SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : SOLITAIRE

Other means of identification : Not applicable

Recommended use : Manual Warewashing Detergent

Restrictions on use : Reserved for industrial and professional use.

Product dilution information : 0.03 % - 0.08 %

Company : Ecolab Inc.
370 N. Wabasha Street
St. Paul, Minnesota USA 55102
1-800-352-5326

Emergency health information : 1-800-328-0026 (US/Canada), 1-651-222-5352 (outside US)

Issuing date : 02/15/2016

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Product AS SOLD
Skin irritation : Category 2
Eye irritation : Category 2B

Product AT USE DILUTION
Not a hazardous substance or mixture.

GHS label elements

Product AS SOLD
Hazard pictograms :

Signal Word : Warning

Hazard Statements : Causes skin and eye irritation.

Precautionary Statements :
Prevention: Wash skin thoroughly after handling. Wear protective gloves.
Response: IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/ attention. If eye irritation persists: Get medical advice/ attention. Take off contaminated clothing and wash before reuse.

Product AT USE DILUTION
Precautionary Statements :
Prevention: Wash hands thoroughly after handling.
Response:
SAFETY DATA SHEET

SOLITAIRE

Get medical advice/attention if you feel unwell.

Storage:
Store in accordance with local regulations.

Product AS SOLD
Other hazards: None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Product AS SOLD
Pure substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium dodecylbenzene sulfonate</td>
<td>25155-30-0</td>
<td>30 - 60</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>25322-68-3</td>
<td>10 - 30</td>
</tr>
<tr>
<td>dodecanamide, n-(2-hydroxyethyl)-</td>
<td>142-78-9</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Sodium poly(oxyethylene) dodecyl ether sulfate</td>
<td>68585-34-2</td>
<td>5 - 10</td>
</tr>
<tr>
<td>Alkylamineoxides</td>
<td>68155-09-9</td>
<td>5 - 10</td>
</tr>
<tr>
<td>acetic acid, sodium salt</td>
<td>127-09-3</td>
<td>1 - 5</td>
</tr>
<tr>
<td>ethanol</td>
<td>64-17-5</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

Product AT USE DILUTION
No hazardous ingredients

SECTION 4. FIRST AID MEASURES

Product AS SOLD
In case of eye contact: Rinse with plenty of water.
In case of skin contact: Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Get medical attention if irritation develops and persists.
If swallowed: Rinse mouth. Get medical attention if symptoms occur.
If inhaled: Get medical attention if symptoms occur.
Protection of first-aiders: No special precautions are necessary for first aid responders.
Notes to physician: Treat symptomatically.
Most important symptoms and effects, both acute and delayed: See Section 11 for more detailed information on health effects and symptoms.

Product AT USE DILUTION
In case of eye contact: Rinse with plenty of water.
In case of skin contact: Rinse with plenty of water.
If swallowed: Rinse mouth. Get medical attention if symptoms occur.
If inhaled: Get medical attention if symptoms occur.

SECTION 5. FIRE-FIGHTING MEASURES
<table>
<thead>
<tr>
<th>SAFETY DATA SHEET</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLITAIRE</td>
</tr>
</tbody>
</table>

**Product AS SOLD**

**Suitable extinguishing media**: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**: None known.

**Specific hazards during fire fighting**: Not flammable or combustible.

**Hazardous combustion products**: Decomposition products may include the following materials:
- Carbon oxides
- Nitrogen oxides (NOx)
- Sulfur oxides
- Oxides of phosphorus

**Special protective equipment for fire-fighters**: Use personal protective equipment.

**Specific extinguishing methods**: Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

**Product AS SOLD**

**Personal precautions, protective equipment and emergency procedures**: Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

**Environmental precautions**: Do not allow contact with soil, surface or ground water.

**Methods and materials for containment and cleaning up**: Sweep up and shovel into suitable containers for disposal.

**Product AT USE DILUTION**

**Personal precautions, protective equipment and emergency procedures**: Refer to protective measures listed in sections 7 and 8.

**Environmental precautions**: No special environmental precautions required.

**Methods and materials for containment and cleaning up**: Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

**SECTION 7. HANDLING AND STORAGE**

**Product AS SOLD**

**Advice on safe handling**: Avoid contact with skin and eyes. Wash hands thoroughly after handling.

**Conditions for safe storage**: Keep out of reach of children. Store in suitable labeled containers.

**Storage temperature**: 0 °C to 50 °C
SAFETY DATA SHEET

SOLITAIRE

Product AT USE DILUTION
Advice on safe handling: Wash hands after handling. For personal protection see section 8.
Conditions for safe storage: Keep out of reach of children. Store in suitable labeled containers.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Product AS SOLD
Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Form of exposure</th>
<th>Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene Glycol</td>
<td>25322-68-3</td>
<td>TWA (Aerosol.)</td>
<td>10 mg/m³</td>
<td>AIHA WEEL</td>
</tr>
<tr>
<td>ethanol</td>
<td>64-17-5</td>
<td>TWA</td>
<td>1,000 ppm 1,900 mg/m³</td>
<td>NIOSH REL</td>
</tr>
</tbody>
</table>

Engineering measures: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection: No special protective equipment required.
Hand protection: Due to the form and packaging of the product, no protective equipment is needed under normal use conditions.
Skin protection: No special protective equipment required.
Respiratory protection: No personal respiratory protective equipment normally required.
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

Product AT USE DILUTION
Engineering measures: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection: No special protective equipment required.
Hand protection: No special protective equipment required.
Skin protection: No special protective equipment required.
Respiratory protection: No personal respiratory protective equipment normally required.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Product AS SOLD</th>
<th>Color</th>
<th>Product AT USE DILUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cast Solid</td>
<td>opaque, light pink</td>
<td>liquid</td>
</tr>
</tbody>
</table>

975888 4 / 10
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>citrus</td>
</tr>
<tr>
<td>pH</td>
<td>7.0 - 9.0, 1%</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>insoluble</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Thermal decomposition</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
</tr>
<tr>
<td>VOC</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### SECTION 10. STABILITY AND REACTIVITY

**Product AS SOLD**

**Chemical stability**: Stable under normal conditions.

**Possibility of hazardous reactions**: No dangerous reaction known under conditions of normal use.

**Conditions to avoid**: None known.

**Incompatible materials**: None known.

**Hazardous decomposition products**: Decomposition products may include the following materials:
- Carbon oxides
- Nitrogen oxides (NOx)
- Sulfur oxides
- Oxides of phosphorus

### SECTION 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**: Eye contact, Skin contact
Potential Health Effects

**Product AS SOLD**

**Eyes**
- Causes eye irritation.

**Skin**
- Causes skin irritation.

**Ingestion**
- Health injuries are not known or expected under normal use.

**Inhalation**
- Health injuries are not known or expected under normal use.

**Chronic Exposure**
- Health injuries are not known or expected under normal use.

**Product AT USE DILUTION**

**Eyes**
- Health injuries are not known or expected under normal use.

**Skin**
- Health injuries are not known or expected under normal use.

**Ingestion**
- Health injuries are not known or expected under normal use.

**Inhalation**
- Health injuries are not known or expected under normal use.

**Chronic Exposure**
- Health injuries are not known or expected under normal use.

Experience with human exposure

**Product AS SOLD**

**Eye contact**
- Redness, Irritation

**Skin contact**
- Redness, Irritation

**Ingestion**
- No symptoms known or expected.

**Inhalation**
- No symptoms known or expected.

**Product AT USE DILUTION**

**Eye contact**
- No symptoms known or expected.

**Skin contact**
- No symptoms known or expected.

**Ingestion**
- No symptoms known or expected.

**Inhalation**
- No symptoms known or expected.

Toxicity

**Product AS SOLD**

**Acute oral toxicity**
- Acute toxicity estimate : 2,567 mg/kg

**Acute inhalation toxicity**
- No data available

**Acute dermal toxicity**
- Acute toxicity estimate : > 5,000 mg/kg

**Skin corrosion/irritation**
- No data available
SAFETY DATA SHEET

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Serious eye damage/eye irritation: Mild eye irritation
Respiratory or skin sensitization: No data available
Carcinogenicity: No data available
Reproductive effects: No data available
Germ cell mutagenicity: No data available
Teratogenicity: No data available
STOT-single exposure: No data available
STOT-repeated exposure: No data available
Aspiration toxicity: No data available

Ingredients
Acute inhalation toxicity: acetic acid, sodium salt
4 h LC50 Rat: > 5.6 mg/l
ethanol
4 h LC50 Rat: 117 mg/l

SECTION 12. ECOLOGICAL INFORMATION

Product AS SOLD
Ecotoxicity
Environmental Effects: Toxic to aquatic life.

Product
Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available

Ingredients
Toxicity to fish: sodium dodecylbenzene sulfonate
96 h LC50: 3.2 mg/l
Polyethylene Glycol
96 h LC50 Fish: > 1,000 mg/l
dodecanamide, n-(2-hydroxyethyl)-
96 h LC50 Fish: > 100 mg/l
Sodium poly(oxyethylene) dodecyl ether sulfate
96 h LC50 Fish: 28 mg/l
acetic acid, sodium salt
96 h LC50 Fish: > 100 mg/l
ethanol
96 h LC50 Pimephales promelas (fathead minnow): > 100 mg/l

Persistence and degradability
No data available
SAFETY DATA SHEET

SOLITAIRE

Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Product AS SOLD
Disposal methods: The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations: Dispose of as an unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. Dispose of in accordance with local, state, and federal regulations.

Product AT USE DILUTION
Disposal methods: Diluted product can be flushed to sanitary sewer.

Disposal considerations: Dispose of in accordance with local, state, and federal regulations.

SECTION 14. TRANSPORT INFORMATION

Product AS SOLD
The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)
Not dangerous goods

Sea transport (IMDG/IMO)
Not dangerous goods

Product AT USE DILUTION
Not intended for transport.

SECTION 15. REGULATORY INFORMATION

Product AS SOLD
EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium dodecylbenzene sulfonate</td>
<td>25155-30-0</td>
<td>1000</td>
<td>3247</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

SOLITAIRE

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

United States TSCA Inventory :
On TSCA Inventory

Canadian Domestic Substances List (DSL) :
All components of this product are on the Canadian DSL

Australia Inventory of Chemical Substances (AICS) :
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemical Substances :
On the inventory, or in compliance with the inventory

Japan. ENCS - Existing and New Chemical Substances Inventory :
On the inventory, or in compliance with the inventory

Japan. ISHL - Inventory of Chemical Substances (METI) :
not determined

Korea. Korean Existing Chemicals Inventory (KECI) :
On the inventory, or in compliance with the inventory

Philippines Inventory of Chemicals and Chemical Substances (PICCS) :
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances in China (IECSC) :
On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

Product AS SOLD
**SAFETY DATA SHEET**

**SOLITAIRE**

**NFPA:**

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Health</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Special hazard.

**HMIS III:**

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

0 = not significant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme, * = Chronic

**Product AT USE DILUTION**

**NFPA:**

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Health</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Special hazard.

**HMIS III:**

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

0 = not significant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme, * = Chronic

Issuing date : 02/15/2016
Version : 1.2
Prepared by : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Material 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.