SAFETY DATA SHEET

1. Identification

Product identifier **AEM 5700 Antimicrobial**

Other means of identification

Product code AEM5700

Recommended use Antimicrobial Application

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name Aegis Environmental Management, Inc.

Address 11400 Vanstory Drive
Huntersville, NC 28078
USA

Telephone 704-875-0806

Email infoleads@microban.com

Emergency phone number (24 hr Emergency) 1-800-535-5053 or 1-352-323-3500

Supplier Not available.

2. Hazard identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 3
	Acute toxicity, dermal	Category 3
	Acute toxicity, inhalation	Category 3
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity following single exposure	Category 1 (central nervous system, optic nerve)
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

Label elements

Signal word Danger

Hazard statement Highly flammable liquid and vapour. Toxic if swallowed. Toxic in contact with skin. Causes skin irritation. Causes serious eye damage. Toxic if inhaled. Causes damage to organs (central nervous system, optic nerve). Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention 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 electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Do not breathe mist/vapours. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response	IF SWALLOWED: Immediately call a POISON CENTRE/doctor. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor. If skin irritation occurs: Get medical advice/attention. Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage.
Storage	Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Not assigned.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations. Not assigned.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Methanol		67-56-1	50 - < 60
3-(Trimethoxysilyl) propyldimethyloctadecyl ammonium chloride		27668-52-6	40 - < 50
3-Chloropropyltrimethoxysilane		2530-87-2	5 - < 10
Dimantine		124-28-7	< 1

#: This substance has been assigned Union workplace exposure limit(s).

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. The full text for all H-statements is displayed in section 16.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control centre immediately.

Skin contact Take off immediately all contaminated clothing. Wash off immediately with plenty of water. Get medical advice/attention if you feel unwell. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion Call a physician or poison control centre immediately. Rinse mouth thoroughly. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center.

Most important symptoms/effects, acute and delayed Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information Take off immediately all contaminated clothing. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Vapours may form explosive mixtures with air. Vapours may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapour.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapours. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist/vapours. Do not get in eyes, on skin, on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep away from food, drink and animal feeding stuffs. Keep out of the reach of children. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Methanol (CAS 67-56-1)	STEL	328 mg/m3
		250 ppm
	TWA	262 mg/m3
		200 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Methanol (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value
Methanol (CAS 67-56-1)	STEL	328 mg/m3
		250 ppm
	TWA	262 mg/m3
		200 ppm

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Components	Type	Value
Methanol (CAS 67-56-1)	15 minute	250 ppm
	8 hour	200 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Methanol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

Canada - Alberta OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

Canada - British Columbia OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

Canada - Manitoba OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

Canada - Ontario OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

Canada - Quebec OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

Canada - Saskatchewan OELs: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Methanol (CAS 67-56-1) Can be absorbed through the skin.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear chemical goggles and face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.
Glove material: butyl-rubber. Use gloves with breakthrough time of > 480 minutes. Minimum glove thickness 0.7 mm.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapour cartridge and full facepiece.

Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Colour	Colorless to light yellow.
Odour	Solvent.
Odour threshold	Not available.
pH	3.5 - 8.5
Melting point/freezing point	Not available.
Initial boiling point and boiling range	> 64 °C (> 147.2 °F)
Flash point	11.1 °C (52.0 °F) Closed cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Miscible.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	5 cSt
Other information	
Density	0.86 - 0.96 g/cm³
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Water, moisture. Strong oxidising agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Toxic if inhaled.
Skin contact	Toxic in contact with skin. Causes skin irritation.
Eye contact	Causes serious eye damage.

Ingestion Toxic if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Toxic if inhaled. Toxic in contact with skin. Toxic if swallowed.

Product	Species	Test Results
AEM 5700 Antimicrobial		
Acute		
Dermal		
LD50	Rabbit	> 7.95 g/kg
Inhalation		
Vapour		
LC50	Rat	> 81.9 mg/l
Oral		
LD50	Rat	12.27 g/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitisation

Respiratory sensitisation Not a respiratory sensitizer. Based on available data, the classification criteria are not met.

Skin sensitisation This product is not expected to cause skin sensitisation. Based on available data, the classification criteria are not met.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Based on available data, the classification criteria are not met.

Carcinogenicity Not classifiable as to carcinogenicity to humans. Based on available data, the classification criteria are not met.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects. Based on available data, the classification criteria are not met.

Specific target organ toxicity - single exposure Causes damage to organs (central nervous system, optic nerve).

Specific target organ toxicity - repeated exposure Not classified. Based on available data, the classification criteria are not met.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful.

Further information Symptoms may be delayed.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Product		Species	Test Results
AEM 5700 Antimicrobial			
Aquatic			
Acute			
Crustacea	LC50	Daphnia	0.6 - 0.85 ppm, 48 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil This product is miscible in water.

Other adverse effects The product contains volatile organic compounds which have a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

TDG

UN number	UN1230
UN proper shipping name	METHANOL SOLUTION, Marine pollutant (3-(Trimethoxysilyl) propyldimethyloctadecyl ammonium chloride)
Transport hazard class(es)	
Class	3
Subsidiary risk	6.1
Packing group	II
Environmental hazards	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN1230
UN proper shipping name	METHANOL SOLUTION
Transport hazard class(es)	
Class	3
Subsidiary risk	6.1
Packing group	II
Environmental hazards	Yes
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN1230
UN proper shipping name	METHANOL SOLUTION, MARINE POLLUTANT (3-(Trimethoxysilyl) propyldimethyloctadecyl ammonium chloride)
Transport hazard class(es)	
Class	3
Subsidiary risk	6.1
Packing group	II
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

IATA; IMDG; TDG

Marine pollutant

General information IMDG Regulated Marine Pollutant.

15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)

Methanol (CAS 67-56-1)

Precursor Control Regulations

Not regulated.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto Protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

16. Other information

Issue date	04-April-2017
Revision date	30-November-2020
Version No.	05
Further information	None known.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information in the sheet was written based on the best knowledge and experience currently available.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.