SAFETY DATA SHEET



CIRCUITWORKS® CONDUCTIVE EPOXY - Part B (UK - Great Britain)

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

1.1 Product identifier

Product name : CIRCUITWORKS® CONDUCTIVE EPOXY - Part B (UK - Great Britain)

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.

Uses advised against

Not applicable.

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 : Importer/Only Representative

responsible for this SDS 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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SECTION 1: Identification of the substance/mixture and of the company/undertaking

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

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : EMERGENCY HEALTH INFORMATION:

United Kingdom (England or Wales) 0845 46 47 or Scotland 08454 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 UK 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 UK CLP Regulation SI 2019/720 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

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

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SECTION 2: Hazards identification

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.

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

: Not applicable.

fastenings

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	Type
silver	EC: 231-131-3 CAS: 7440-22-4	≥75 - ≤90	Aquatic Acute 1, H400 (M=1000) Aquatic Chronic 1, H410 (M=1000)	[1] [2]
2-piperazin-1-ylethylamine	EC: 205-411-0 CAS: 140-31-8 Index: 612-105-00-4	≥10 - ≤25	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 3, H412	[1]
			See Section 16 for the full text of the H statements declared above.	

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.

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SECTION 3: Composition/information on ingredients

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. 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 <u>Over-exposure signs/symptoms</u>

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

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SECTION 4: First aid measures

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.

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 (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste

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SECTION 6: Accidental release measures

disposal.

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.

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 : Not available.

solutions

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
silver	EH40/2005 WELs (United Kingdom (UK), 1/2020). TWA: 0.1 mg/m³ 8 hours.

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures

: 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.

DNELs/DMELs

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SECTION 8: Exposure controls/personal protection

		Value	Population	Effects
DNEL	Long term	0.04 mg/m ³	General	Systemic
	Inhalation		population	
DNEL	Long term	0.1 mg/m ³	Workers	Systemic
DNEL	Long term Oral			Systemic
סאבו	Lammatanna Danissa			1 1
DINEL	Long term Dermai			Local
DNEI	Long term Dermal			Local
DIVLL	Long term Demial		VVOINCIS	Local
DNEI	Short term Dermal		General	Local
	one com bornia	cm ²		
DNEL	Short term Dermal	0.04 mg/	Workers	Local
		cm²		
DNEL	Long term Oral		General	Systemic
DNEL		0.9 mg/m ³		Systemic
DAIEI		4.5//.		0
DNEL	Short term Oral			Systemic
DNEI	Long term Dermal			Systemic
DIVLL	Long term berman			- Cystollilo
DNEL	Long term Dermal			Systemic
		bw/day		
DNEL	Long term	3.6 mg/m³	Workers	Systemic
	Inhalation			
DNEL	Short term	5.3 mg/m ³	General	Systemic
DATE:		40 "		
DNFL	Snort term Dermal			Systemic
DNEI	Short torm Dormal	,		Systemic
DINEL			VVOIKEIS	Systemic
DNFI	Short term		Workers	Systemic
J.,		9/		2,00011110
	DNEL DNEL DNEL DNEL DNEL DNEL DNEL DNEL	DNEL Long term Inhalation Long term Oral DNEL Long term Dermal DNEL Long term Dermal DNEL Short term Dermal DNEL Short term Dermal DNEL Long term Oral DNEL Long term Inhalation DNEL Long term Dermal DNEL Short term Dermal DNEL Short term Inhalation DNEL Short term Dermal DNEL Short term Dermal DNEL Short term Dermal	DNEL Long term Oral 1.2 mg/kg bw/day DNEL Long term Dermal 0.003 mg/cm² DNEL Long term Dermal 0.006 mg/cm² DNEL Short term Dermal 0.02 mg/cm² DNEL Short term Dermal 0.04 mg/cm² DNEL Long term Oral 0.3 mg/kg bw/day DNEL Long term Oral 0.9 mg/m³ Inhalation DNEL Short term Dermal 1.5 mg/kg bw/day DNEL Long term Dermal 1.7 mg/kg bw/day DNEL Long term Dermal 3.3 mg/kg bw/day DNEL Long term Dermal 3.6 mg/m³ Inhalation DNEL Short term Dermal 5.3 mg/m³ Inhalation DNEL Short term Dermal 10 mg/kg bw/day DNEL Short term Dermal 10 mg/kg bw/day DNEL Short term Dermal 20 mg/kg bw/day DNEL Short term Dermal 21.4 mg/m³	DNEL Long term Inhalation DNEL Long term Oral 1.2 mg/kg bw/day population DNEL Long term Dermal 0.003 mg/cm² population DNEL Long term Dermal 0.006 mg/cm² population DNEL Short term Dermal 0.02 mg/cm² population DNEL Short term Dermal 0.04 mg/cm² population DNEL Long term Oral 0.03 mg/kg bw/day population DNEL Long term 0.09 mg/m³ General population DNEL Long term 0.9 mg/m³ General population DNEL Short term Oral 1.5 mg/kg General population DNEL Long term 0.7 mg/kg General population DNEL Short term 0.0 mg/kg bw/day

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

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SECTION 8: Exposure controls/personal 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 : 121°C (249.8°F)

range

Flammability (solid, gas) : Not available.

Upper/lower flammability or : Not available.

explosive limits

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/ : Not applicable.

water

Vapour pressure

	Vapour Pressure at 20°C			Vap	our pressui	re at 50°C
Ingredient name	mm Hg	kPa	Method	mm Hg	kPa	Method
2-piperazin-1-ylethylamine	0.04	0.0053				

Evaporation rate : <1 (butyl acetate = 1)

Relative density : 4.1

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SECTION 9: Physical and chemical properties

Vapour density : >1 [Air = 1]

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

Particle characteristics

: Not available.

Median particle size : Not applicable.

9.2 Other information : Not applicable.

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 toxicological effects

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	-
	Skin - Severe irritant	Rabbit	-	mg 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

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SECTION 11: Toxicological information

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

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 : Not available.

effects

Potential delayed effects : Not available.

Long term exposure

Potential immediate : Not available.

effects

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.

Other information : Not available.

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SECTION 12: Ecological information

12.1 Toxicity

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

Conclusion/Summary: Not available.

12.2 Persistence and degradability

Conclusion/Summary: Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
silver	-	70	low
2-piperazin-1-ylethylamine	-1.48	-	low

12.4 Mobility in soil

Soil/water partition coefficient (Koc)

: 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 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

Packaging

Methods of disposal

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

: 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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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	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 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 UK (GB)/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.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

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

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

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SECTION 15: Regulatory information

Category

E1

EU regulations

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

Air

Industrial emissions

: Listed

(integrated pollution prevention and control) -

Water

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.

Japan

Inventory list

Australia : All components are listed or exempted. Canada : All components are listed or exempted. China : All components are listed or exempted.

Eurasian Economic Union

: Japan inventory (CSCL): Not determined.

: Russian Federation inventory: Not determined.

Japan inventory (ISHL): Not determined. : All components are listed or exempted.

New Zealand Philippines : All components are listed or exempted. Republic of Korea : All components are listed or exempted. **Taiwan** : All components are listed or exempted.

Thailand Not determined.

Turkey : All components are listed or exempted. **United States** : All components are active or exempted. **Viet Nam** : 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

GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019

No. 720 and amendments

DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level

EUH statement = GB CLP-specific Hazard statement

N/A = Not available

PBT = Persistent, Bioaccumulative and Toxic PNEC = Predicted No Effect Concentration

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SECTION 16: Other information

RRN = REACH Registration Number

SGG = Segregation Group

vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification

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

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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revision

Date of previous issue : 1/4/2023

Version : 6

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.

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