayed and include headache, dizziness, nausea, lack of coordination, and confusion.

**Special Treatment Needed**

Get medical treatment immediately.

**Section 5 – Firefighting Measures**

**Extinguishing Media**

DO NOT USE WATER STREAM. Use carbon dioxide, dry chemical powder, alcohol-resistant foam or water spray.

**Special hazards arising from the substance or mixture**

Burning in a fire produces carbon oxides, silicon oxides, smoke and fumes.

**Advice for firefighters**

Self-contained breathing apparatus and protective clothing if required.  
Vapours may travel considerable distance to a source of ignition and flash back.

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**Section 6 – Accidental Release Measures**

**Personal precautions**

Shut off all sources of ignition. Wear chemical-resistant gloves and chemical safety goggles or safety glasses with side shields. Provide adequate ventilation.

**Environmental precautions**

Provide adequate ventilation. Avoid runoff to sewers and waterways.

**Methods and materials for containment and cleaning up**

Cover spill with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

**Section 7 – Handling and Storage**

**Precautions for safe handling**

Avoid breathing vapour. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. See section 8 for protective clothing. Use away from heat, sparks, open flame or any other ignition source. Wash hands thoroughly after handling.

**Conditions for safe storage**

Keep away from heat, sparks, and open flame. In the opened canister, this product is sensitive to moisture.

**Section 8 – Exposure Controls/Personal Protection**

**Control Parameters**

None of the components of this product have occupational exposure limit values.

**Engineering Controls**

General room ventilation is expected to be sufficient for use of the product.

**Protective Equipment**

Use protective gloves. Use eye protection and chemical protective clothing.

**Hygiene**

Wash thoroughly after handling. Wash contaminated clothing before reuse.

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**Section 9 – Physical and Chemical Properties**

|   |                                      |
|---|--------------------------------------|
| Appearance                                | Clear colourless liquid              |
| Odour                                     | Ethereal                             |
| Odour threshold                           | No data available                    |
| pH  | No data available                    |
| Freezing point                            | No data available                    |
| Boiling point                             | No data available                    |
| Flash point                               | 30°C (86°F)                          |
| Evaporation rate                          | No data available                    |
| Flammability or explosive limits          | No data available                    |
| Vapour pressure                           | No data available                    |
| Vapour density                            | No data available                    |
| Density                                   | 0.95 g/cm <sup>3</sup> @ 25°C (77°F) |
| Water Solubility                          | No data available                    |
| Partition coefficient:<br>n-octanol/water | No data available                    |
| Auto-ignition temperature                 | No data available                    |
| Decomposition temperature                 | No data available                    |
| Viscosity                                 | No data available                    |

**Section 10 – Stability and Reactivity**

**Reactivity**

Reacts with water or moisture

**Chemical stability**

Stable under recommended storage conditions

**Possibility of hazardous reactions**

Unlikely

**Conditions to avoid**

Moisture, heat, flames and sparks

**Incompatible materials**

Acids, strong oxidizing agents

**Hazardous decomposition products**

Reacts with water or moisture to form methanol. In a fire, carbon monoxide, carbon dioxide and silicon oxides are formed.

**Section 11 – Toxicological Information**

The toxicological properties of this product have not been investigated. Information for some components is provided below.

**Acute toxicity**

|                |   |
|----------------|---|
| Oral LD50 rat: | Triethylorthoformate – 7060 mg/kg                         |
|                | Trimethoxyvinylsilane - 7340 - 7460 mg/kg                 |
|                | N-(3-(trimethoxysilyl)propyl)ethylenediamine - 2995 mg/kg |
|                | Trimethoxy(methyl)silane - 11685 mg/kg                    |

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Skin LD50 rabbit: Triethylorthoformate – 17820 mg/kg  
Trimethoxyvinylsilane – 3460 - 4000 mg/kg  
N-(3-(trimethoxysilyl)propyl)ethylenediamine - >2000 mg/kg  
Trimethoxy(methyl)silane – >9500 mg/kg

Skin LD50 guinea pig: Triethylorthoformate - >8910 mg/kg

Inhalation LC50 rat: Trimethoxyvinylsilane - 16.79 mg/l  
N-(3-(trimethoxysilyl)propyl)ethylenediamine – 1.49 – 2.44 mg/l  
Trimethoxy(methyl)silane – >42.1 mg/l

**Skin corrosion/irritation**

Rabbit: Triethylorthoformate – slightly irritating  
Trimethoxyvinylsilane - no irritation  
N-(3-(trimethoxysilyl)propyl)ethylenediamine – no irritation  
Trimethoxy(methyl)silane – no irritation

**Serious eye damage/irritation**

Rabbit: Triethylorthoformate – no irritation  
Trimethoxyvinylsilane - no irritation  
N-(3-(trimethoxysilyl)propyl)ethylenediamine - strongly irritating  
Trimethoxy(methyl)silane – no irritation

**Respiratory or skin sensitization**

Guinea pig: Trimethoxyvinylsilane - did not elicit a delayed contact hypersensitivity response  
N-(3-(trimethoxysilyl)propyl)ethylenediamine - may cause sensitization by skin contact  
Trimethoxy(methyl)silane – no irritation

**Repeated Dose Toxicity**

Oral rat: Trimethoxyvinylsilane  
NOAEL: <62.5 mg/kg  
Lowest Observable Effect Level – 62.5 mg/kg  
  
N-(3-(trimethoxysilyl)propyl)ethylenediamine  
NOAEL: >500 mg/kg  
Exposure time: 28 d  
  
Trimethoxy(methyl)silane  
NOAEL: 50 mg/kg  
Exposure time: 28 d

Inhalation rat: Trimethoxyvinylsilane  
NOAEL – 10 mg/l  
Lowest Observable Effect Level - 100 mg/kg

**Germ cell mutagenicity**

N-(3-(trimethoxysilyl)propyl)ethylenediamine: negative (Ames test)

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**Carcinogenicity**

None of the components of this product is identified as a carcinogen by IARC, ACGIH, NTP or OSHA.

**Reproductive toxicity**

N-(3-(trimethoxysilyl)propyl)ethylenediamine

No Observed Adverse Effect Level (NOAEL):

500 mg/kg/day (developmental and maternal toxicity)

Oral ratmale:            Trimethoxyvinylsilane  
                              NOAEL P1 – 1000 mg/kg  
                              NOAEL F1 – 1000 mg/kg

Oral ratfemale:        Trimethoxyvinylsilane  
                              NOAEL P1 – 250 mg/kg  
                              NOAEL F1 – 1000 mg/kg

**Specific target organ toxicity – single exposure**

No data available

**Aspiration hazard**

No data available

**Potential Health Effects:**

**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation.

**Skin Contact:** May be harmful if absorbed through skin. Causes mild skin irritation.

**Eye Contact:** Causes eye irritation.

**Ingestion:** May be harmful if swallowed.

**Section 12 – Ecological Information**

No data are available for the ecological effects of this product; information on some components is provided below.

The silane components of the product degrade through hydrolysis into alcohols and silanol and/or siloxanol compounds.

The product is not expected to be readily biodegradable.

Toxicity to fish:            Trimethoxyvinylsilane  
                                  LC50 – 96 h  
                                  Species: Brachydanio  
                                  Result: >100 mg/l

                                  Trimethoxyvinylsilane  
                                  LC50 – 96 h  
                                  Species: Oncorhynchus mykiss  
                                  Result: >191 mg/l

                                  N-(3-(trimethoxysilyl)propyl)ethylenediamine  
                                  LC50  
                                  Species: Lepomis macrochirus  
                                  Result: >100 mg/l

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|------------------------------|---|
| Toxicity to other organisms: | Trimethoxyvinylsilane<br>EC50 – 48 h<br>Species: Daphnia magna<br>Result: >100 mg/l   |
|                              | N-(3-(trimethoxysilyl)propyl)ethylenediamine<br>EC50 – 48 h<br>Species: Daphnia magna<br>Result: 87.4 mg/l                  |
| Toxicity to algae:           | Trimethoxyvinylsilane<br>EC50 – 72 h<br>Species: Desmodesmus subspicatus<br>Result: >100 mg/l                               |
|                              | N-(3-(trimethoxysilyl)propyl)ethylenediamine<br>EC50 - 96 h<br>Species: Pseudokirchneriella subcapitata<br>Result: 8.8 mg/l |
|                              | N-(3-(trimethoxysilyl)propyl)ethylenediamine<br>NOEC<br>Species: Pseudokirchneriella subcapitata<br>Result: 3.1 mg/l        |
| Toxicity to microorganisms:  | Trimethoxyvinylsilane<br>NOEC<br>Species: Bacteria<br>Result: >1000 mg/l<br>Exposure time: 3 h                              |

**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Other adverse effects**

No data available

**Section 13 – Disposal Considerations**

**Product**

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is flammable. Observe all federal, state, and local environmental regulations.

**Contaminated packaging**

Dispose of as product.

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**Section 14 – Transport Information**

**DOT:** Consumer Commodity, ORM-D

**OCEAN (IMDG):** UN1993, FLAMMABLE LIQUID, N.O.S. (Ethyl Orthoformate & Trimethoxyvinylsilane), Class 3, PG III, Ltd Qty, EMS-No: F-E, S-E

**AIR (IATA):** UN1993, FLAMMABLE LIQUID, N.O.S. (Ethyl Orthoformate & Trimethoxyvinylsilane), Class 3, PG III

**Section 15 – Regulatory Information**

All components of this product are on the Canadian Domestic Substances List (DSL).

All components of this product are listed in the U.S. Toxic Substances Control Act (TSCA) Inventory.

All components of this product are on or in compliance with the Australian Inventory of Chemical Substances (AICS).

A chemical safety assessment has not been carried out for this product.

**Section 16 – Other Information**

**HMIS CLASSIFICATION**

|                   |   |
|-------------------|---|
| Health Hazard:    | 2 |
| Flammability:     | 3 |
| Physical Hazards: | 0 |

**Notes to this Revision**

This version 2.2 (May 6, 2015) has been updated from version 2.1 to conform to the requirements of OSHA Hazard Communications Standard 2012 and EU (No.) 453/2010 from June 1, 2015. The SDS continues to meet requirements of the GHS.

Information in section 2 has been updated to reflect potential hazards to the eye and to the aquatic environment.

Information on some components has been updated in Section 11 (Toxicological Information) and in Section 12 (Ecological Information).

All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.