SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form: Mixture
Product name: KASUMIN® 2L BACTERICIDE
Other means of identification: EPA Reg. No. 66330-404
PMRA Reg. No. 30591

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: Bactericide

1.3. Details of the supplier of the safety data sheet
Arysta LifeScience North America LLC
15401 Weston Parkway, Suite 150
Cary, NC 27513 – USA

Arysta LifeScience
400 Michener Road, Unit 2
Guelph, Ontario
N1K 1E4

1.4. Emergency telephone number
Emergency number: Exposure Calls (PROSAR): +1-866-303-6952 or +1-651-603-3432 (international)
Spill Calls (CHEMTREC) (Contract # CCN1779): +1-800-424-9300 or +1-703-527-3887 (international)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
GHS classification
Repr. 1B H360
Full text of H-statements: see section 16

2.2. Label elements
GHS labelling
Hazard pictograms (GHS): GHS08

Signal word (GHS): Danger
Hazard statements (GHS): H360 - May damage fertility or the unborn child
Precautionary statements (GHS): P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective clothing, protective gloves
P308+P313 - If exposed or concerned: Get medical advice/attention
P405 - Store locked up
P501 - Dispose of contents/container to an authorised waste collection point

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS)
2.3 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)
2.3 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)
2.3 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable
### 3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>% (w/w)</th>
<th>GHS classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary alcohol ethoxylate</td>
<td>(CAS No) 84133-50-6</td>
<td>4.85 - 5</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2A, H319</td>
</tr>
<tr>
<td>Kasugamycin</td>
<td>(CAS No) 6980-18-3</td>
<td>2.3</td>
<td>Skin Irrit. 2, H315, Repr. 1B, H360</td>
</tr>
<tr>
<td>1,2-benzisothiazolone</td>
<td>(CAS No) 2634-33-5</td>
<td>0.1</td>
<td>Acute Tox. 4 (Oral), H302, Skin Irrit. 2, H315, Eye Dam. 1, H318, Skin Sens. 1B, H317, Aquatic Acute 1, H400</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

**First-aid measures general**: Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

**First-aid measures after inhalation**: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**First-aid measures after skin contact**: Wash with plenty of soap and water.

**First-aid measures after eye contact**: In case of contact, immediately flush eyes with plenty of water.

**First-aid measures after ingestion**: Rinse mouth. Get medical advice/attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

**Symptoms/injuries**: Suspected of damaging fertility.

**Symptoms/injuries after skin contact**: Repeated or prolonged contact may cause slight irritation to the skin.

**Symptoms/injuries after eye contact**: May cause slight irritation.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

**Suitable extinguishing media**: Use extinguishing media appropriate for surrounding fire.

**Unsuitable extinguishing media**: None known.

#### 5.2. Special hazards arising from the substance or mixture

**Fire hazard**: Burning produces irritating, toxic and noxious fumes.

**Reactivity**: No dangerous reactions known.

#### 5.3. Advice for firefighters

**Precautionary measures fire**: Stop leak if safe to do so. Keep upwind.

**Firefighting instructions**: Do not allow run-off from fire fighting to enter drains or water courses. Eliminate all ignition sources if safe to do so. Exercise caution when fighting any chemical fire.

**Protection during firefighting**: Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

**General measures**: Avoid all eye and skin contact and do not breathe vapour and mist.

##### 6.1.1. For non-emergency personnel

**Protective equipment**: Chemical goggles or safety glasses. Wear suitable gloves.

**Emergency procedures**: Stop leak, if possible without risk. Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

**Protective equipment**: Chemical goggles or safety glasses. Wear suitable gloves.

**Emergency procedures**: Ventilate area.

#### 6.2. Environmental precautions

Prevent dispersion.

#### 6.3. Methods and material for containment and cleaning up

For containment: Do not allow minor leaks or spills to accumulate on walking surfaces.
Methods for cleaning up: Take up in non-combustible absorbent material and shove into container for disposal.

6.4. Reference to other sections
Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapour and mist. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use.

Hygiene measures: Always wash your hands immediately after handling this product, and once again before leaving the workplace. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Keep container tightly closed.
Incompatible materials: Water-reactive.
Heat and ignition sources: Keep away from heat, sparks and flame.
Prohibitions on mixed storage: Incompatible materials.
Storage area: Store in dry, cool, well-ventilated area.
Special rules on packaging: Store in a closed container. Unbreakable packaging.

7.3. Specific end use(s)
Bactericide.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>KASUMIN® 2L BACTERICIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
</tr>
<tr>
<td>OSHA</td>
</tr>
<tr>
<td>Kasugamycin (6980-18-3)</td>
</tr>
<tr>
<td>ACGIH</td>
</tr>
<tr>
<td>OSHA</td>
</tr>
<tr>
<td>Secondary alcohol ethoxylate (84133-50-6)</td>
</tr>
<tr>
<td>ACGIH</td>
</tr>
<tr>
<td>OSHA</td>
</tr>
<tr>
<td>1,2-benzisothiazolone (2634-33-5)</td>
</tr>
<tr>
<td>ACGIH</td>
</tr>
<tr>
<td>OSHA</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls: Avoid creating mist or spray. Avoid splashing. Use only outdoors or in a well-ventilated area.
Personal protective equipment: Avoid all unnecessary exposure.
Hand protection: Use rubber gloves.
Eye protection: In case of splashing or aerosol production: protective goggles.
Respiratory protection: In case of inadequate ventilation wear respiratory protection. Wear appropriate mask.
Other information: Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Blue Green</td>
</tr>
<tr>
<td>Odour</td>
<td>Faint characteristic</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>4.02 (1% solution) @ 25 °C</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
</tbody>
</table>
KASUMIN® 2L BACTERICIDE
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according to Canada Hazardous Product Regulation (HPR)

Freezing point: No data available
Boiling point: No data available
Flash point: No data available
Relative evaporation rate (butyl acetate=1): No data available
Flammability (solid, gas): No data available
Explosive limits: No data available
Explosive properties: No data available
Oxidising properties: No data available
Vapour pressure: No data available
Relative density: No data available
Relative vapour density at 20 °C: No data available
Density: 1.0099 g/ml @ 25 °C
Solubility: Water: Solubility in water of component(s) of the mixture:
• Kasugamycin: 228 g/l @ 25 °C
Log Pow: No data available
Log Kow: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: 6 mPa.s @ 25 °C

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No dangerous reactions known.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Extremely high or low temperatures.

10.5. Incompatible materials
Water reactive.

10.6. Hazardous decomposition products
Burning produces irritating, toxic and noxious fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Likely routes of exposure: Inhalation; Skin and eye contact
Acute toxicity: Not classified

KASUMIN® 2L BACTERICIDE
LD50 oral rat > 5000 mg/l
LD50 dermal rat > 10000 mg/kg
LC50 inhalation rat (mg/l) > 2.07 mg/l/4h

Secondary alcohol ethoxylate (84133-50-6)
LD50 oral rat > 3000 mg/kg
LD50 dermal rabbit > 2000 mg/kg

1,2-benzisothiazolone (2634-33-5)
ATE US (oral) 500.000 mg/kg bodyweight

06/17/2015 EN (English) SDS ID: ALS_1505012 4/8
KASUMIN® 2L BACTERICIDE
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according to Canada Hazardous Product Regulation (HPR)

<table>
<thead>
<tr>
<th>Skin corrosion/irritation</th>
<th>Not classified (Slightly irritating to skin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified (Slightly irritating to eyes.)</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified (No sensitizing reaction was observed for guinea pigs)</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Structured chromosome aberration: Negative (active ingredient)</td>
</tr>
<tr>
<td></td>
<td>Ames Test: Negative (active ingredient)</td>
</tr>
<tr>
<td></td>
<td>Unscheduled DNA synthesis: Negative (active ingredient)</td>
</tr>
<tr>
<td></td>
<td>V/79HPRT Forward mutation assay: Negative (active ingredient)</td>
</tr>
<tr>
<td></td>
<td>Micronucleus test: Negative (active ingredient)</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Kasugamycin Technical may impair male fertility following chronic oral exposure</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

**KASUMIN® 2L BACTERICIDE**

<table>
<thead>
<tr>
<th>NOAEL (oral, rat, 90 days)</th>
<th>300 mg/kg bodyweight/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Symptoms/injuries after skin contact</td>
<td>Repeated or prolonged contact may cause slight irritation to the skin.</td>
</tr>
<tr>
<td>Symptoms/injuries after eye contact</td>
<td>May cause slight irritation.</td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological information**

12.1. **Toxicity**

**Kasugamycin (6980-18-3)**

<table>
<thead>
<tr>
<th>LC50 fish 1</th>
<th>&gt; 1000 mg/kg 96 h Rainbow trout, Bluegill, Guppy</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 Daphnia 1</td>
<td>340 mg/l 48 h</td>
</tr>
</tbody>
</table>

**Secondary alcohol ethoxylate (84133-50-6)**

<table>
<thead>
<tr>
<th>LC50 fish 1</th>
<th>3.4 - 4.9 mg/l Fathead minnow</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 Daphnia 1</td>
<td>4.01 mg/l 48 h</td>
</tr>
</tbody>
</table>

12.2. **Persistence and degradability**

**Secondary alcohol ethoxylate (84133-50-6)**

<table>
<thead>
<tr>
<th>Persistence and degradability</th>
<th>Readily biodegradable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodegradation</td>
<td>&gt; 60 % 28 d</td>
</tr>
</tbody>
</table>

12.3. **Bioaccumulative potential**

**Kasugamycin (6980-18-3)**

<table>
<thead>
<tr>
<th>Bioconcentration factor (BCF REACH)</th>
<th>3 (estimated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>&lt;-1.96 @ 23 °C</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Not expected to bioaccumulate.</td>
</tr>
</tbody>
</table>

12.4. **Mobility in soil**

No additional information available

12.5. **Other adverse effects**

Effect on the global warming : No known ecological damage caused by this product.

**SECTION 13: Disposal considerations**

13.1. **Waste treatment methods**

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Additional information : Container contents should be completely used and containers should be emptied prior to discard.
### SECTION 14: Transport information

**Department of Transportation (DOT)**
In accordance with DOT
Not considered a dangerous good for transport regulations

**Additional information**
Other information: No supplementary information available.

**ADR**
No additional information available

**Transport by sea**
No additional information available

**Air transport**
No additional information available

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

**Kasugamycin (6980-18-3)**
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

**1,2-benzisothiazolone (2634-33-5)**
Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

**CANADA**

**Kasugamycin (6980-18-3)**
Not listed on the Canadian DSL (Domestic Substances List) inventory.

**1,2-benzisothiazolone (2634-33-5)**
Listed on the Canadian DSL (Domestic Substances List) inventory.

**EU-Regulations**

**1,2-benzisothiazolone (2634-33-5)**
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**
Repr. 1B H360
Full text of H-statements: see section 16

#### National regulations

**Kasugamycin (6980-18-3)**
Polymer exempt from EINECS.
Not listed on the Canadian Non-Domestic Substances List (NDSL).

**1,2-benzisothiazolone (2634-33-5)**
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on Taiwan National Chemical Inventory
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)

#### 15.3. US State regulations

No additional information available

#### 15.4. US EPA – FIFRA Regulations

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

**Signal word (FIFRA)**: Caution.
KASUMIN® 2L BACTERICIDE
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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canada Hazardous Product Regulation (HPR)

Hazard statements (FIFRA) : Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Environmental hazards : For terrestrial uses: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash waters.

SECTION 16: Other information

Indication of changes : GHS classification information.
Revision date : 06/17/2015
Data sources : ACGIH (American Conference of Governement Industrial Hygienists).

Abbreviations and acronyms : ATE: Acute Toxicity Estimate.
CAS (Chemical Abstracts Service) number.
CLP: Classification, Labelling, Packaging.
EC50: Environmental Concentration associated with a response by 50% of the test population.
LD50: Lethal Dose for 50% of the test population.
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
NOEC: No Observable Effect Concentration.
OSHA: Occupational Safety & Health Administration.
TSCA: Toxic Substances Control Act.

Full text of H-statements:

<table>
<thead>
<tr>
<th>Acute Tox. 4 (Oral)</th>
<th>Acute toxicity (oral), Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Acute 1</td>
<td>Hazardous to the aquatic environment — Acute Hazard, Category 1</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation, Category 1</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation, Category 2A</td>
</tr>
<tr>
<td>Repr. 1B</td>
<td>Reproductive toxicity, Category 1B</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation, Category 2</td>
</tr>
<tr>
<td>Skin Sens. 1B</td>
<td>Sensitisation — Skin, category 1B</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H360</td>
<td>May damage fertility or the unborn child</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
</tbody>
</table>

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard : 1 - Must be preheated before ignition can occur.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.