# Material Safety Data Sheet

## Circuitworks® Conductive Pen

## 1. Product and company identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>: Circuitworks® Conductive Pen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier</td>
<td>: Chemtronics</td>
</tr>
<tr>
<td></td>
<td>8125 Cobb Center Drive</td>
</tr>
<tr>
<td></td>
<td>Kennesaw, GA 30152</td>
</tr>
<tr>
<td></td>
<td>Tel. 770-424-4888 or toll free 800-645-5244</td>
</tr>
<tr>
<td>Synonym</td>
<td>: Silver Conductive Ink</td>
</tr>
<tr>
<td>Trade name</td>
<td>: Circuitworks® Conductive Pen</td>
</tr>
<tr>
<td>Material uses</td>
<td>: Electrical conductive agents</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>: Chemtronics</td>
</tr>
<tr>
<td></td>
<td>8125 Cobb Center Drive</td>
</tr>
<tr>
<td></td>
<td>Kennesaw, GA 30152</td>
</tr>
<tr>
<td></td>
<td>Tel. 770-424-4888 or toll free 800-645-5244</td>
</tr>
<tr>
<td>Code</td>
<td>: CW2200MTP, CW2200STP, CW2200BLK</td>
</tr>
<tr>
<td>MSDS #</td>
<td>: 4001</td>
</tr>
<tr>
<td>Validation date</td>
<td>: 7/25/2013.</td>
</tr>
<tr>
<td>Print date</td>
<td>: 7/25/2013.</td>
</tr>
<tr>
<td>In case of emergency</td>
<td>: Chemtrec - 1-800-424-9300 or collect 703-527-3887 24/7</td>
</tr>
<tr>
<td>Product type</td>
<td>: Electric and electromechanical components - Conductive materials</td>
</tr>
</tbody>
</table>

## 2. Hazards identification

### Emergency overview
- **Physical state**: Liquid.
- **Color**: Gray.
- **Odor**: Not available.
- **Signal word**: WARNING!
- **Hazard statements**: FLAMMABLE LIQUID AND VAPOR. HARMFUL IF INHALED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.
- **Precautionary measures**: Do not breathe vapor or mist. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Avoid prolonged contact with eyes, skin and clothing. Keep away from heat, sparks and flame. Keep container tightly closed. Wash thoroughly after handling.

### Routes of entry
- Not available.

### Potential acute health effects
- **Inhalation**: Toxic by inhalation.
- **Ingestion**: Harmful if swallowed.
- **Skin**: Harmful in contact with skin. Moderately irritating to the skin.
- **Eyes**: Moderately irritating to eyes.

### Potential chronic health effects
- **Chronic effects**: Contains material that can cause target organ damage.
- **Carcinogenicity**: No known significant effects or critical hazards.
- **Mutagenicity**: No known significant effects or critical hazards.
- **Teratogenicity**: No known significant effects or critical hazards.
2. Hazards identification

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Target organs: Contains material which causes damage to the following organs: eye, lens or cornea. Contains material which may cause damage to the following organs: blood, kidneys, liver, mucous membranes, spleen, lymphatic system, upper respiratory tract, skin, bone marrow, central nervous system (CNS), nose/sinuses, testes.

Over-exposure signs/symptoms

Inhalation: Adverse symptoms may include the following:
- headache
- nausea or vomiting
- dizziness/vertigo
- drowsiness/fatigue
- respiratory tract irritation
- unconsciousness

Ingestion: Adverse symptoms may include the following:
- central nervous system depression

Skin: Adverse symptoms may include the following:
- irritation
- redness

Eyes: Adverse symptoms may include the following:
- irritation
- watering
- redness

Medical conditions aggravated by over-exposure: Repeated exposure may cause skin dryness or cracking.

See toxicological information (Section 11)

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>silver</td>
<td>7440-22-4</td>
<td>35 - 65</td>
</tr>
<tr>
<td>n-butyl acetate</td>
<td>123-86-4</td>
<td>5 - 35</td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>108-65-6</td>
<td>2 - 20</td>
</tr>
<tr>
<td>2-butoxyethyl acetate</td>
<td>112-07-2</td>
<td>2 - 20</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
4. First aid measures

**Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

**Notes to physician**: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

**Flammability of the product**: Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

**Extinguishing media**

<table>
<thead>
<tr>
<th>Suitable</th>
<th>Not suitable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use dry chemical, CO₂, water spray (fog) or foam.</td>
<td>Do not use water jet.</td>
</tr>
</tbody>
</table>

**Special exposure hazards**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Hazardous thermal decomposition products**: Decomposition products may include the following materials:
- Carbon dioxide
- Carbon monoxide
- Metal oxide/oxides

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

**Personal precautions**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

**Environmental precautions**: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**Methods for cleaning up**

<table>
<thead>
<tr>
<th>Small spill</th>
<th>Large spill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</td>
<td></td>
</tr>
</tbody>
</table>

Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
7. Handling and storage

**Handling**: Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Storage**: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Occupational exposure limits</th>
<th>TWA (8 hours)</th>
<th>STEL (15 mins)</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredient</td>
<td>List name</td>
<td>ppm mg/m³ Other ppm mg/m³ Other ppm mg/m³ Other ppm mg/m³ Other Notations</td>
<td></td>
</tr>
<tr>
<td>silver</td>
<td>US ACGIH 3/2012 - 0.1 - - - - -</td>
<td>[a]</td>
<td></td>
</tr>
<tr>
<td>silver, as Ag</td>
<td>AB 4/2009 - 0.1 - - - - -</td>
<td>[A]</td>
<td></td>
</tr>
<tr>
<td>silver</td>
<td>BC 4/2012 0.01 - - 0.03 - - -</td>
<td>[b]</td>
<td></td>
</tr>
<tr>
<td>n-butyl acetate</td>
<td>ON 1/2013 - 0.1 - - - - -</td>
<td>[3]</td>
<td></td>
</tr>
<tr>
<td>BC 4/2012 0.1 - - - - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QC 12/2012 0.1 - - - - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>US ACGIH 3/2012 150 - - - 200 - - -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AB 4/2009 150 713 - - - 200 950 - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC 4/2012 20 - - - - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ON 1/2013 150 - - - - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QC 12/2012 150 713 - - - 200 950 - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC 4/2012 50 - - - - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ON 1/2013 50 270 - - - - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-butoxyethyl acetate</td>
<td>US AIHA 10/2011 50 - - - - - -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>US ACGIH 3/2012 20 - - - - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AB 4/2009 20 131 - - - - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC 4/2012 20 - - - - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ON 1/2013 20 - - - - - -</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[3] Skin sensitization
Form: [a] Dust and fumes [b] Metallic form
Notes: [A] As Ag

Consult local authorities for acceptable exposure limits.

**Recommended monitoring procedures**: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

7/25/2013.
8. Exposure controls/personal protection

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Eyes: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Other protection: Not available.

Personal protective equipment (Pictograms): Not available.

9. Physical and chemical properties

Physical state: Liquid.
Flash point: Closed cup: 24°C (75.2°F) [Tagliabue.]
Burning time: Not applicable.
Burning rate: Not applicable.
Auto-ignition temperature: Not available.
Flammable limits: Not available.
Color: Gray.
Odor: Not available.
Taste: Not available.
Molecular weight: Not applicable.
Molecular formula: Not applicable.
9. Physical and chemical properties

- **pH**: Not available.
- **Boiling/condensation point**: 126°C (258.8°F)
- **Melting/freezing point**: Not available.
- **Critical temperature**: Not available.
- **Relative density**: 2
- **Vapor pressure**: 0.67 kPa (5 mm Hg) [room temperature]
- **Vapor density**: Not available.
- **Vapor pressure**: Not available.
- **Odor threshold**: Not available.
- **Evaporation rate**: >1 (butyl acetate = 1)
- **SADT**: Not available.
- **Viscosity**: Not available.
- **Ionicity (in water)**: Not available.
- **Dispersibility properties**: Not dispersible in the following materials: cold water, hot water, methanol, diethyl ether, n-octanol and acetone.
- **Solubility**: Not available.
- **Physical/chemical properties comments**: Not available.

10. Stability and reactivity

- **Chemical stability**: The product is stable.
- **Conditions to avoid**: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- **Incompatible materials**: Reactive or incompatible with the following materials: oxidizing materials acids alkalis
- **Hazardous decomposition products**: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- **Possibility of hazardous reactions**: Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-butyl acetate</td>
<td>LC50 Inhalation Gas.</td>
<td>Rat</td>
<td>390 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;17600 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>10768 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;5 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>8532 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>1500 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2400 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**: Not available.

**Chronic toxicity**

Not available.

**Conclusion/Summary**

Not available.

**Irritation/Corrosion**

6/13/2013.
11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-butyl acetate</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>2-butoxyethyl acetate</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

Conclusion/Summary: Not available.

Sensitizer
Not available.

Carcinogenicity
Not available.

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>EPA</th>
<th>NIOSH</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>silver</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>None</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>n-butyl acetate</td>
<td>A4</td>
<td>-</td>
<td>-</td>
<td>None</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>None</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2-butoxyethyl acetate</td>
<td>A3</td>
<td>-</td>
<td>-</td>
<td>None</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Mutagenicity
Not available.

Teratogenicity
Not available.

Reproductive toxicity
Not available.

Conclusion/Summary: Not available.

Synergistic products
Not available.

12. Ecological information

Ecotoxicity: No known significant effects or critical hazards.

Aquatic ecotoxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>silver</td>
<td>Acute EC50 1.4 µg/l Marine water</td>
<td>Algae - Chroomonas sp.</td>
<td>4 days</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 0.24 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 4500 ppb Fresh water</td>
<td>Crustaceans - Gammarus pseudolimnaeus</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 2.13 to 2.93 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td>n-butyl acetate</td>
<td>Chronic NOEC 5 mg/l Marine water</td>
<td>Algae - Glenodinium halli</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 32000 µg/l Marine water</td>
<td>Crustaceans - Artemia salina - Nauplii</td>
<td>48 hours</td>
</tr>
</tbody>
</table>
12. Ecological information

<table>
<thead>
<tr>
<th>Conclusion/Summary</th>
<th>Acute LC50 62000 µg/l</th>
<th>Fish - Danio rerio</th>
<th>96 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity of the products of biodegradation</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persistence/degradability</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioconcentration factor</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion/Summary: Not available.

Persistence/degradability: Not available.

Partition coefficient: n-octanol/water: Not available.

Bioconcentration factor: Not available.

Mobility: Not available.

Toxicity of the products of biodegradation: Not available.

Other adverse effects: No known significant effects or critical hazards.

13. Disposal considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Waste stream: Not available.

RCRA classification: Not available.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td></td>
<td>Consumer commodity ORM-D</td>
<td>ORM-D</td>
<td>-</td>
<td></td>
<td>Reportable quantity 2000 lbs / 908 kg [119.93 gal / 454 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</td>
</tr>
<tr>
<td>TDG Classification</td>
<td></td>
<td>Consumer commodity ORM-D</td>
<td>ORM-D</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

7/25/2013. 4001
14. Transport information

<table>
<thead>
<tr>
<th>Mexico Classification</th>
<th>-</th>
<th>Consumer commodity ORM-D</th>
<th>ORM-D</th>
<th>-</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR/RID Class</td>
<td>1263</td>
<td>Paint</td>
<td>3</td>
<td>III</td>
<td>Limited quantity</td>
</tr>
<tr>
<td>IMDG Class</td>
<td>1263</td>
<td>Painting-related materials.</td>
<td>3</td>
<td>III</td>
<td>Limited quantity</td>
</tr>
<tr>
<td>IATA-DGR Class</td>
<td>1263</td>
<td>Paint</td>
<td>3</td>
<td>III</td>
<td>Limited quantity</td>
</tr>
</tbody>
</table>

PG* : Packing group

15. Regulatory information

United States inventory (TSCA 8b) : Not determined.

WHMIS (Canada) : Class B-2: Flammable liquid

Canadian lists
Canadian NPRI : The following components are listed: Silver (and its compounds); n-Butyl acetate; Propylene glycol methyl ether acetate; Ethylene glycol butyl ether acetate

CEPA Toxic substances : None of the components are listed.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

International lists : Australia inventory (AICS): Not determined.
China inventory (IECSC): Not determined.
Japan inventory: Not determined.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed
Chemical Weapons Convention List Schedule II Chemicals : Not listed
Chemical Weapons Convention List Schedule III Chemicals : Not listed
16. Other information

Label requirements: FLAMMABLE LIQUID AND VAPOR. HARMFUL IF INHALED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Hazardous Material Information System (U.S.A.):

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

References: Not available.

Other special considerations: Not available.

Date of printing: 7/25/2013.

Date of issue: 7/25/2013.

Date of previous issue: 7/25/2013.

Version: 5

Prepared by: Not available.

 Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.