SAFETY DATA SHEET

Product Identifier: Advanta™ Immuno-Oncology Gene Expression Reagent Kit - 2 IFC
Catalog ID numbers: 101-6081, 101-6082, 101-6083, 101-6084
SDS ID: 101-6423

SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Contact information

General
Fluidigm Corporation
7000 Shoreline Court Suite 100, South San Francisco, CA 94080
Main (U.S.): +1 (650) 266-6000
E-mail: techsupport@fluidigm.com

Emergency telephone number
+ (650) 266-6100 (outside US)
+ (866) 358-4354 (toll free)

Product identifier
Advanta™ Immuno-Oncology Gene Expression Reagent Kit - 2 IFC

Synonyms
None identified

Trade names
None identified

Chemical family
Mixture – bovine serum albumin or formamide

Relevant identified uses of the substance or mixture and uses advised against
For Research Use Only. Not for use of diagnostic procedures.

Note
This SDS is written to address potential health and safety issues associated with the handling of the formulated product.

SECTION 2 - HAZARDS IDENTIFICATION

This product contains ten (10) parts. The following provides the hazard classification for each part.

Part 1: 20x GE Sample Loading Reagent (Part #: 100-6311)

Classification of the substance or mixture
Globally Harmonized System [GHS]
Skin sensitizer - Category 1. Respiratory sensitizer - Category 1.

Label elements
GHS hazard pictogram

GHS signal word
Danger

GHS hazard statements
H317 - May cause allergic skin reaction. H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

GHS precautionary statements
P261 - Avoid breathing mist or vapor. P272 - Contaminated work clothing should not be allowed out of the workplace. P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention. P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. P362 + P364 - Take off contaminated clothing and wash it before reuse. P501 - Dispose of contents/container to location in accordance with local/regional/national/international regulations.

Other hazards
Mixture - contains bovine serum albumin. May cause respiratory sensitization. Part/mixture not yet fully tested.
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Note
This mixture is classified as hazardous under GHS as implemented by Regulation EC No 1272/2008 (EU CLP), WHMIS 2015 (Health Canada), and Hazard Communication Standard No. 1910.1200 (US OSHA). The pharmacological, toxicological, and ecological properties of this part/mixture have not been fully characterized.

Part 2: Rgt Kit, Advanta™ Immuno-Oncology Gene Expression Assay - Panel A (Part #: 101-6145)
Part 3: Rgt Kit, Advanta™ Immuno-Oncology Gene Expression Assay - Panel B (Part #: 101-6146)

Classification of the substance or mixture

Globally Harmonized System [GHS]

Reproductive Toxicity - Category 1B.

Label elements

GHS hazard pictogram

GHS signal word

Danger

GHS hazard statements

H360FD - May damage fertility. May damage the unborn child.

GHS precautionary statements

P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P280 - Wear protective gloves/eye protection/face protection. P308 + P313 - IF exposed or concerned: get medical advice/attention. P405 - Store locked up. P501 - Dispose of contents/container to location in accordance with local/regional/national/international regulations.

Other hazards

Mixture - contains formamide. May cause irritation. Part/mixture not yet fully tested.

Note
This mixture is classified as hazardous under GHS as implemented by Regulation EC No 1272/2008 (EU CLP), WHMIS 2015 (Health Canada), and Hazard Communication Standard No. 1910.1200 (US OSHA). The pharmacological, toxicological, and ecological properties of this part/mixture have not been fully characterized.

Part description and number

<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
<th>GHS Hazard Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 4</td>
<td>Tube, 2X Assay Loading Reagent (85000736)</td>
<td>None required.</td>
</tr>
<tr>
<td>Part 5</td>
<td>Tube, PreAmp Master Mix (100-5744)</td>
<td>None required.</td>
</tr>
<tr>
<td>Part 6</td>
<td>Tube, PCR Water (100-5941)</td>
<td>None required.</td>
</tr>
<tr>
<td>Part 7</td>
<td>Tube, Reverse Transcription Master Mix (100-6297)</td>
<td>None required.</td>
</tr>
<tr>
<td>Part 8</td>
<td>Bottle, DNA Dilution Reagent (100-9167)</td>
<td>None required.</td>
</tr>
<tr>
<td>Part 9</td>
<td>Tube, Gene Expression Master Mix (2x) (101-5852)</td>
<td>None required.</td>
</tr>
<tr>
<td>Part 10</td>
<td>96.96 Control Line Fluid Kit – 2 IFC (101-6334)</td>
<td>None required.</td>
</tr>
</tbody>
</table>

Other hazards
Parts of the kit may cause irritation. Part/mixture not yet fully tested.

Note
Parts 4-10 are not classified as hazardous under GHS as implemented by Regulation EC No 1272/2008 (EU CLP), WHMIS 2015 (Health Canada), and Hazard Communication Standard No. 1910.1200 (US OSHA). The pharmacological, toxicological, and ecological properties of this part/mixture have not been fully characterized.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>EINECS/ELINCS#</th>
<th>Amount</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bovine serum albumin</td>
<td>9048-46-8</td>
<td>N/A</td>
<td>5-10%</td>
<td>SS1: H317; R51: H334</td>
</tr>
</tbody>
</table>

Note
Bovine serum albumin is considered hazardous. The remaining components are non-hazardous and/or present at amounts below reportable limits. See Section 16 for full text of GHS classifications.
SAFETY DATA SHEET

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Catalog ID numbers: 101-6081, 101-6082, 101-6083, 101-6084
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Part 2: Rgt Kit, Advanta™ Immuno-Oncology Gene Expression Assay - Panel A (Part #: 101-6145)
Part 3: Rgt Kit, Advanta™ Immuno-Oncology Gene Expression Assay - Panel A (Part #: 101-6146)

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>EINECS/ELINCS#</th>
<th>Amount</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formamide</td>
<td>75-12-7</td>
<td>200-842-0</td>
<td>≤0.5%</td>
<td>Carc2:H351; RT1B:H360FD; STOT-R2:H373</td>
</tr>
</tbody>
</table>

Note
Formamide is considered hazardous. The remaining components are non-hazardous and/or present at amounts below reportable limits. See Section 16 for full text of GHS classifications.

Part 4-10

<table>
<thead>
<tr>
<th>Tube Description</th>
<th>CAS #</th>
<th>EINECS/ELINCS#</th>
<th>Amount</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 4: Tube, 2X Assay Loading Reagent(Part #: 85000736)</td>
<td>N/A (mixture)</td>
<td>N/A</td>
<td>~100%</td>
<td>Not classified</td>
</tr>
<tr>
<td>Part 5: Tube, PreAmp Master Mix (Part #: 100-5744)</td>
<td>N/A (mixture)</td>
<td>N/A</td>
<td>~100%</td>
<td>Not classified</td>
</tr>
<tr>
<td>Part 6: Tube, PCR Water (Part #: 100-5941)</td>
<td>N/A (mixture)</td>
<td>N/A</td>
<td>~100%</td>
<td>Not classified</td>
</tr>
<tr>
<td>Part 7: Tube, Reverse Transcription Master Mix (Part #: 100-6297)</td>
<td>N/A (mixture)</td>
<td>N/A</td>
<td>~100%</td>
<td>Not classified</td>
</tr>
<tr>
<td>Part 8: Bottle, DNA Dilution Reagent (Part #: 100-9167)</td>
<td>N/A (mixture)</td>
<td>N/A</td>
<td>~100%</td>
<td>Not classified</td>
</tr>
<tr>
<td>Part 9: Tube, Gene Expression Master Mix (2x) (Part #: 101-5852)</td>
<td>N/A (mixture)</td>
<td>N/A</td>
<td>~100%</td>
<td>Not classified</td>
</tr>
<tr>
<td>Part 10: 96.96 Control Line Fluid Kit - 2 IFC (Part #: 101-6334)</td>
<td>N/A (mixture)</td>
<td>N/A</td>
<td>~100%</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Note
The components within Parts 4-10 are non-hazardous and/or present at amounts below reportable limits.

SECTION 4 - FIRST AID MEASURES

Description of first aid measures

Immediate Medical Attention Needed
Yes

Eye Contact
If easy to do, remove contact lenses, if worn. Immediately flush eyes with copious quantities of water for at least 15 minutes. If irritation occurs or persists, notify medical personnel and supervisor.

Skin Contact
Wash exposed area with soap and water and remove contaminated clothing/shoes. If irritation occurs or persists, notify medical personnel and supervisor.

Inhalation
Immediately move exposed subject to fresh air. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Immediately notify medical personnel and supervisor.

Ingestion
Do not induce vomiting unless directed by medical personnel. Do not give anything to drink unless directed by medical personnel. Never give anything by mouth to an unconscious person. Notify medical personnel and supervisor.

Protection of first aid responders
See Section 8 for Exposure Controls/Personal Protection recommendations.

Most important symptoms and effects, both acute and delayed
See Sections 2 and 11.
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Indication of immediate medical attention and special treatment needed, if necessary

Certain parts of the kit contain low levels of bovine serum albumin or formamide. Medical conditions aggravated by exposure: None known or reported. Treat symptomatically and supportively.

SECTION 5 - FIREFIGHTING MEASURES

Extinguishing media
Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate for surrounding fire and materials.

Specific hazards arising from the substance or mixture
No information identified. May emit carbon monoxide, carbon dioxide, oxides of nitrogen and sulfur, metal-containing compounds, and other nitrogen-, sulfur- or fluorine-containing compounds.

Flammability/Explosivity
No information identified.

Advice for firefighters
Wear full protective clothing and a self-contained breathing apparatus with a full facepiece operated in the pressure demand or other positive pressure mode. Decontaminate all equipment after use.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
If product is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment (see Section 8). Area should be adequately ventilated. Do not breathe mist/vapors/spray.

Environmental precautions
Do not empty into drains. Avoid release to the environment.

Methods and material for containment and cleaning up
If vials are crushed or broken, DO NOT CAUSE MATERIAL TO BECOME AIRBORNE. For small spills, soak up material with absorbent, e.g., paper towels. For large spills, cordon off spill area and minimize the spreading of spilled material. Soak up material with absorbent. Collect spilled material, absorbent, and rinse water into suitable containers for proper disposal in accordance with applicable waste disposal regulations (see Section 13). Decontaminate the area twice.

Reference to other sections
See Sections 8 and 13 for more information.

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling
Avoid breathing dust/mist/vapor/spray. Do not permit eating/drinking/smoking near this material.

Conditions for safe storage including any incompatibilities
Store in a well-ventilated area; keep container upright and tightly closed.

Specific end use(s)
No information identified.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Note
Dispose of broken tubes/syringes in a sharps container.

Control Parameters/Occupational Exposure Limit Values

<table>
<thead>
<tr>
<th>Compound</th>
<th>Issuer</th>
<th>Type</th>
<th>OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bovine serum albumin</td>
<td>ACGIH, British</td>
<td>TWA</td>
<td>10 ppm (15 mg/m³) skin</td>
</tr>
<tr>
<td>Formamide</td>
<td>Columbia, Ontario</td>
<td>REL</td>
<td>10 ppm (15 mg/m³) skin</td>
</tr>
</tbody>
</table>

Fluidigm Corporation
Issue date: 3/7/17
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**Exposure/Engineering controls**

None required for normal handling of packaged product. Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/or enclosure at aerosol/ mist-generating points. Use engineered local exhaust ventilation (LEV) and/or enclosure for procedures where aerosolization may occur such as opened transfers, pumping, and spraying. Solutions can be handled outside a containment system or without LEV during procedures with no potential for aerosolization. All containers for solutions and slurries must be covered while being transferred.

**Respiratory protection**

None required for normal handling of packaged product. If vials are crushed or broken: Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. At a minimum, a tight-fitting full-face respirator with HEPA filters is required when performing aerosol generating operations. A powered air-purifying respirator (PAPR) with HEPA filters and head cover is required for spill cleanup.

**Hand protection**

Wear nitrile or other impervious gloves if skin contact is possible. When the material is diluted in an organic solvent, wear gloves that provide protection against the solvent.

**Skin protection**

Wear appropriate gloves, lab coat, or other protective overgarment if skin contact is likely. Base the choice of skin protection on the job activity, potential for skin contact and solvents and reagents in use.

**Eye/face protection**

Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

**Environmental Exposure Controls**

Avoid release to the environment and operate within closed systems wherever practicable. Air and liquid emissions should be directed to appropriate pollution control devices. In case of spill, do not release to drains. Implement appropriate and effective emergency response procedures to prevent release or spread of contamination and to prevent inadvertent contact by personnel.

**Other protective measures**

Wash hands in the event of contact with this substance, especially before eating, drinking or smoking. Protective equipment is not to be worn outside the work area (e.g., in common areas or out-of-doors).

---

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Liquids (supplied as individually packaged reagents)</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>No information identified.</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>No information identified.</td>
</tr>
<tr>
<td><strong>Odor threshold</strong></td>
<td>No information identified.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>No information identified.</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>No information identified.</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>No information identified.</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>No information identified.</td>
</tr>
</tbody>
</table>
Evaporation rate  No information identified.
Flammability (solid, gas)  No information identified.
Upper/lower flammability or explosive limits  No information identified.
Vapor pressure  No information identified
Vapor density  No information identified.
Relative density  No information identified.
Water solubility  No information identified.
Solvent solubility  No information identified.
Partition coefficient \((n\text{-octanol/water})\)  No information identified.
Auto-ignition temperature  No information identified.
Decomposition temperature  No information identified.
Viscosity  No information identified.
Explosive properties  No information identified.
Oxidizing properties  No information identified.
Other information
Molecular weight  Not applicable (Mixture)
Molecular formula  Not applicable (Mixture)

SECTION 10 - STABILITY AND REACTIVITY

Reactivity  No information identified.
Chemical stability  Stable when stored as recommended.
Possibility of hazardous reactions  No information identified.
Conditions to avoid  No information identified.
Incompatible materials  No information identified.
Hazardous decomposition products  No information identified.

SECTION 11 - TOXICOLOGICAL INFORMATION

Note  No data were identified for the product/mixture. The following information is for the individual hazardous ingredients contained in some parts of the kit.

Information on toxicological effects

Route of entry  May be absorbed by inhalation, skin contact and ingestion.

Acute toxicity

<table>
<thead>
<tr>
<th>Compound</th>
<th>Type</th>
<th>Route</th>
<th>Species</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bovine serum albumin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formamide</td>
<td>LD_{50} Oral</td>
<td>Rat</td>
<td>4000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Formamide</td>
<td>LD_{50} Oral</td>
<td>Mouse</td>
<td>2450 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Formamide</td>
<td>LD_{50} IV</td>
<td>Rat</td>
<td>5600 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>
Formamide was not irritating to rabbit skin and caused a mild, temporary eye irritation.

As bovine serum albumin (BSA) is derived from animal (foreign) protein, there is potential for the material to cause an allergic response in humans. Occupational exposure to BSA has caused some cases of allergic sensitization in workers handling this material.

In a 3-month oral study in rats with formamide, dose-related increases in hematocrit values, hemoglobin concentrations, and red blood cell counts were reported at 10-160 mg/kg, 5 days/week. The incidences of degeneration of the germinal epithelium of the testes and epididymis were significantly increased in 160 mg/kg males. In a 3-month oral study in mice with formamide, no adverse effects were reported at any dose up to a maximum of 160 mg/kg, 5 days per week.

In a 2-week rat inhalation study with formamide, histopathological changes in the kidneys, and reduced platelet counts were seen at 1500 ppm, 6 hours/day, 5 day/week (highest dose). Rats at 500 ppm showed reduced platelet counts only. The no-observed-adverse-effect concentration (NOAEC) was 100 ppm (~0.19 mg/kg).

Formamide was administered orally to pregnant rats in two studies during gestation days (GD) 6-19. In the first study, reduced fetal body weights were reported at ≥125 mg/kg/day, with maternal toxicity at ≥250 mg/kg/day. The developmental and maternal NOAELs were 62 and 125 mg/kg/day, respectively. In the second study, embryofetal malformations and/or variations, increased resorptions and fetal loss, and reduced litter sizes were reported at ≥100 mg/kg/day, with maternal toxicity at 200 mg/kg/day. The developmental and maternal NOAELs were 50 and 100 mg/kg/day, respectively.

Formamide was negative for mutagenicity in an Ames assay with and without metabolic activation. In vivo, an increased incidence of micronuclei was reported in mice at high doses (≥900 mg/kg). Overall, the weight of evidence suggests a low potential for genotoxicity.

In a 2-year study in mice with formamide, liver hemangiosarcoma was reported at oral doses ≥40 mg/kg/day. At 80 mg/kg/day, increased incidences of benign and malignant liver tumors were reported. No carcinogenic effects were observed in a 2-year rat study at oral doses up to a maximum of 80 mg/kg/day. The ingredients in this product/mixture are not listed by NTP, IARC, ACGIH or OSHA as a carcinogen.

No data available.

See Section 2 - "Other hazards"

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**Irritation/Corrosion**

Formamide was not irritating to rabbit skin and caused a mild, temporary eye irritation.

**Sensitization**

As bovine serum albumin (BSA) is derived from animal (foreign) protein, there is potential for the material to cause an allergic response in humans. Occupational exposure to BSA has caused some cases of allergic sensitization in workers handling this material.

**STOT-single exposure**

No studies identified.

**STOT-repeated exposure/Repeat-dose toxicity**

In a 3-month oral study in rats with formamide, dose-related increases in hematocrit values, hemoglobin concentrations, and red blood cell counts were reported at 10-160 mg/kg, 5 days/week. The incidences of degeneration of the germinal epithelium of the testes and epididymis were significantly increased in 160 mg/kg males. In a 3-month oral study in mice with formamide, no adverse effects were reported at any dose up to a maximum of 160 mg/kg, 5 days per week.

In a 2-week rat inhalation study with formamide, histopathological changes in the kidneys, and reduced platelet counts were seen at 1500 ppm, 6 hours/day, 5 day/week (highest dose). Rats at 500 ppm showed reduced platelet counts only. The no-observed-adverse-effect concentration (NOAEC) was 100 ppm (~0.19 mg/kg).

In a 2-generation oral study in mice with formamide, dietary doses of 750 ppm (~200 mg/kg/day) decreased female fertility across several generations. The reported NOAELs in female and males were ~100 and ~200 mg/kg/day, respectively.

**Reproductive toxicity**

Formamide was administered orally to pregnant rats in two studies during gestation days (GD) 6-19. In the first study, reduced fetal body weights were reported at ≥125 mg/kg/day, with maternal toxicity at ≥250 mg/kg/day. The developmental and maternal NOAELs were 62 and 125 mg/kg/day, respectively. In the second study, embryofetal malformations and/or variations, increased resorptions and fetal loss, and reduced litter sizes were reported at ≥100 mg/kg/day, with maternal toxicity at 200 mg/kg/day. The developmental and maternal NOAELs were 50 and 100 mg/kg/day, respectively.

**Genotoxicity**

Formamide was negative for mutagenicity in an Ames assay with and without metabolic activation. In vivo, an increased incidence of micronuclei was reported in mice at high doses (≥900 mg/kg). Overall, the weight of evidence suggests a low potential for genotoxicity.

**Carcinogenicity**

In a 2-year study in mice with formamide, liver hemangiosarcoma was reported at oral doses ≥40 mg/kg/day. At 80 mg/kg/day, increased incidences of benign and malignant liver tumors were reported. No carcinogenic effects were observed in a 2-year rat study at oral doses up to a maximum of 80 mg/kg/day. The ingredients in this product/mixture are not listed by NTP, IARC, ACGIH or OSHA as a carcinogen.

**Aspiration hazard**

No data available.

**Human health data**

See Section 2 - "Other hazards"

---

**SECTION 12 - ECOLOGICAL INFORMATION**

**Toxicity**

<table>
<thead>
<tr>
<th>Compound</th>
<th>Type</th>
<th>Species</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bovine serum albumin</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Formamide</td>
<td>LD_{50}</td>
<td>IV</td>
<td>≥100 mg/kg</td>
</tr>
</tbody>
</table>

**Persistence and Degradability**

No data identified.

**Bioaccumulative potential**

No data identified.

**Mobility in soil**

No data identified.
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Results of PBT and vPvB assessment
Not performed.

Other adverse effects
No data identified.

Note
The environmental characteristics of this product/mixture have not been fully investigated. The above data are for the active ingredient and/or any other ingredient(s) where applicable. Releases to the environment should be avoided.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste treatment methods
Dispose of wastes in accordance to prescribed federal, state, and local guidelines, e.g., appropriately permitted chemical waste incinerator. Do not send down the drain or flush down the toilet. All wastes containing the material should be properly labeled. Rinse waters resulting from spill cleanups should be discharged in an environmentally safe manner, e.g., appropriately permitted municipal or on-site wastewater treatment facility.

SECTION 14 - TRANSPORT INFORMATION

Transport
Based on the available data, this product/mixture is not regulated as a hazardous material/ dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG.

UN number
None assigned.

UN proper shipping name
None assigned.

Transport hazard classes and packing group
None assigned.

Environmental hazards
Based on the available data, this product/mixture is not regulated as an environmental hazard or a marine pollutant.

Special precautions for users
No special precautions needed. Avoid release to the environment.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

SECTION 15 - REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
This SDS generally complies with the requirements listed under current guidelines in the US, EU and Canada. Consult your local or regional authorities for more information.

Chemical safety assessment
Not conducted.

TSCA status
Formamide is listed. The remaining components of this product/mixture are not listed.

SARA section 313
Not listed.

California proposition 65
Formamide is considered, but not listed. The remaining components of this product/mixture are not listed.

Component Analysis – State
Formamide is listed as hazardous in CA, HI, MA, MI, MN, NJ, PA, RI, VT, and WA. The remaining components of this product/mixture are not listed.

Component Analysis – Chemical Inventory
Bovine serum albumin and formamide are listed in the chemical inventory of the following countries: Australia, Canada, China, EU, New Zealand, and the Philippines.

Additional information
No other information identified.
### SECTION 16 - OTHER INFORMATION

<table>
<thead>
<tr>
<th>LFPA Ratings</th>
<th>Bovine serum albumin</th>
<th>Health: 1</th>
<th>Fire: 0</th>
<th>Reactivity: 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formamide</td>
<td></td>
<td>Health: 2</td>
<td>Fire: 1</td>
<td>Reactivity: 0</td>
</tr>
</tbody>
</table>

**Full text of H phrases and GHS classifications**

- SS1 - Skin sensitizer Category 1. H317 – May cause an allergic skin sensitization.
- RS1 - Respiratory Sensitizer Category 1. H334 – May cause allergic or asthmatic symptoms or breathing difficulty if inhaled.
- Carc2 - Carcinogenicity Category 2. H351 - Suspected of causing cancer.
- RT1B - Reproductive toxicity Category 1B. H360FD - May damage fertility. May damage the unborn child.
- STOT-R2 - Specific Target Organ Toxicity Following Repeated Exposure Category 2. H373 - May cause damage to organs through prolonged or repeated exposure.

**Sources of data**

- Information from published literature and internal company data.

**Abbreviations**

- ACGIH - American Conference of Governmental Industrial Hygienists
- ADR/RID - European Agreement Concerning the International Carriage of Dangerous Goods by Road/Rail
- AIHA - American Industrial Hygiene Association
- CA – California
- CAS# - Chemical Abstract Services Number
- CLP - Classification, Labelling, and Packaging of Substances and Mixtures
- DNEL - Derived No Effect Level
- DOT - Department of Transportation
- EINECS - European Inventory of New and Existing Chemical Substances
- ELINCS - European List of Notified Chemical Substances
- EU - European Union
- GHS - Globally Harmonized System of Classification and Labeling of Chemicals
- HI – Hawaii
- IARC - International Agency for Research on Cancer
- IDLH - Immediately Dangerous to Life or Health
- IATA - International Air Transport Association
- IMDG - International Maritime Dangerous Goods
- LOEL - Lowest Observed Effect Level
- LOAEL - Lowest Observed Adverse Effect Level
- MA – Massachusetts
- MN – Minnesota
- NJ – New Jersey
- NIOSH - The National Institute for Occupational Safety and Health
- NOEL - No Observed Effect Level
- NOAEL - No Observed Adverse Effect Level
- NTP - National Toxicology Program
- OEL - Occupational Exposure Limit
- OSHA - Occupational Safety and Health Administration
- PA – Pennsylvania
- PNEC - Predicted No Effect Concentration
- RI – Rhode Island
- SARA - Superfund Amendments and Reauthorization Act
- STEL - Short Term Exposure Limit
- TDG - Transportation of Dangerous Goods
- TSCA - Toxic Substances Control Act
- TWA - Time Weighted Average
- VT – Vermont
- WA – Washington
- WHMIS - Workplace Hazardous Materials Information System

**Issue Date**

- 3/7/17

**Revisions**

- This is the first version of this SDS.

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