

# SAFETY DATA SHEET



CIRCUITWORKS® CONDUCTIVE EPOXY - Part B (Hardener) CW2400,  
CW2400J, CW2400 BLK  
Part B UFI: U8A8-A00M-V00C-KMXR

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

### 1.1 Product identifier

**Product name** : CIRCUITWORKS® CONDUCTIVE EPOXY - Part B (Hardener) CW2400, CW2400J, CW2400 BLK  
Part B UFI: U8A8-A00M-V00C-KMXR

**Product code** : CW2400, CW2400J, CW2400 BLK Part B

**Product description** : Hardener for adhesive.

**Product type** : Liquid.

**Other means of identification** : Hardener for adhesive.  
Industrial/Professional use  
UFI: U8A8-A00M-V00C-KMXR  
Date of commencement of manufacture or import October 2021

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

| Identified uses        |
|------------------------|
| Hardener for adhesive. |

### 1.3 Details of the supplier of the safety data sheet

Manufacturer  
Chemtronics  
8125 Cobb Center Drive  
Kennesaw, GA 30152  
Tel. 770-424-4888 or toll free 800-645-5244

Distributor

Importer  
ITW Contamination Control BV  
Saffierlaan 5  
VZ-2132 Hoofddorp  
The Netherlands  
Email: info@itw-cc.com  
Tel: +31 88 1307 400  
FAX: +31 88 1307 499  
Website: www.chemtronicseu.com

**e-mail address of person responsible for this SDS** : Importer/Only Representative  
Bay 150  
Shannon Industrial Estate  
Shannon  
County Clare  
Ireland  
V14 DF82  
+353 61 771 500  
customerservice.shannon@itwpp.com

**National contact**

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ITW Contamination Control BV  
Saffierlaan 5  
VZ-2132 Hoofddorp  
The Netherlands  
Email: [info@itw-cc.com](mailto:info@itw-cc.com)  
Tel: +31 88 1307 400  
FAX: +31 88 1307 499  
Website: [www.chemtronicseu.com](http://www.chemtronicseu.com)

### 1.4 Emergency telephone number

#### National advisory body/Poison Centre

**Telephone number** : EMERGENCY HEALTH INFORMATION:  
Austria +43 1 31304 5620, Belgium +32022649636, Bulgaria +359 2 9154 409,  
Croatia +38514686910, Cyprus +3572240561, Czech Republic +420267082257,  
Denmark +45 72 54 40 00, Estonia +3726943384, Finland +358 5052 000, France  
+33 3 85 21 92, Germany +49-30-18412-0, Greece +302106479250, Hungary +34  
(1) 476 1136, Ireland +35318092566, Italy +390649906140, Latvia +371 67032600,  
Lithuania +370 70662008, Luxembourg +352 24785551, Netherland +31 88 75 585  
61, Norway +47 21 07 70 00, Poland +48 42 2530 400, Portugal +351213303271,  
Romania +40213183606, Slovakia +421 2 5465 2307, Slovenia +38614006039,  
Spain +34 917689800, Sweden +46104566750  
United Kingdom (England or Wales) 0845 46 47 or Scotland 08454 24 24 24 (UK  
only)

#### Supplier

**Telephone number** : Chemtronics Product Information: 800-TECH-401 (800-832-4401)  
Chemtronics Customer Service: 800-645-5244

**Hours of operation** : 8:00 AM to 5:00 PM

**Information limitations** : EMERGENCY HEALTH INFORMATION:  
EMERGENCY SPILL INFORMATION:  
Transport information

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Acute Tox. 4, H302  
Acute Tox. 4, H312  
Skin Corr. 1B, H314  
Eye Irrit. 2, H319  
Skin Sens. 1, H317  
Aquatic Acute 1, H400  
Aquatic Chronic 1, H410

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

**Ingredients of unknown toxicity** : 75 percent of the mixture consists of component(s) of unknown acute oral toxicity  
75 percent of the mixture consists of component(s) of unknown acute dermal toxicity  
95 percent of the mixture consists of component(s) of unknown acute inhalation  
toxicity

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements

CIRCUITWORKS® CONDUCTIVE EPOXY - Part B (Hardener) CW2400, CW2400J, CW2400 BLK  
Part B UFI: U8A8-A00M-V00C-KMXR

## SECTION 2: Hazards identification

### Hazard pictograms

:



### Signal word

: Danger

### Hazard statements

: Harmful if swallowed or in contact with skin.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
Very toxic to aquatic life with long lasting effects.

### Precautionary statements

#### Prevention

: Wear protective gloves, protective clothing and eye or face protection. Avoid release to the environment. Avoid breathing vapour. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

#### Response

: Collect spillage. IF INHALED: Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

#### Storage

: Not applicable.

#### Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

### Hazardous ingredients

: 2-piperazin-1-ylethylamine

### Supplemental label elements

: FOR INDUSTRIAL USE ONLY  
For professional use only.

### Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

: Not applicable.

### Special packaging requirements

#### Containers to be fitted with child-resistant fastenings

: Not applicable.

#### Tactile warning of danger

: Not applicable.

### 2.3 Other hazards

#### Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

: This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

#### Other hazards which do not result in classification

: None known.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures : Mixture

| Product/ingredient name    | Identifiers                                           | %         | Classification                                                                                                                                                                                                            | Specific Conc. Limits, M-factors and ATEs           | Type    |
|----------------------------|-------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------|
| silver                     | EC: 231-131-3<br>CAS: 7440-22-4                       | ≥75 - ≤90 | Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410                                                                                                                                                                          | M [Acute] = 1000<br>M [Chronic] = 1000              | [1] [2] |
| 2-piperazin-1-ylethylamine | EC: 205-411-0<br>CAS: 140-31-8<br>Index: 612-105-00-4 | ≥10 - ≤25 | Acute Tox. 4, H302<br>Acute Tox. 4, H312<br>Skin Corr. 1B, H314<br>Eye Irrit. 2, H319<br>Skin Sens. 1, H317<br>Aquatic Chronic 3, H412<br><br><b>See Section 16 for the full text of the H statements declared above.</b> | ATE [Oral] = 500 mg/kg<br>ATE [Dermal] = 1100 mg/kg | [1]     |

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, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

#### Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

## SECTION 4: First aid measures

Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

- 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.

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

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains  
Ingestion Seek medical attention.

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

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

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

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
metal oxide/oxides

### 5.3 Advice for firefighters

- Special protective actions for fire-fighters** : 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.
- 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

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

- For non-emergency personnel** : 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 spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### 6.2 Environmental precautions

- : Avoid dispersal of spilt 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

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

- Small spill** : Stop leak if without risk. Move containers from spill area. 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.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

### 6.4 Reference to other sections

- : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : 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. See also Section 8 for additional information on hygiene measures.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. 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. Store locked up. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

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## SECTION 7: Handling and storage

### Seveso Directive - Reporting thresholds

#### Danger criteria

| Category | Notification and MAPP threshold | Safety report threshold |
|----------|---------------------------------|-------------------------|
| E1       | 100 tonne                       | 200 tonne               |

### 7.3 Specific end use(s)

**Recommendations** : Not available

**Industrial sector specific solutions** : Not available.

## SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

### 8.1 Control parameters

#### Occupational exposure limits

| Product/ingredient name | Exposure limit values                                                                                                               |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| silver                  | <b>EU OEL (Europe, 1/2022). Notes: list of indicative occupational exposure limit values</b><br>TWA: 0.1 mg/m <sup>3</sup> 8 hours. |

#### Biological exposure indices

No exposure indices known.

**Recommended monitoring procedures** : Reference should be made to monitoring standards, such as the following:  
European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

#### DNELs/DMELs

| Product/ingredient name    | Type | Exposure             | Value                    | Population         | Effects  |
|----------------------------|------|----------------------|--------------------------|--------------------|----------|
| silver                     | DNEL | Long term Inhalation | 0.04 mg/m <sup>3</sup>   | General population | Systemic |
|                            | DNEL | Long term Inhalation | 0.1 mg/m <sup>3</sup>    | Workers            | Systemic |
| 2-piperazin-1-ylethylamine | DNEL | Long term Oral       | 1.2 mg/kg bw/day         | General population | Systemic |
|                            | DNEL | Long term Dermal     | 0.003 mg/cm <sup>2</sup> | General population | Local    |
|                            | DNEL | Long term Dermal     | 0.006 mg/cm <sup>2</sup> | Workers            | Local    |
|                            | DNEL | Short term Dermal    | 0.02 mg/cm <sup>2</sup>  | General population | Local    |
|                            | DNEL | Short term Dermal    | 0.04 mg/cm <sup>2</sup>  | Workers            | Local    |
|                            | DNEL | Long term Oral       | 0.3 mg/kg bw/day         | General population | Systemic |
|                            | DNEL | Long term Inhalation | 0.9 mg/m <sup>3</sup>    | General population | Systemic |
|                            | DNEL | Short term Oral      | 1.5 mg/kg                | General            | Systemic |

## SECTION 8: Exposure controls/personal protection

|  |      |                       |                                 |                    |          |
|--|------|-----------------------|---------------------------------|--------------------|----------|
|  | DNEL | Long term Dermal      | bw/day<br>1.7 mg/kg             | population         | Systemic |
|  | DNEL | Long term Dermal      | bw/day<br>3.3 mg/kg             | General population | Systemic |
|  | DNEL | Long term Inhalation  | bw/day<br>3.6 mg/m <sup>3</sup> | Workers            | Systemic |
|  | DNEL | Short term Inhalation | 5.3 mg/m <sup>3</sup>           | General population | Systemic |
|  | DNEL | Short term Dermal     | 10 mg/kg<br>bw/day              | General population | Systemic |
|  | DNEL | Short term Dermal     | 20 mg/kg<br>bw/day              | Workers            | Systemic |
|  | DNEL | Short term Inhalation | 21.4 mg/m <sup>3</sup>          | Workers            | Systemic |

### PNECs

No PNECs available

## 8.2 Exposure controls

### **Appropriate engineering controls**

: If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

### Individual protection measures

#### **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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### **Eye/face protection**

: 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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

### Skin protection

#### **Hand protection**

: 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.

#### **Body protection**

: 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.

#### **Other skin protection**

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

### **Respiratory protection**

: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

### **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.

## SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### 9.1 Information on basic physical and chemical properties

#### Appearance

|                                         |                                              |
|-----------------------------------------|----------------------------------------------|
| Physical state                          | : Liquid.                                    |
| Colour                                  | : Silver. Grey.                              |
| Odour                                   | : Amine-like.                                |
| Odour threshold                         | : Not available.                             |
| Melting point/freezing point            | : Not available.                             |
| Initial boiling point and boiling range | : 121°C (249.8°F)                            |
| Flammability                            | : Not available.                             |
| Lower and upper explosion limit         | : Not available.                             |
| Flash point                             | : Closed cup: >93.3°C (>199.9°F) [Setaflash] |
| Auto-ignition temperature               | :                                            |

| Ingredient name            | °C   | °F   | Method |
|----------------------------|------|------|--------|
| 2-piperazin-1-ylethylamine | >300 | >572 |        |

|                                         |                   |
|-----------------------------------------|-------------------|
| Decomposition temperature               | : Not available.  |
| pH                                      | : Not available.  |
| Viscosity                               | : Not available.  |
| Solubility in water                     | : Not available.  |
| Partition coefficient: n-octanol/ water | : Not applicable. |
| Vapour pressure                         | :                 |

| Ingredient name            | Vapour Pressure at 20°C |        |        | Vapour pressure at 50°C |     |        |
|----------------------------|-------------------------|--------|--------|-------------------------|-----|--------|
|                            | mm Hg                   | kPa    | Method | mm Hg                   | kPa | Method |
| 2-piperazin-1-ylethylamine | 0.04                    | 0.0053 |        |                         |     |        |

|                  |                |
|------------------|----------------|
| Relative density | : 4.1          |
| Vapour density   | : >1 [Air = 1] |

#### Particle characteristics

|                      |                   |
|----------------------|-------------------|
| Median particle size | : Not applicable. |
|----------------------|-------------------|

### 9.2 Other information

#### 9.2.1 Information with regard to physical hazard classes

|                                    |                                                                                                                                                                                                                                                                                  |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Explosive properties               | : Non-explosive in the presence of the following materials or conditions: open flames, sparks and static discharge, heat, shocks and mechanical impacts, oxidising materials, reducing materials, combustible materials, organic materials, metals, acids, alkalis and moisture. |
| Oxidising properties               | : Not available.                                                                                                                                                                                                                                                                 |
| 9.2.2 Other safety characteristics |                                                                                                                                                                                                                                                                                  |
| Miscible with water                | Not available.                                                                                                                                                                                                                                                                   |
| Evaporation rate                   | : <1 (butyl acetate = 1)                                                                                                                                                                                                                                                         |

## SECTION 10: Stability and reactivity

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : The product is stable.
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : No specific data.
- 10.5 Incompatible materials** : No specific data.
- 10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

**Conclusion/Summary** : Not available.

#### Acute toxicity estimates

| Product/ingredient name    | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|----------------------------|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
| 2-piperazin-1-ylethylamine | 500          | 1100           | N/A                      | N/A                         | N/A                                 |

#### Irritation/Corrosion

| Product/ingredient name    | Result                   | Species | Score | Exposure       | Observation |
|----------------------------|--------------------------|---------|-------|----------------|-------------|
| 2-piperazin-1-ylethylamine | Eyes - Moderate irritant | Rabbit  | -     | 24 hours 20 mg | -           |
|                            | Skin - Severe irritant   | Rabbit  | -     | 24 hours 5 mg  | -           |

**Conclusion/Summary** : Not available.

#### Sensitisation

**Conclusion/Summary** : Not available.

#### Mutagenicity

**Conclusion/Summary** : Not available.

#### Carcinogenicity

**Conclusion/Summary** : Not available.

#### Reproductive toxicity

**Conclusion/Summary** : Not available.

#### Teratogenicity

**Conclusion/Summary** : Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

## SECTION 11: Toxicological information

**Information on likely routes of exposure** : Not available.

### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes severe burns. Harmful in contact with skin. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains  
Ingestion Seek medical attention.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

- Conclusion/Summary** : Not available.
- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

## 11.2 Information on other hazards

### 11.2.1 Endocrine disrupting properties

Not available.

### 11.2.2 Other information

Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

| Product/ingredient name    | Result                              | Species                               | Exposure |
|----------------------------|-------------------------------------|---------------------------------------|----------|
| silver                     | Acute EC50 1.4 µg/l Marine water    | Algae - Chroomonas sp.                | 4 days   |
|                            | Acute EC50 0.24 µg/l Fresh water    | Daphnia - Daphnia magna               | 48 hours |
| 2-piperazin-1-ylethylamine | Acute LC50 11 µg/l Fresh water      | Crustaceans - Ceriodaphnia reticulata | 48 hours |
|                            | Acute LC50 2.13 µg/l Fresh water    | Fish - Pimephales promelas            | 96 hours |
|                            | Chronic NOEC 5 mg/l Marine water    | Algae - Glenodinium halli             | 72 hours |
|                            | Acute LC50 2190000 µg/l Fresh water | Fish - Pimephales promelas            | 96 hours |

**Conclusion/Summary** : Not available.

### 12.2 Persistence and degradability

**Conclusion/Summary** : Not available.

### 12.3 Bioaccumulative potential

| Product/ingredient name    | LogP <sub>ow</sub> | BCF | Potential |
|----------------------------|--------------------|-----|-----------|
| silver                     | -                  | 70  | low       |
| 2-piperazin-1-ylethylamine | -1.48              | -   | low       |

### 12.4 Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

### 12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

### 12.6 Endocrine disrupting properties

Not available.

### 12.7 Other adverse effects

No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimised 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.

**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

#### Packaging

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

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Part B UFI: U8A8-A00M-V00C-KMXR

## SECTION 13: Disposal considerations

**Special precautions** : 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

|                                 | ADR/RID        | ADN            | IMDG           | IATA           |
|---------------------------------|----------------|----------------|----------------|----------------|
| 14.1 UN number or ID number     | Not regulated. | Not regulated. | Not regulated. | Not regulated. |
| 14.2 UN proper shipping name    | -              | -              | -              | -              |
| 14.3 Transport hazard class(es) | -              | -              | -              | -              |
| 14.4 Packing group              | -              | -              | -              | -              |
| 14.5 Environmental hazards      | -              | -              | -              | -              |

**14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**14.7 Maritime transport in bulk according to IMO instruments** : Not available.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU Regulation (EC) No. 1907/2006 (REACH)

##### Annex XIV - List of substances subject to authorisation

###### Annex XIV

None of the components are listed.

###### Substances of very high concern

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

##### Other EU regulations

**Industrial emissions (integrated pollution prevention and control) - Air** : Listed

**Industrial emissions (integrated pollution prevention and control) - Water** : Listed

## SECTION 15: Regulatory information

### Ozone depleting substances (1005/2009/EU)

Not listed.

### Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

### Seveso Directive

This product is controlled under the Seveso Directive.

### Danger criteria

| Category |
|----------|
| E1       |

### National regulations

### International regulations

### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

### Montreal Protocol

Not listed.

### Stockholm Convention on Persistent Organic Pollutants

Not listed.

### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

|                                |                                                                                                      |
|--------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Australia</b>               | : All components are listed or exempted.                                                             |
| <b>Canada</b>                  | : All components are listed or exempted.                                                             |
| <b>China</b>                   | : All components are listed or exempted.                                                             |
| <b>Eurasian Economic Union</b> | : <b>Russian Federation inventory</b> : Not determined.                                              |
| <b>Japan</b>                   | : <b>Japan inventory (CSCL)</b> : Not determined.<br><b>Japan inventory (ISHL)</b> : Not determined. |
| <b>New Zealand</b>             | : All components are listed or exempted.                                                             |
| <b>Philippines</b>             | : All components are listed or exempted.                                                             |
| <b>Republic of Korea</b>       | : All components are listed or exempted.                                                             |
| <b>Taiwan</b>                  | : All components are listed or exempted.                                                             |
| <b>Thailand</b>                | : Not determined.                                                                                    |
| <b>Turkey</b>                  | : All components are listed or exempted.                                                             |
| <b>United States</b>           | : All components are active or exempted.                                                             |
| <b>Viet Nam</b>                | : All components are listed or exempted.                                                             |

**15.2 Chemical safety assessment** : This product contains substances for which Chemical Safety Assessments are still required.

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

### Abbreviations and acronyms

: ATE = Acute Toxicity Estimate  
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
DMEL = Derived Minimal Effect Level  
DNEL = Derived No Effect Level  
EUH statement = CLP-specific Hazard statement  
N/A = Not available  
PBT = Persistent, Bioaccumulative and Toxic  
PNEC = Predicted No Effect Concentration  
RRN = REACH Registration Number  
SGG = Segregation Group  
vPvB = Very Persistent and Very Bioaccumulative

### Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

| Classification          | Justification      |
|-------------------------|--------------------|
| Acute Tox. 4, H302      | Calculation method |
| Acute Tox. 4, H312      | Calculation method |
| Skin Corr. 1B, H314     | Calculation method |
| Eye Irrit. 2, H319      | Calculation method |
| Skin Sens. 1, H317      | Calculation method |
| Aquatic Acute 1, H400   | Calculation method |
| Aquatic Chronic 1, H410 | Calculation method |

### Full text of abbreviated H statements

|      |                                                       |
|------|-------------------------------------------------------|
| H302 | Harmful if swallowed.                                 |
| H312 | Harmful in contact with skin.                         |
| H314 | Causes severe skin burns and eye damage.              |
| H317 | May cause an allergic skin reaction.                  |
| H319 | Causes serious eye irritation.                        |
| H400 | Very toxic to aquatic life.                           |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H412 | Harmful to aquatic life with long lasting effects.    |

### Full text of classifications [CLP/GHS]

|                   |                                                 |
|-------------------|-------------------------------------------------|
| Acute Tox. 4      | ACUTE TOXICITY - Category 4                     |
| Aquatic Acute 1   | SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1  |
| Aquatic Chronic 1 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 |
| Aquatic Chronic 3 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 |
| Eye Irrit. 2      | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2  |
| Skin Corr. 1B     | SKIN CORROSION/IRRITATION - Category 1B         |
| Skin Sens. 1      | SKIN SENSITISATION - Category 1                 |

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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.