

## 1. Identification

|   |   |
|---|---|
| <b>Product identifier</b>                                     | <b>AEM 5700 Antimicrobial</b>                         |
| <b>Other means of identification</b>                          |   |
| <b>Product code</b>   | AEM5700   |
| <b>Recommended use</b>  | Antimicrobial Application                             |
| <b>Recommended restrictions</b>                               | None known.   |
| <b>Manufacturer/Importer/Supplier/Distributor information</b> |   |
| <b>Company name</b>   | Aegis Environmental Management, Inc.                  |
| <b>Address</b>  | 11400 Vanstory Drive<br>Huntersville, NC 28078<br>USA |
| <b>Telephone</b>  | 704-875-0806  |
| <b>Email</b>  | infoleads@microban.com                                |
| <b>Emergency phone number</b>                                 | (24 hr Emergency) 1-800-535-5053 or 1-352-323-3500    |
| <b>Supplier</b>   | Not available.  |

## 2. Hazard(s) identification

|                              |  |  |
|------------------------------|--|--|
| <b>Physical hazards</b>      | Flammable liquids  | Category 2                                       |
| <b>Health hazards</b>        | 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, single exposure (inhalation) | Category 1 (central nervous system, optic nerve) |
| <b>Environmental hazards</b> | Hazardous to the aquatic environment, acute hazard           | Category 1                                       |
|                              | Hazardous to the aquatic environment, long-term hazard       | Category 1                                       |

### Label elements



|                                |  |
|--------------------------------|--|
| <b>Signal word</b>             | Danger   |
| <b>Hazard statement</b>        | Highly flammable liquid and vapor. 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) by inhalation. Very toxic to aquatic life with long lasting effects.   |
| <b>Precautionary statement</b> |  |
| <b>Prevention</b>              | 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 the mist or vapor. 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. |

|                                 |   |
|---------------------------------|---|
| <b>Response</b>                 | IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. 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 CENTER/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. |
| <b>Storage</b>                  | Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.  |
| <b>Disposal</b>                 | Dispose of contents/container in accordance with local/regional/national/international regulations.   |
| <b>Other hazards</b>            | None known.   |
| <b>Supplemental information</b> | 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  |

#: 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

|   |   |
|---|---|
| <b>Inhalation</b>   | 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 center immediately. |
| <b>Skin contact</b>   | 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.   |
| <b>Eye contact</b>  | 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.   |
| <b>Ingestion</b>  | Call a physician or poison control center immediately. Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Never give anything by mouth to a victim who is unconscious or is having convulsions.  |
| <b>Most important symptoms/effects, acute and delayed</b>                     | 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. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.  |
| <b>Indication of immediate medical attention and special treatment needed</b> | 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 under observation. Symptoms may be delayed.   |
| <b>General information</b>  | Take off all contaminated clothing immediately. 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

|  |  |
|--|--|
| <b>Suitable extinguishing media</b>                                  | Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO2).  |
| <b>Unsuitable extinguishing media</b>                                | Do not use water jet as an extinguisher, as this will spread the fire.   |
| <b>Specific hazards arising from the chemical</b>                    | Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed. |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire.  |
| <b>Fire fighting equipment/instructions</b>                          | In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.   |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.   |

**General fire hazards** Highly flammable liquid and vapor.

## 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 or vapor. 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.

**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. Prevent entry into waterways, sewer, basements or confined areas.

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.

**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 or vapor. Do not taste or swallow. Do not get in eyes, on skin, on clothing. 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** Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs. 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 original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers.

## 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/m <sup>3</sup> |
|                        |      | 250 ppm               |
|                        | TWA  | 262 mg/m <sup>3</sup> |
|                        |      | 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   |

**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 (typically 10 air changes per hour) 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. Suitable gloves can be recommended by the glove supplier.

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

**Respiratory protection** Chemical respirator with organic vapor cartridge.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

When using do not smoke. 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.

|   |                                |
|---|--------------------------------|
| <b>Form</b>   | Liquid.                        |
| <b>Color</b>  | Colorless to light yellow.     |
| <b>Odor</b>   | Solvent.                       |
| <b>Odor threshold</b>                               | Not available.                 |
| <b>pH</b>   | 3.5 - 8.5                      |
| <b>Melting point/freezing point</b>                 | Not available.                 |
| <b>Initial boiling point and boiling range</b>      | > 147.2 °F (> 64 °C)           |
| <b>Flash point</b>                                  | 52.0 °F (11.1 °C) Closed Cup   |
| <b>Evaporation rate</b>                             | Not available.                 |
| <b>Flammability (solid, gas)</b>                    | Not applicable.                |
| <b>Upper/lower flammability or explosive limits</b> |                                |
| <b>Explosive limit - lower (%)</b>                  | Not available.                 |
| <b>Explosive limit - upper (%)</b>                  | Not available.                 |
| <b>Vapor pressure</b>                               | Not available.                 |
| <b>Vapor density</b>                                | Not available.                 |
| <b>Relative density</b>                             | Not available.                 |
| <b>Solubility(ies)</b>                              |                                |
| <b>Solubility (water)</b>                           | Miscible.                      |
| <b>Partition coefficient (n-octanol/water)</b>      | Not available.                 |
| <b>Auto-ignition temperature</b>                    | Not available.                 |
| <b>Decomposition temperature</b>                    | Not available.                 |
| <b>Viscosity</b>                                    | 5 cSt                          |
| <b>Other information</b>                            |                                |
| <b>Density</b>                                      | 0.88 g/cm <sup>3</sup> at 25°C |
| <b>Explosive properties</b>                         | Not explosive.                 |
| <b>Oxidizing properties</b>                         | Not oxidizing.                 |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport.  |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.  |
| <b>Possibility of hazardous reactions</b> | Hazardous polymerization does not occur.   |
| <b>Conditions to avoid</b>                | Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials. |
| <b>Incompatible materials</b>             | Strong oxidizing agents. Water, moisture.  |
| <b>Hazardous decomposition products</b>   | No dangerous reaction known under conditions of normal use.  |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Toxic if inhaled. Causes damage to organs by inhalation. Prolonged inhalation may be harmful. |
| <b>Skin contact</b> | Toxic in contact with skin. Causes skin irritation.   |
| <b>Eye contact</b>  | Causes serious eye damage.  |
| <b>Ingestion</b>    | Toxic if swallowed.   |

**Symptoms related to the physical, chemical and toxicological characteristics** 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. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

### Information on toxicological effects

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

| Product   | Species  | Test Results |
|---|--|--------------|
| AEM 5700 Antimicrobial                                    |  |              |
| <b>Acute</b>  |  |              |
| <b>Dermal</b>   |  |              |
| LD50  | Rabbit   | > 7.95 g/kg  |
| <b>Inhalation</b>   |  |              |
| <i>Vapor</i>  |  |              |
| LC50  | Rat  | > 81.9 mg/l  |
| <b>Oral</b>   |  |              |
| LD50  | Rat  | 12.27 g/kg   |
| <b>Skin corrosion/irritation</b>                          | Causes skin irritation.  |              |
| <b>Serious eye damage/eye irritation</b>                  | Causes serious eye damage.   |              |
| <b>Respiratory or skin sensitization</b>                  |  |              |
| <b>Respiratory sensitization</b>                          | Not a respiratory sensitizer.  |              |
| <b>Skin sensitization</b>                                 | This product is not expected to cause skin sensitization.  |              |
| <b>Germ cell mutagenicity</b>                             | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |              |
| <b>Carcinogenicity</b>                                    | Not classifiable as to carcinogenicity to humans.  |              |
| <b>Reproductive toxicity</b>                              | This product is not expected to cause reproductive or developmental effects.                                     |              |
| <b>Specific target organ toxicity - single exposure</b>   | Causes damage to organs (central nervous system, optic nerve) by inhalation.                                     |              |
| <b>Specific target organ toxicity - repeated exposure</b> | Not classified.  |              |
| <b>Aspiration hazard</b>                                  | Not an aspiration hazard.  |              |
| <b>Chronic effects</b>                                    | Prolonged inhalation may be harmful.   |              |

## 12. Ecological information

|                                      |  |                          |
|--------------------------------------|--|--------------------------|
| <b>Ecotoxicity</b>                   | Very toxic to aquatic life with long lasting effects.  |                          |
| <b>Product</b>                       |  |                          |
| <b>Species</b>                       |  |                          |
| <b>Test Results</b>                  |  |                          |
| AEM 5700 Antimicrobial               |  |                          |
| <b>Aquatic</b>                       |  |                          |
| <i>Acute</i>                         |  |                          |
| Crustacea                            | LC50   | Daphnia                  |
|                                      |  | 0.6 - 0.85 ppm, 48 hours |
| <b>Persistence and degradability</b> | No data is available on the degradability of this product.   |                          |
| <b>Bioaccumulative potential</b>     | No data available.   |                          |
| <b>Mobility in soil</b>              | This product is miscible in water.   |                          |
| <b>Other adverse effects</b>         | The product contains volatile organic compounds which have a photochemical ozone creation potential. |                          |

## 13. Disposal considerations

|  |  |
|--|--|
| <b>Disposal instructions</b>                 | 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. |
| <b>Local disposal regulations</b>            | Dispose in accordance with all applicable regulations.   |
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Waste from residues / unused products</b> | 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.  |
| <b>Contaminated packaging</b>                | 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.   |

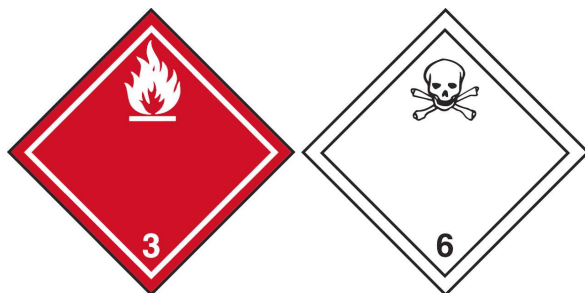
## 14. Transport information

|                                     |   |
|-------------------------------------|---|
| <b>TDG</b>                          |   |
| <b>UN number</b>                    | UN1230  |
| <b>UN proper shipping name</b>      | METHANOL SOLUTION, MARINE POLLUTANT (3-(Trimethoxysilyl) propyldimethyloctadecyl ammonium chloride) |
| <b>Transport hazard class(es)</b>   |   |
| <b>Class</b>                        | 3   |
| <b>Subsidiary risk</b>              | 6.1   |
| <b>Packing group</b>                | II  |
| <b>Environmental hazards</b>        | Yes   |
| <b>Special precautions for user</b> | Not available.  |

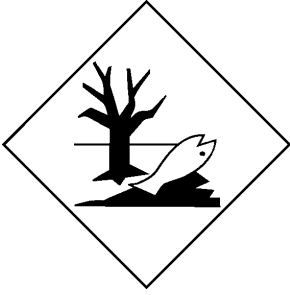
|                                     |                            |
|-------------------------------------|----------------------------|
| <b>IATA</b>                         |                            |
| <b>UN number</b>                    | UN1230                     |
| <b>UN proper shipping name</b>      | METHANOL SOLUTION          |
| <b>Transport hazard class(es)</b>   |                            |
| <b>Class</b>                        | 3                          |
| <b>Subsidiary risk</b>              | 6.1                        |
| <b>Packing group</b>                | II                         |
| <b>Environmental hazards</b>        | Yes                        |
| <b>ERG Code</b>                     | 3L                         |
| <b>Special precautions for user</b> | Not available.             |
| <b>Other information</b>            |                            |
| <b>Passenger and cargo aircraft</b> | Allowed with restrictions. |
| <b>Cargo aircraft only</b>          | Allowed with restrictions. |

|   |   |
|---|---|
| <b>IMDG</b>   |   |
| <b>UN number</b>  | UN1230  |
| <b>UN proper shipping name</b>  | METHANOL SOLUTION, MARINE POLLUTANT (3-(Trimethoxysilyl) propyldimethyloctadecyl ammonium chloride) |
| <b>Transport hazard class(es)</b>   |   |
| <b>Class</b>  | 3   |
| <b>Subsidiary risk</b>  | 6.1   |
| <b>Packing group</b>  | II  |
| <b>Environmental hazards</b>  |   |
| <b>Marine pollutant</b>   | Yes   |
| <b>EmS</b>  | F-E, S-D  |
| <b>Special precautions for user</b>   | Not available.  |
| <b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b> | Not established.  |

### IATA; IMDG; TDG



## 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

23-October-2017

### Version #

04

### Disclaimer

Aegis Environmental Management, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

### Revision information

Toxicological Information: Toxicological Data  
Transport Information: Material Transportation Information  
HazReg Data: Pacific Rim  
GHS: Classification