



Safety Data Sheet

Section 1. Identification

Product name : ALPHA® CVP-390V Solder Paste Innolot 88.8-4-M17
Product code : 264474
Product type : Solid.
Date of issue/Date of revision : March 30 2021.

Manufacturer - Supplier	Telephone no.:	Emergency phone:
Alpha Assembly Solutions Inc. Global Headquarters 300 Atrium Drive Somerset, New Jersey 08873	Toll Free: (800) 367-5460 Main Phone: (908) 791-3000	DOMESTIC NORTH AMERICA 202-464-2554
Macdermid Performance Solution Hong Kong Limited / Alpha Assembly Solutions 8/F., Paul Y. Centre, 51 Hung To Road, Kwun Tong, Kowloon, Hong Kong	852-31903100	852-31903100 INTERNATIONAL, CALL Carechem 24: +65 3158 1074
MacDermid Performance Solutions Japan K.K. 480-28 Higashitoyoda, Hiratsuka-shi, Kanagawa, Japan	81-463-53-3333	81-463-53-3333 INTERNATIONAL, CALL Carechem 24: +65 3158 1074
Alpha Assembly Solutions Korea Limited 1Ra 310, Sihwa Industrial Complex, 40, Okgucheonseo-ro, 131 beon-gil, Siheung-Si, Gyeonggi-Do, Korea	82-31-499-1451 Ext 2	82-31-499-1451 Ext 2 INTERNATIONAL, CALL Carechem 24: +65 3158 1074
Alpha Assembly Solutions (Shanghai) Trading Co., Ltd. 2 floor, 5 Building, No.1151 Lianxi Road, Pudong New Area Shanghai 201204 P.R.China	86-21-63900600	86-532-83889090 INTERNATIONAL, CALL Carechem 24: +65 3158 1074
Alpha Assembly Solutions (Taiwan) Limited No.20, Lane 12, Sec.2, Nan-Shan Rd., Luzhu District, Taoyuan City, 33860 Taiwan	886-3-3222721	886-3-3222721 INTERNATIONAL, CALL Carechem 24: +65 3158 1074
MacDermid Performance Solutions, Cookson India Private Limited. Developed Plot no 16, North Phase, SIDCO Industrial estate, Ambattur, Chennai - 600098, India	044-26252666	044-26252666 INTERNATIONAL, CALL Carechem 24: +65 3158 1074
Alpha Assembly Solutions 14 Tuas Avenue 10 Singapore 639138	65 68611977	65 68611977 INTERNATIONAL, CALL Carechem 24: +65 3158 1074
Alpha Assembly Solutions (Shenzhen) Co., Ltd. Tang Xia Yong Village, Songgang Town Baoan District, Shenzhen, Peoples Republic of China Postal Code: 518105	86 755 2705 1100	86 532 83889090 INTERNATIONAL, CALL Carechem 24: +65 3158 1074
Alpha Advanced Materials 14 Joo Koon Crescent Singapore 629014	65 6430 0700	65 6430 0700 INTERNATIONAL, CALL Carechem 24: +65 3158 1074
Active Components (NZ) Ltd (Distributor) 2/14 Canaveral Drive Rosedale (0632), Auckland New Zealand	Tel: +64 9 443 9500	National Poisons Centre Free Phone: 0800 764 766 (0800 POISON) INTERNATIONAL, CALL Carechem 24: +65 3158 1074

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Section 2. Hazards identification

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2

GHS label elements

Hazard pictograms



Signal word

: Warning

Hazard statements

: Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
Suspected of causing cancer.

Precautionary statements

Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear protective clothing. Wear eye or face protection. Avoid breathing dust. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response

: IF exposed or concerned: Get medical attention. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical 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 attention.

Storage

: Store locked up.

Disposal

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

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
tin	80-100	7440-31-5
Glycol Ether	1-10	-
silver	1-10	7440-22-4
bismuth	1-10	7440-69-9
Rosin/Resin	1-10	-
Rosin/Resin	1-10	-
antimony	1-10	7440-36-0
Organic acid	1-10	-
Rosin/Resin	0.1-1.0	-
Nickel	0.1-1.0	7440-02-0

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.

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

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Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Get medical attention. 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.
- Skin contact** : 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 15 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Get medical attention. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

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

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 spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized 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".

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 and materials for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

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. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. 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.
- 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
tin	ACGIH TLV (United States, 3/2017). TWA: 2 mg/m ³ , (as Sn) 8 hours.
silver	ACGIH TLV (United States, 3/2017). Notes: Substances for which the TLV is higher than the OSHA Permissible Exposure Limit (PEL) and/or the NIOSH Recommended Exposure Limit (REL). See CFR 58(124) :36338-33351, June 30, 1993, for revised OSHA PEL. TWA: 0.1 mg/m ³ 8 hours. Form: Dust and fumes
antimony	ACGIH TLV (United States, 3/2017). Notes: as Sb TWA: 0.5 mg/m ³ , (as Sb) 8 hours.
Nickel	ACGIH TLV (United States, 3/2017). Notes: Refers to Appendix A -- Carcinogens. Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract. 1998 Adoption. TWA: 1.5 mg/m ³ 8 hours. Form: Inhalable fraction

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
tin	TW Ministry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 6/2014). Notes: as Sn STEL: 4 mg/m ³ , (as Sn) 15 minutes. TWA: 2 mg/m ³ , (as Sn) 8 hours.
silver	TW Ministry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 6/2014). Notes: as Ag STEL: 0.03 mg/m ³ , (as Ag) 15 minutes. Form: Dust and fumes TWA: 0.01 mg/m ³ , (as Ag) 8 hours. Form: Dust and fumes
antimony	TW Ministry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 6/2014). Notes: as Sb STEL: 1.5 mg/m ³ , (as Sb) 15 minutes. TWA: 0.5 mg/m ³ , (as Sb) 8 hours.
Nickel	TW Ministry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 6/2014). Notes: as Ni STEL: 2 mg/m ³ , (as Ni) 15 minutes. TWA: 1 mg/m ³ , (as Ni) 8 hours.

Ingredient name	Exposure limits
tin	ACGIH TLV (United States, 3/2017). TWA: 2 mg/m ³ , (as Sn) 8 hours.
silver	ACGIH TLV (United States, 3/2017). Notes: Substances for which the TLV is higher than the OSHA Permissible Exposure Limit (PEL) and/or the NIOSH Recommended Exposure Limit (REL). See CFR 58(124) :36338-33351, June 30, 1993, for revised OSHA PEL. TWA: 0.1 mg/m ³ 8 hours. Form: Dust and fumes
antimony	GBZ 2.1 (China, 4/2007). Notes: as Sb PC-TWA: 0.5 mg/m ³ , (as Sb) 8 hours.
Nickel	GBZ 2.1 (China, 4/2007). PC-TWA: 1 mg/m ³ , (as Ni) 8 hours.

Ingredient name	Exposure limits
tin	Ministry of Employment and Labor (Republic of Korea, 8/2016). TWA: 2 mg/m ³ 8 hours.
silver	Ministry of Employment and Labor (Republic of Korea, 8/2016). TWA: 0.1 mg/m ³ 8 hours.
antimony	Ministry of Employment and Labor (Republic of Korea, 8/2016). Notes: as Sb TWA: 0.5 mg/m ³ , (as Sb) 8 hours.
Nickel	Ministry of Employment and Labor (Republic of Korea, 8/2016). TWA: 1 mg/m ³ 8 hours.

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
tin	DOSH USECHH (Malaysia, 4/2000). TWA: 2 mg/m ³ 8 hours.
silver	DOSH USECHH (Malaysia, 4/2000). TWA: 0.1 mg/m ³ 8 hours.
antimony	DOSH USECHH (Malaysia, 4/2000). Notes: as Sb TWA: 0.5 mg/m ³ , (as Sb) 8 hours.
Nickel	DOSH USECHH (Malaysia, 4/2000). TWA: 1.5 mg/m ³ 8 hours. Form: Inhalable fraction

Ingredient name	Exposure limits
tin	Workplace Safety and Health Act (Singapore, 2/2006). PEL (long term): 2 mg/m ³ 8 hours.
silver	Workplace Safety and Health Act (Singapore, 2/2006). PEL (long term): 0.1 mg/m ³ 8 hours.
antimony	Workplace Safety and Health Act (Singapore, 2/2006). Notes: Sb PEL (long term): 0.5 mg/m ³ , (Sb) 8 hours.
Nickel	Workplace Safety and Health Act (Singapore, 2/2006). PEL (long term): 1 mg/m ³ 8 hours.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor 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.

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.

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.

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.

Section 8. Exposure controls/personal protection

- 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.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Solid. [Paste.]
- Color** : Gray.
- Odor** : Mild.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: >93.33°C (>200°F)
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : Not available.
- Solubility** : Insoluble in the following materials: cold water and hot water.
- VOC** : 17.4 g/l
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Not available.

Section 10. Stability and reactivity

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

Section 11. Toxicological information

Routes of entry : Dermal contact. Inhalation. Ingestion.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
tin	LD50 Oral	Rat	>2000 mg/kg	-
Glycol Ether	LD50 Oral	Rat - Female	2600 mg/kg	-
silver	LD Oral	Guinea pig	>5 g/kg	-
	LD Oral	Mouse	>10 g/kg	-
	LD50 Oral	Mouse	100 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
bismuth	LD50 Oral	Rat	5 g/kg	-
Rosin/Resin	LD50 Dermal	Rabbit	>2.5 g/kg	-
	LD50 Oral	Mouse	>3 g/kg	-
	LD50 Oral	Rat	>4 g/kg	-
Rosin/Resin	LD50 Oral	Rat	>2000 mg/kg	-
antimony	LD50 Oral	Rat	100 mg/kg	-
Rosin/Resin	LD50 Oral	Rat	>2000 mg/kg	-
Nickel	LDLo Oral	Guinea pig	5 mg/kg	-
	LDLo Oral	Mouse	500 mg/kg	-
	LDLo Oral	Rat	500 mg/kg	-

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Nickel	Category 1	Inhalation	Not determined

Aspiration hazard

Not available.

Information on the 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 skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

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Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No specific data.

Delayed and immediate effects and also 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.

General	: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	35864 mg/kg
Dermal	159438.8 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Glycol Ether silver	EC50 315 mg/l	Algae	96 hours
	EC50 >100 mg/l	Daphnia	48 hours
	LC50 564 mg/l	Fish	96 hours
	Acute EC50 1.4 µg/l Marine water	Algae - Chroomonas sp.	4 days
	Acute EC50 0.0092 mg/l	Daphnia	48 hours
	Acute EC50 0.24 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 11 µg/l Fresh water	Crustaceans - Ceriodaphnia reticulata	48 hours
Acute LC50 0.00213 mg/l	Fish	96 hours	

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Section 12. Ecological information

Rosin/Resin antimony	Acute LC50 0.00238 mg/l	Fish	96 hours
	Acute LC50 0.00276 mg/l	Fish	96 hours
	Acute LC50 0.00312 mg/l	Fish	96 hours
	Acute LC50 0.00342 mg/l	Fish	96 hours
Nickel	Chronic NOEC 5 mg/l Marine water	Algae - Glenodinium halli	72 hours
	LC50 60.3 mg/l	Fish	96 hours
	Acute LC50 18000 µg/l	Daphnia - Daphnia magna	48 hours
	Acute LC50 22 mg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 2 ppm Marine water	Algae - Macrocystis pyrifera - Young	4 days
	Acute EC50 450 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute EC50 1000 µg/l Marine water	Daphnia - Daphnia magna	48 hours
	Acute IC50 0.31 mg/l Marine water	Crustaceans - Americamysis bahia - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 47.5 ng/L Fresh water	Fish - Heteropneustes fossilis	96 hours
	Chronic NOEC 100 mg/l Marine water	Algae - Glenodinium halli	72 hours
Chronic NOEC 3.5 µg/l Fresh water	Fish - Cyprinus carpio	4 weeks	

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Glycol Ether	1.896	-	low
silver	-	70	low
Rosin/Resin	3.42	-	low
Rosin/Resin	6.04	-	high
Rosin/Resin	2.7	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

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

Section 13. Disposal considerations

Disposal methods : 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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Section 14. Transport information

	UN	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

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.

Section 15. Regulatory information

Taiwan

SDS complies with the Regulation of Labeling and Hazard Communication of Hazardous Chemicals

List of chemicals reputed to be a "threat of imminent danger" : This product contains substances considered to be a "Threat of imminent danger": tin, silver, antimony.

OSHA Article 29 : None of the components are listed.

OSHA Article 30 : None of the components are listed.

China

SDS complies with the General Rules for Classification and Hazardous Communication of Chemicals GB-13690-2009, GB-30000 series, and GB/T 16438-2008.

List of Goods banned for Importing

None of the components are listed.

Inventory of Hazardous Chemicals

Ingredient name	CAS number	Status
Antimony powder	7440-36-0	Listed

List of Goods banned for Exporting

None of the components are listed.

List of Toxic Chemicals Severely Restricted for Importing & Exporting by China

None of the components are listed.

Inventory of Highly Toxic Chemicals

Ingredient name	Status
Antimony and compounds	Listed

Catalogue of Hazardous Chemicals of Priority Management

None of the components are listed.

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Section 15. Regulatory information

Catalogue of Priority Hazardous Chemicals for Environmental Management

None of the components are listed.

Other China Regulations

Catalogue of Hazardous Chemicals (2015)
 Classification & code of dangerous goods (GB 6944-2012)
 Production Safety Law of the People's Republic of China
 Law of the People's Republic of China on Prevention and Control of Occupational Diseases
 Environmental Protection Law of the People's Republic of China
 Regulation on Work Safety Licenses
 Classification of transportation packing type of dangerous goods GB/T 15098-2008
 General rules for classification and hazardous communication of chemicals GB 13690-2009
 List of Dangerous Goods GB12268-2012
 Occupational Exposure Limits (OELs) for hazardous chemicals GBZ 2.1-2007
 Hazardous Chemicals Safety Management Ordinance China (2013 revised)
 Safety data sheet for chemical products: content & order of sections GB/T 16483-2008
 Rules for classification and labelling of chemicals GB30000-2013
 Guidance on the compilation of safety data sheet for chemical products GB/T 17519-2013

Republic of Korea

A. Regulation according to ISHA

ISHA article 37 : None of the components are listed.
(Harmful substances prohibited from manufacture)

ISHA article 38 : None of the components are listed.
(Harmful substances requiring permission)

Article 2 of Youth Protection Act on Substances Hazardous to Youth : Not applicable.

Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:

Tin
 silver
 Antimony
 nickel

ISHA Enforcement Regs Annex 11-3 (Exposure standards established for harmful factors) : None of the components are listed.

ISHA Enforcement Regs Annex 11-4 (Harmful factors subject to Work Environment Measurement) : The following components are listed: Tin, metal; Silver, metal; Antimony and compounds

ISHA Enforcement Regs Annex 12-2 (Harmful Factors Subject to Special Health Check-up) : The following components are listed: Tin and compounds; Antimony and compounds

Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control) : The following components are listed: Tin and its compounds; Silver and its compounds; Antimony and its compounds (Antimony trioxide); Nickel and its compounds (Insoluble inorganic compounds)

B. Regulation according to Chemicals Control Act

Section 15. Regulatory information

K-Reach Article 20 (Toxic chemicals) : Not applicable

K-Reach Article 27 (Prohibited) : None of the components are listed.

K-Reach Article 27 (Restricted) : None of the components are listed.

Existing Chemical Substances Subject to Registration : None of the components are listed.

CSCA Article 11 (TRI) : The following components are listed: Tin and its compounds; Silver and its compounds; Antimony and its compounds; Nickel and its compounds

CSCA Article 39 (Accident Precaution Chemicals) : None of the components are listed.

C. Dangerous Materials Safety Management Act : Not available.

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

Singapore - hazardous chemicals under government control

None.

Japan

Fire Service Law

Category	Substance name/Type	Danger category	Signal word	Designated quantity
Category IV	Material that contains: Class III petroleum	III	Flammable - Keep Fire Away	2000 L

Fire Service Law - Obstructive materials : Not listed

Designated combustibles : Not available.

Designated quantity : Not available.

Maritime Safety Law

Notification Regulating Transportation of Dangerous Materials by Sea

None of the components are listed.

Container class

None of the components are listed.

ISHL

Use of specified chemical substances

None of the components are listed.

Label requirements

Ingredient name	%	Status
Tin and its compounds	≥75 - ≤90	Listed
Silver and its compounds (water-soluble)	≤5.0	Listed
Antimony and its compounds	≤3.0	Listed

Chemicals requiring notification

Ingredient name	%	Status
Tin and its compounds	≥75 - ≤90	Listed
Silver and its compounds (water-soluble)	≤5.0	Listed
Antimony and its compounds	≤3.0	Listed
Copper and its compounds	<1.0	Listed
Nickel and its compounds	≤0.30	Listed

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Section 15. Regulatory information

Carcinogen

None of the components are listed.

Mutagen

None of the components are listed.

Corrosive liquid : Not listed

ISHL Appendix 1 : Not available.

Lead regulation : Not listed

**Prevention of Tetraalkyl
Lead Poisoning** : Not listed

**Harmful Substances
Subject to Obtaining
Permission for
Manufacturing** : Not listed

**Harmful Substances,
Prohibited for
Manufacturing** : Not listed

Dangerous Substances : Combustible

**Organic solvents
poisoning prevention** : Not available.

Chemical Substances Control Law (CSCL)

None of the components are listed.

Poisonous and Deleterious Substances

None of the components are listed.

Pollutant Release and Transfer Registers (PRTR)

Ingredient name	%	Status	
silver and its water-soluble compounds	3.4	Class 1	
antimony and its compounds	1.2	Class 1	

JSOH Carcinogen : Not listed

**Law Concerning Prevention
of Pollution of the Ocean
and Maritime Disaster** : Not available.

Road law : Not available.

**List of Specially Controlled
Industrial Waste** : Not listed

**Occupational Safety and
Health Law** : Not available.

Explosives Control Law

None of the components are listed.

**High Pressure Gas Control
Law** : Not available.

**Safety, health and
environmental regulations
specific for the product** : No known specific national and/or regional regulations applicable to this product (including its ingredients).

International lists

National inventory

Continued on next page

Section 15. Regulatory information

Australia	: Not determined.
Canada	: At least one component is not listed in DSL but all such components are listed in NDSL.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: All components are listed or exempted.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: All components are listed or exempted.
Viet Nam	: Not determined.

Section 16. Other information

History

Date of issue/Date of revision	: March 30 2021.
Date of previous issue	: July 6 2020.
Version	: 2
Prepared by	: Regulatory Affairs Department enthone.msds@macdermidenthone.com

Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations
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Procedure used to derive the classification

Classification	Justification
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2A, H319	Calculation method
Skin Sens. 1, H317	Calculation method
Carc. 2, H351	Calculation method

References	: Not available.
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✔ 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.

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Section 16. Other information

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