

# ÆGIS ENVIRONMENTS MATERIAL SAFETY DATA SHEET

## ÆGIS Microbe Shield™ Program — ÆGIS™ Antimicrobial (Typical Applied Material)

**Note:** This Material Safety Data Sheet has been prepared to provide information on the typical material remaining on a surface which has been treated with ÆGIS Antimicrobial. Antimicrobial is only sold as a concentrate in solvent. For application, ÆGIS Antimicrobial is diluted with water. The hydrolyzed material in the dilute solution then covalently or ionically bonds with the target surface and covalently bonds with itself to form a durable copolymer. Any CAS Numbers shown below are for the "as supplied" form of the antimicrobial. No CAS Numbers have been assigned for the intermediate hydrolyzed form or the resulting copolymer, neither of which are articles of commerce.

### SECTION 1 — CHEMICAL PRODUCT AND COMPANY INFORMATION

ÆGIS Environments  
2205 Ridgewood Drive  
Midland, MI 48642-5884

Telephone: (989) 832-8180  
Fax: (989) 832-7572

MSDS No. 64881-3

Current Version: 09/21/04

Generic Description:	Organosilane polymer		
Physical Form:	Solid		
Color:	Colorless		
Odor:	None		
NFPA Profile:	Health 1	Flammability 0	Reactivity 0

NFPA = National Fire Protection Association

### SECTION 2 — OSHA HAZARDOUS COMPONENTS

<u>CAS Number</u>	<u>Wt.%</u>	<u>Component</u>	<u>Exposure Limits</u>
027668526	84%	(Octadecylaminodimethyltrihydroxy-silylpropyl Ammonium Chloride) <sub>x</sub>	Copolymer — None
002530872	16%	(Chloropropyltrihydroxysilane) <sub>x</sub>	Copolymer — None

### SECTION 3 — EFFECTS OF OVEREXPOSURE

#### Acute Effects

Eye: No untoward effects.  
Skin: No untoward effects.  
Inhalation: Not Applicable.  
Oral: No untoward effects. LD<sub>50</sub> = 12.27 gm/kg (Albino Rats)

#### Prolonged/Repeated Exposure Effects

Skin: No untoward effects.  
Inhalation: No untoward effects.  
Oral: No untoward effects.

#### Signs and Symptoms of Overexposure

No known applicable information.

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**SECTION 3 Cont'd— EFFECTS OF OVEREXPOSURE**

**Medical Conditions Aggravated by Exposure**

No known applicable information

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for detailed toxicology information.

**SECTION 4 — FIRST AID MEASURES**

Eye: No effects expected from treated materials.

Skin: No effects expected from treated materials.

Inhalation: Not Applicable.

Oral: No effects expected from treated materials.

Comments: Any unsuspected and unexplained irritations or reactions in the presence of treated substances should be brought to the attention of a physician.

**SECTION 5 — FIRE FIGHTING MEASURES**

**Flash Point (closed cup):** None

**Autoignition Temperature:** Not Applicable

**Extinguishing Media:** Not Applicable

**Fire Fighting Procedures:** Not Applicable

**Unusual Fire Hazards:** None

**Hazardous Decomposition Products:**

Thermal breakdown of this product during fire or very high heat conditions may evolve hazardous decomposition products: Carbon oxides and traces of incompletely burned carbon compounds; Nitrogen oxides; Chlorine compounds; Silicon dioxide; Formaldehyde.

**SECTION 6 — ACCIDENTAL RELEASE MEASURES**

Not Applicable

**SECTION 7 — HANDLING AND STORAGE**

Not Applicable

**SECTION 8 — EXPOSURE CONTROLS / PERSONAL PROTECTION**

Not Applicable

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**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

Physical Form:	Liquid
Color:	Colorless to pale yellow
Odor:	None
Specific Gravity @ 25C:	Not Applicable
Viscosity:	Not Applicable
Freezing/Melting Point:	Not Applicable
Boiling Point:	Not Applicable
Vapor Pressure @25C:	None
Vapor Density:	Not Applicable
Solubility in Water:	None
pH:	Not Applicable
Volatile content:	0.0%

Note: The above information is not intended for use in preparing product specifications. Contact ÆGIS before writing specifications.

**SECTION 10 — STABILITY AND REACTIVITY**

<b>Chemical Stability:</b>	Stable
<b>Hazardous Polymerization:</b>	Hazardous polymerization will not occur
<b>Conditions to Avoid:</b>	None
<b>Materials to Avoid:</b>	Oxidizing Materials
<b>Comments:</b>	None

**SECTION 11 — TOXICOLOGICAL INFORMATION**

**Acute Toxicology Data for Product:** Complete information is not yet available

**SECTION 12 — ECOLOGICAL INFORMATION**

<b><u>Environmental Fate and Distribution:</u></b>	No specific information is available
<b><u>Ecotoxicity:</u></b>	No specific information is available
<b><u>Persistence and Degradation:</u></b>	No specific information is available

**Ecotoxicity Classification Criteria**

Hazard Parameters (LC50 or EC50)	High	Medium	Low
Acute Aquatic Toxicity (mg/L)	≤1	>1 and ≤100	>100
Acute Terrestrial Toxicity (mg/kg)	<-100	>100 and ≤ 2000	>2000

This table is adapted from "Environmental Toxicology and Risk Assessment", ATMA STP 1179, p. 34, 1993

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

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**SECTION 13 — DISPOSAL CONSIDERATIONS**

RCRA Hazard Class (40 CFR 261)

When a decision is made to discard this material, as received, is it classified as a hazardous waste? No

Federal Hazardous Waste Code: No Applicable

TCLP: No Applicable

State or local laws may impose additional regulatory requirements regarding disposal.

Call ÆGIS (989) 832-8180, if additional information is required.

**SECTION 14 — TRANSPORT INFORMATION**

DOT Road Shipment Information (49 CFR 172.101)

Proper Shipping Name: Not Applicable

Hazard Technical Name: Not Applicable

Hazard Class: Not Applicable

UN/NA Number: Not Applicable

Packing Group: Not Applicable

Call ÆGIS (989) 832-8180, if additional information is required.

**SECTION 15 — REGULATORY INFORMATION**

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29CFR 1910.1200.

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

EPA SARA Title III Chemical Listings:

Section 302 Extremely Hazardous Substances: None

Section 304 CERCLA Hazardous Substances: None

Section 312 Hazard Class:

Acute: No

Chronic: No

Fire: No

Pressure: No

Reactive: No

Section 313 Toxic Chemicals: None

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Supplemental State Compliance Information

<u>CAS Number</u>	<u>Wt</u> <u>%</u>	<u>Component</u>
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California

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer.

None Known.

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause birth defects or other reproductive harm.

None Known.

Massachusetts

None

New Jersey

027668526	84	Octadecylaminodimethyl trihydroxysilylpropyl ammonium chloride
002530872	16	Chloropropyltrihydroxysilane

Pennsylvania

027668526	84	Octadecylaminodimethyl trihydroxysilylpropyl ammonium chloride
002530872	16	Chloropropyltrihydroxysilane

**SECTION 16 — OTHER INFORMATION**

Prepared by: ÆGIS Environments.

These data are offered in good faith as typical values and not as product specifications. No warranty, either express or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.