

SAFETY DATA SHEET

SUPER SEAL ADVANCED™ SMALL 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™ SMALL SYSTEMS

Part Number(s): 947KIT

Product Class: HVAC and refrigeration additive

Manufacturer: Cliplight Manufacturing
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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. If irritation persists or if contact has been prolonged, obtain medical attention. Wash contaminated clothing before reuse.

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

Ingredient Name	CAS No.	EC No.	Composition, wt%
Triethylorthoformate	122-51-0	204-550-4	60 - 80
Trimethoxyvinylsilane	2768-02-7	220-449-8	1 - 5
N-(3-(trimethoxysilyl)propyl) ethylenediamine	1760-24-3	217-164-6	1 - 5
Trimethoxy(methyl)silane	1185-55-3	214-685-0	0.1 - 1

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 copious amounts of water. If irritation persists or if contact has been prolonged, obtain medical attention.

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

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	34°C (93°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 ³ @ 25°C (77°F)
Water Solubility	No data available
Partition coefficient: 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)

Carcinogenicity

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

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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 EC50 – 48 h Species: <i>Daphnia magna</i> Result: >100 mg/l
	N-(3-(trimethoxysilyl)propyl)ethylenediamine EC50 – 48 h Species: <i>Daphnia magna</i> Result: 87.4 mg/l
Toxicity to algae	Trimethoxyvinylsilane EC50 – 72 h Species: <i>Desmodesmus subspicatus</i> Result: >100 mg/l
	N-(3-(trimethoxysilyl)propyl)ethylenediamine EC50 - 96 h Species: <i>Pseudokirchneriella subcapitata</i> Result: 8.8 mg/l
	N-(3-(trimethoxysilyl)propyl)ethylenediamine NOEC Species: <i>Pseudokirchneriella subcapitata</i> Result: 3.1 mg/l
Toxicity to microorganisms	Trimethoxyvinylsilane NOEC Species: Bacteria Result: >1000 mg/l 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/IATA/IACO/IMDG/TDG

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.