1 Identification

· Product identifier
  · Trade name: ArctiClean 1
  · Relevant identified uses of the substance or mixture and uses advised against
    No further relevant information available
  · Product description Cleaning product

· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier:
    · Arctic Silver Incorporated
    9826 West Legacy Ave.
    Visalia, CA 93291 USA
    Voice: 559.740.0912
    Fax: 559.740.0913
    infoas@arcticsilver.com
    www.arcticsilver.com
  · Emergency telephone number:
    · Rocky Mountain Poison Control
      Toll Free: 877-740-5015
      Alternate: 303-739-1110

2 Classification(s) identification

Classification of the substance or mixture

⚠ GHS07

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335 May cause respiratory irritation.

Flam. Liq. 4 H227 Combustible liquid.

· Label elements
  · GHS label elements
    The product is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms
    ⚠ GHS07

· Signal word Warning
  · Hazard-determining components of labeling:
    d-limonene
    Poly(oxy-1,2-ethanediyl), alpha-(4- 4 – 8% nonyl/phenyl)-omega-hydroxy-, branched
  · Hazard statements
    Combustible liquid.
    Causes skin irritation.
    Causes serious eye irritation.
    May cause an allergic skin reaction.
    May cause respiratory irritation.

(Contd. on page 2)
Trade name: ArctiClean 1

- **Precautionary statements**
  - Keep away from flames and hot surfaces. – No smoking.
  - Avoid breathing dust/fume/gas/mist/vapors/spray.
  - Use only outdoors or in a well-ventilated area.
  - Wear protective gloves / eye protection / face protection.
  - Wear protective gloves.
  - Wear eye protection / face protection.
  - Wash thoroughly after handling.
  - Contaminated work clothing must not be allowed out of the workplace.
  - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
  - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  - Call a poison center/doctor if you feel unwell.
  - Wash contaminated clothing before reuse.
  - If skin irritation or rash occurs: Get medical advice/attention.
  - If eye irritation persists: Get medical advice/attention.
  - In case of fire: Use for extinction: CO2, powder or water spray.
  - If on skin: Wash with plenty of water.
  - Take off contaminated clothing and wash it before reuse.
  - Store locked up.
  - Store in a well-ventilated place. Keep container tightly closed.
  - Keep cool.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Unknown acute toxicity:**
  - 5 percent of the mixture consists of ingredient(s) of unknown toxicity.

- **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
    - Health = 1
    - Fire = 2
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4)**
    - Health = 2
    - Fire = 2
    - Reactivity = 0

- **Hazard(s) not otherwise classified (HNOC):** None known

---

### 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of substances listed below with nonhazardous additions.
Trade name: ArctiClean 1

4 First-aid measures

• Description of first aid measures
• After inhalation: Supply fresh air; consult doctor in case of complaints.
  In case of unconsciousness, place patient securely on side position for transportation.
• After skin contact: Immediately wash with water and soap and rinse thoroughly.
  If skin irritation occurs, consult a doctor.
• After eye contact: Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.
• After swallowing: If swallowed and symptoms occur, consult a doctor.
• Information for doctor:
  • Most important symptoms and effects, both acute and delayed
    No further relevant information available.
  • Indication of any immediate medical attention and special treatment needed
    No further relevant information available.

5 Fire-fighting measures

• Extinguishing media
• Suitable extinguishing agents: CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
• Special hazards arising from the substance or mixture
  Combustible liquid. Vapors can travel to a source of ignition and flash back.
  Explosive mixtures may occur at temperatures at or above flashpoint.
• Advice for firefighters
• Protective equipment: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

6 Accidental release measures

• Personal precautions, protective equipment and emergency procedures Not required.
• Environmental precautions: Inform respective authorities in case of seepage into water course or sewage system.

(Contd. on page 4)
Trade name: ArctiClean 1

Safety Data Sheet (SDS)
OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Printing date 07/07/2015
Reviewed on 07/07/2015

7 Handling and storage

· Handling:
  · Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
  · Information about protection against explosions and fires: Protect from heat.

· Conditions for safe storage, including any incompatibilities

· Storage:
  · Requirements to be met by storerooms and receptacles: No special requirements.
  · Information about storage in one common storage facility: Not required.
  · Further information about storage conditions:
    Keep receptacle tightly sealed.
    Protect from heat and direct sunlight.
  · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see section 7.

· Control parameters

<table>
<thead>
<tr>
<th>Components with occupational exposure limits:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5989-27-5 d-limonene</td>
</tr>
<tr>
<td>TWA</td>
</tr>
</tbody>
</table>

· Additional information: The lists that were valid during the creation of this SDS were used as basis.

· Exposure controls
  · Personal protective equipment:
    · General protective and hygienic measures:
      The usual precautionary measures for handling chemicals should be followed.
      Keep away from foodstuffs, beverages and feed.
      Immediately remove all soiled and contaminated clothing and wash before reuse.
      Wash hands before breaks and at the end of work.
      Avoid contact with the eyes and skin.
  · Breathing equipment: Not required.

(Contd. on page 5)
Trade name: ArctiClean 1

- **Protection of hands:**
  
  Protective gloves

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Select glove material based on penetration times, rates of diffusion and degradation.

- **Material of gloves**
  
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**
  
  The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

- **Eye protection:**
  
  Tightly sealed goggles

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

  - **General Information**
    
    - **Appearance:**
      
      - **Form:** Liquid
      - **Color:** Pale yellow
      - **Odor:** Citrus, reminding of orange peel
      - **Odor threshold:** Not determined.
    
    - **pH-value:** Not determined.

  - **Change in condition**
    
    - **Melting point/Melting range:** Not determined.
    - **Boiling point/Boiling range:** 173 °C (343 °F)

  - **Flash point:** 91 °C (196 °F)

  - **Flammability (solid, gaseous):** Not applicable.

  - **Ignition temperature:** 255 °C (491 °F)

  - **Decomposition temperature:** Not determined.

  - **Auto igniting:** Product is not self-igniting.

  - **Danger of explosion:** Not determined.

(Contd. on page 6)
Trade name: ArctiClean 1

<table>
<thead>
<tr>
<th>· Explosion limits:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower:</td>
</tr>
<tr>
<td>Upper:</td>
</tr>
<tr>
<td>0.7 Vol %</td>
</tr>
<tr>
<td>6.1 Vol %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Vapor pressure @ 20 °C (68 °F):</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3 hPa (2 mm Hg)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Density @ 20 °C (68 °F):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative density</td>
</tr>
<tr>
<td>Vapor density</td>
</tr>
<tr>
<td>Evaporation rate</td>
</tr>
<tr>
<td>Not determined.</td>
</tr>
<tr>
<td>Not determined.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Solubility in / Miscibility with Water:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not miscible or difficult to mix.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>· Partition coefficient (n-octanol/water):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not determined.</td>
</tr>
</tbody>
</table>

| · Viscosity:                                |
| Dynamic:                                    |
| Kinematic:                                  |
| Not determined.                             |

| · Solvent content:                          |
| Organic solvents:                           |
| VOC content:                                |
| 85.0 %                                      |
| 85.0 %                                      |
| 722.5 g/l / 6.03 lb/gl                      |

| · Other information:                        |
| No further relevant information available.  |

10 Stability and reactivity

| · Reactivity:                               |
| No further relevant information available.  |

| · Chemical stability:                      |
| Stable under normal conditions.            |

| · Thermal decomposition / conditions to be avoided: |
| No decomposition if used according to specifications. |

| · Possibility of hazardous reactions:       |
| No dangerous reactions known.               |

| · Conditions to avoid:                      |
| No further relevant information available.  |

| · Incompatible materials:                   |
| Strong oxidizing agents.                    |

| · Hazardous decomposition products:         |
| No dangerous decomposition products known.  |

11 Toxicological information

| · Information on toxicological effects:     |

| · Acute toxicity:                           |

| · LD/LC50 values that are relevant for classification: |

| 5989-27-5 d-limonene                        |

| Oral LD50                                   |
| 4400 mg/kg (rat)                            |

| Dermal LD50                                 |
| Remarks: Behavioral: Change in motor activity (specific assay). Respiratory disorder Skin and Appendages: Other: Hair >5000 mg/kg (rabbit) |

(Contd. on page 7)
Safety Data Sheet (SDS)
OSH A HazCoM Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Printing date 07/07/2015 Reviewed on 07/07/2015

Trade name: ArcticClean 1

Inhalative LC50/96 hours 0.72 mg/l (Pimephales) (OECD Test Guideline 203)

| Aquatic toxicity: Avoid release into the environment. Runoff from fire control or dilution water may cause pollution. |
| 127087-87-0 Poly(oxy-1,2-ethanediyl), alpha-(4- 4–8% nonylphenyl)-omega-hydroxy-, branched |
| Oral LD50 | 16000 mg/kg (rat) |
| Dermal LD50 | 4490 mg/kg (rabbit) (24 hr occluded contact) |

· Primary irritant effect:
  · on the skin: Irritant to skin and mucous membranes. May cause an allergic skin reaction.
  · on the eye: Irritating effect.
· Sensitization: Sensitization possible through skin contact.
· Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
  Irritant

· Carcinogenic categories
  · IARC (International Agency for Research on Cancer)
    Group 1 - Carcinogenic to humans
    Group 2A - Probably carcinogenic to humans
    Group 2B - Possibly carcinogenic to humans
    Group 3 - Not classifiable as to its carcinogenicity to humans
    Group 4 - Probably not carcinogenic to humans

5989-27-5 | d-limonene 3 |

· NTP (National Toxicology Program)
  None of the ingredients are listed.

· OSHA-Ca (Occupational Safety & Health Administration)
  None of the ingredients are listed.

12 Ecological information

· Toxicity
  · Aquatic toxicity:
    Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

5989-27-5 | d-limonene |

· Persistence and degradability
  No further relevant information available.
· Behavior in environmental systems:
  · Bioaccumulative potential
  No further relevant information available.
  · Mobility in soil
  No further relevant information available.
· Ecotoxicological effects:
  · Remark: Very toxic for fish
· Additional ecological information:
· General notes:
  Do not allow product to reach ground water, water course or sewage system.

(Contd. on page 8)
Trade name: ArctiClean 1

Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms
* Results of PBT and vPvB assessment
  * PBT: Not applicable.
  * vPvB: Not applicable.
* Other adverse effects No further relevant information available.

13 Disposal considerations

* Waste treatment methods
  * Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
* Uncleaned packagings:
  * Recommendation: Disposal must be made according to official regulations.

14 Transport information

* UN-Number
  * DOT, ADR, IMDG, IATA UN2052

* UN proper shipping name
  * DOT
    * ADR UN2052 Dipentene, ENVIRONMENTALLY HAZARDOUS
  * IMDG DIPENTENE, MARINE POLLUTANT
  * IATA DIPENTENE

* Transport hazard class(es)

  * DOT
    * Class 3 Flammable liquids
    * Label 3

  * ADR, IATA
    * Class 3 Flammable liquids

(Contd. on page 9)
Safety Data Sheet (SDS)

Trade name: ArctiClean 1

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Label</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>IMDG</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Class</strong></td>
<td>3 Flammable liquids</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Packing group</strong></td>
<td>III</td>
</tr>
<tr>
<td><strong>DOT, ADR, IMDG, IATA</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Environmental hazards:</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
<td>Warning: Flammable liquids</td>
</tr>
<tr>
<td><strong>EMS Number:</strong></td>
<td>F-E,S-E</td>
</tr>
<tr>
<td><strong>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Transport/Additional information:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>DOT</strong></td>
<td>On passenger aircraft/rail:</td>
</tr>
<tr>
<td><strong>Quantity limitations</strong></td>
<td>On cargo aircraft only:</td>
</tr>
<tr>
<td><strong>Remarks:</strong></td>
<td>ERG Number: 127</td>
</tr>
<tr>
<td><strong>ADR</strong></td>
<td>Code: E1</td>
</tr>
<tr>
<td><strong>Excepted quantities (EQ)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>UN &quot;Model Regulation&quot;:</strong></td>
<td>UN20 52 , Dipentene, ENVIRONMENTALLY HAZARDOUS, 3, III</td>
</tr>
</tbody>
</table>

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
    - Section 355 (extremely hazardous substances):
      None of the ingredients are listed.
    - Section 313 (Specific toxic chemical listings):
      None of the ingredients are listed.
    - TSCA (Toxic Substances Control Act):
      All ingredients are listed.
    - Proposition 65
      - Chemicals known to cause cancer:
        None of the ingredients are listed.

(Contd. on page 10)
Trade name: ArctiClean 1

- Chemicals known to cause reproductive toxicity for females:
  None of the ingredients are listed.

- Chemicals known to cause reproductive toxicity for males:
  None of the ingredients are listed.

- Chemicals known to cause developmental toxicity:
  None of the ingredients are listed.

- Carcinogenic categories
  - EPA (Environmental Protection Agency)
    None of the ingredients are listed.
  - TLV (Threshold Limit Value established by ACGIH)
    None of the ingredients are listed.
  - NIOSH-Ca (National Institute for Occupational Safety and Health)
    None of the ingredients are listed.

- GHS label elements
  The product is classified and labeled according to the Globally Harmonized System (GHS).
  - Hazard pictograms
  GHS07

- Signal word Warning

- Hazard-determining components of labeling:
  d-limonene
  Poly(oxy-1,2-ethanediyl), alpha-(4-4 – 8% nonylphenyl)-omega-hydroxy-, branched

- Hazard statements
  Combustible liquid.
  Causes skin irritation.
  Causes serious eye irritation.
  May cause an allergic skin reaction.
  May cause respiratory irritation.

- Precautionary statements
  Keep away from flames and hot surfaces. – No smoking.
  Avoid breathing dust/fume/gas/mist/vapors/spray
  Use only outdoors or in a well-ventilated area.
  Wear protective gloves / eye protection / face protection.
  Wear protective gloves.
  Wear eye protection / face protection.
  Wash thoroughly after handling.
  Contaminated work clothing must not be allowed out of the workplace.
  If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  Call a poison center/doctor if you feel unwell.

(Contd. on page 11)
Trade name: ArctiClean 1

Wash contaminated clothing before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use for extinction: CO2, powder or water spray.
If on skin: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.

- **National regulations:**

The product is subject to be labeled according to the prevailing versions of the regulations on hazardous substances.

- **State Right to Know**

<table>
<thead>
<tr>
<th>CAS: 5989-27-5</th>
<th>d-limonene</th>
<th>≥85%</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTECS: GW 6360000</td>
<td>Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Irrit. 2, H315; Skin Sens. 1, H317; Flam. Liq. 4, H227</td>
<td></td>
</tr>
</tbody>
</table>

| CAS: 127087-87-0 | Poly(oxy-1,2-ethanediyl), alpha-(4- 4 – 8% nonylphenyl)-omega-hydroxy-, branched | 5-10% |
| RTECS: WZ4750000 | Eye Dam. 1, H318; STOT SE 3, H335 |

<table>
<thead>
<tr>
<th>CAS: 67784-80-9</th>
<th>Methyl ester, soybean oil</th>
<th>2-12%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acute Tox. 4, H312; Skin Irrit. 2, H315; Eye Irrit. 2A, H319</td>
<td></td>
</tr>
</tbody>
</table>

All ingredients are listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

---

**16 Other information**

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

- **Date of preparation / last revision:** 04/20/2015 / 1

- **Abbreviations and acronyms:**

  ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
  ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  Flam. Liq. 4: Flammable liquids, Hazard Category 4
  Acute Tox. 4: Acute toxicity, Hazard Category 4
  Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
  Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

(Contd. on page 12)
Trade name: ArctiClean 1

- Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A
- Skin Sens. 1: Sensitization - Skin, Hazard Category 1
- STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3 Aquatic
- Acute 1: Hazardous to the aquatic environment – Acute Hazard, Category 1 Aquatic
- Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

* Data compared to the previous version altered.