Safety Data Sheet

FOR REGULATORY AND SDS QUESTIONS (U.S. AND CANADA):
CALL THE PRODUCT STEWARDSHIP LINE
1- 908-791-2336 9 AM TO 6 PM ET (Mon-Fri)

Section 1. Identification

Product name : **HM531 Sn62Pb36Ag2 Solder Paste**
Product code : HM531Alloy256
Product type : Solid.
Date of issue/Date of revision : January 23 2022.

Manufacturer - Supplier	Telephone no.:	Emergency phone:
Alpha Assembly Solutions Inc. 800 West Thorndale Avenue Itasca, IL 60143 USA	1-800-253-7837 1-630-616-4000	DOMESTIC NORTH AMERICA 202-464-2554
ALPHA METALS MEXICO SA DE CV Ave Nafta 800, Parque Industrial STIVA Apodaca NL 66600 Mexico	Tel: +52 81 1156-6602	Tel: 01 800 022 1400 Tel: +52 55 5559-1588
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Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture :
SKIN IRRITATION - Category 2
SERIOUS EYE DAMAGE - Category 1
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION (Fertility) - Category 1A
TOXIC TO REPRODUCTION (Unborn child) - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (nervous system, reproductive organs) - Category 1
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :
Causes serious eye damage.
Causes skin irritation.
May damage fertility or the unborn child.
Suspected of causing cancer.
Causes damage to organs through prolonged or repeated exposure. (nervous system, reproductive organs)
Very toxic to aquatic life with long lasting effects.

Precautionary statements

Continued on next page

Section 2. Hazards identification

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Avoid release to the environment. Do not breathe dust. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response : Collect spillage. Get medical attention if you feel unwell. 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 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. Immediately call a POISON CENTER or physician.

Storage : Store locked up.

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

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
tin	50-60	7440-31-5
lead	30-40	7439-92-1
surfactant	1-10	-
silver	1-10	7440-22-4
Organic Additive	1-10	-
Alkoxylated alcohol.	1-10	-
2,2-bis(hydroxymethyl)propionic acid	1-10	4767-03-7
tetra ethylene glycol ether	0.1-1.0	-
Amine	0.1-1.0	-
surfactant	0.1-1.0	-

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. 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 mists 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.

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Section 4. First aid measures

Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of 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. Chemical burns must be treated promptly by a physician. 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. 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. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

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

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.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that mists 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.

See toxicological information (Section 11)

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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 : 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 thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

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.

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Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. 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. 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.

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/m³, (as Sn) 8 hours. **NIOSH REL (United States, 10/2016).** TWA: 2 mg/m³, (as Sn) 10 hours. **OSHA PEL (United States, 6/2016).** TWA: 2 mg/m³, (as Sn) 8 hours.
lead	**OSHA PEL (United States, 5/2005).** TWA: 0.05 mg/m³ 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 50 µg/m³, (as Pb) 8 hours. **ACGIH TLV (United States, 3/2017). Notes: as Pb** TWA: 0.05 mg/m³, (as Pb) 8 hours. **OSHA PEL (United States, 6/2016). Notes: as Pb** TWA: 50 µg/m³, (as Pb) 8 hours. **NIOSH REL (United States, 10/2016). Notes: See Appendix C - Supplemental Exposure Limits Note: The REL and PEL also apply to other lead compounds (as Pb).** TWA: 0.05 mg/m³ 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/m³ 8 hours. Form: Dust and fumes **NIOSH REL (United States, 10/2016). Notes: as Ag** TWA: 0.01 mg/m³, (as Ag) 10 hours. Form: METAL DUST AND SOLUBLE **OSHA PEL 1989 (United States, 3/1989).** TWA: 0.01 mg/m³, (as Ag) 8 hours. **OSHA PEL (United States, 6/2016).**

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Section 8. Exposure controls/personal protection

Amine	TWA: 0.01 mg/m³, (as Ag) 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 3 ppm 8 hours. TWA: 15 mg/m³ 8 hours. TWA: 15 mg/m³ 8 hours. Form: All forms TWA: 3 ppm 8 hours. Form: All forms **NIOSH REL (United States, 10/2016).** TWA: 3 ppm 10 hours. TWA: 15 mg/m³ 10 hours. **NIOSH REL (United States, 6/2001).** TWA: 15 mg/m³ 10 hours. Form: All forms TWA: 3 ppm 10 hours. Form: All forms **ACGIH TLV (United States, 3/2017). Absorbed through skin.** TWA: 1 mg/m³ 8 hours. Form: Inhalable fraction and vapor **ACGIH TLV (United States, 2/2003). Absorbed through skin.** **Notes: 1994-1995 Adoption** TWA: 2 mg/m³ 8 hours. Form: All forms TWA: 0.46 ppm 8 hours. Form: All forms

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. 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.

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Section 9. Physical and chemical properties

Appearance

Physical state : Solid. [Paste.]

Color : Silver. Gray.

Odor : Mild.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : 240°C (464°F)

Flash point : Closed cup: 91°C (195.8°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 : Not available.

VOC : 50.2 g/l

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

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not available.

Aerosol product

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.

Incompatibility with various substances : Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

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	-
lead	LD50 Oral	Rat	>5000 mg/kg	-
surfactant	LD50 Oral	Rat	410 mg/kg	-
	LD50 Oral	Rat	>500 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	-
Organic Additive	LD50 Oral	Rat	410 mg/kg	-

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Section 11. Toxicological information

	LD50 Oral	Rat	>4300 mg/kg	-
Alkoxylated alcohol.	LD50 Oral	Rat	1260 mg/kg	-
	LD50 Oral	Rat	1260 mg/kg	-
	LD50 Oral	Rat	2070 mg/kg	-
	LDLo Dermal	Rabbit	1260 mg/kg	-
2,2-bis(hydroxymethyl) propionic acid	LD50 Oral	Rat	>2000 mg/kg	-
tetra ethylene glycol ether	LD50 Oral	Rat	5140 mg/kg	-
Amine	LD50 Dermal	Rabbit	8180 mg/kg	-
	LD50 Oral	Mouse	3300 mg/kg	-
	LD50 Oral	Rabbit	2200 mg/kg	-
	LD50 Oral	Rat	680 mg/kg	-
surfactant	LD50 Dermal	Rat	>10 g/kg	-
	LD50 Oral	Rat	500 mg/kg	-
	LD50 Oral	Rat	500 mg/kg	-
	LD50 Oral	Rat	620 mg/kg	-
	LD50 Oral	Rat	689 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Organic Additive	Eyes - Mild irritant	Mammal - species unspecified	-	12.5 Percent	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
Alkoxylated alcohol.	Eyes - Moderate irritant	Rabbit	-	24 hours 100 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 microliters	-
tetra ethylene glycol ether	Eyes - Mild irritant	Rabbit	-	500 milligrams	-
Amine	Eyes - Severe irritant	Rabbit	-	24 hours 750 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	5500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	50 milligrams	-
surfactant	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 100 microliters	-

Sensitization

Not available.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
lead	-	Subject: Mammalian-Animal	Equivocal
Organic Additive	-	Subject: Bacteria	Positive

Carcinogenicity

No applicable toxicity data

Additional information:

Classification

Product/ingredient name	OSHA	IARC	NTP
lead	-	2B	Reasonably anticipated to be a human carcinogen.
Amine	-	2B	-

Reproductive toxicity

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Section 11. Toxicological information

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
lead	-	-	Equivocal	Rat - Female	Oral: 520 mg/kg	-
	-	-	Equivocal	Rat - Female	Inhalation: 3 mg/m³	24 hours per day
	Equivocal	-	-	Mouse - Female	Oral: 300 mg/kg	-
	-	Equivocal	-	Mouse	Oral: 4099.2 mg/kg	-
tetra ethylene glycol ether	-	Equivocal	-	Mouse - Male	Inhalation: 1000 ppm	7 hours per day
Amine	Positive	-	Positive	Rat - Female	Subcutaneous: 1500 mg/kg	9 days During Pregnancy; 6 hours per day
	-	Positive	-	Rat - Male	Oral: 2500 ppm	13 weeks; 7 days per week

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
lead	Equivocal - Oral	Mammal - species unspecified	2118 mg/kg	-
	Equivocal - Inhalation	Rat	10 mg/m³	24 hours per day

Specific target organ toxicity

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
lead	Category 1	Not determined	nervous system and reproductive organs
Amine	Category 2	Not determined	blood system, kidneys and liver

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

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Section 11. Toxicological information

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

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

Product/ingredient name	Result	Species	Dose	Exposure
Amine	Chronic TD50 Oral Chronic TD50 Oral	Mouse Rat	1000 mg/kg 25 mg/kg	- -

General : Causes damage to organs through prolonged or repeated exposure.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : May damage the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : May damage fertility.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	10035.1 mg/kg

Section 12. Ecological information

Toxicity

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Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
lead	Acute EC50 105 ppb Marine water	Algae - Chaetoceros sp. - Exponential growth phase	72 hours
	Acute EC50 0.489 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 8000 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute LC50 530 µg/l Fresh water	Crustaceans - Ceriodaphnia reticulata	48 hours
	Acute LC50 4400 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 0.44 ppm Fresh water	Fish - Cyprinus carpio - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 0.25 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.03 µg/l Fresh water	Fish - Cyprinus carpio	4 weeks
silver	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
	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
	Chronic NOEC 5 mg/l Marine water	Algae - Glenodinium halli	72 hours
Alkoxylated alcohol.	Acute LC50 1 to 10 mg/l	Fish	96 hours
2,2-bis(hydroxymethyl) propionic acid	Acute EC50 38900 mg/l	Daphnia	24 hours
	Acute LC50 >5000 mg/l	Fish	48 hours
Amine	Acute EC50 12 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 28800 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 100 mg/l	Daphnia	96 hours
	Acute LC50 >100 mg/l	Daphnia	96 hours
	Acute LC50 2150 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 100 mg/l	Fish	96 hours
	Acute LC50 >100 mg/l	Fish	96 hours
	Acute LC50 1370 mg/l	Fish	96 hours
	Acute LC50 1480 mg/l	Fish	96 hours
surfactant	Acute LC50 2.6 µg/l Fresh water	Crustaceans - Thamnocephalus platyurus - Nauplii	48 hours
	Acute LC50 2350 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 650 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Alkoxylated alcohol.	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
silver	-	70	low
Organic Additive	2.6	-	low
2,2-bis(hydroxymethyl) propionic acid	-1.1	-	low
Amine	-1.43	-	low

Mobility in soil

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

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

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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.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	UN	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.

Additional information - TDG Classification	

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

U.S. Federal regulations : TSCA 5(a)2 proposed significant new use rule (SNUR): No products were found.

TSCA 5(a)2 final significant new use rules: tetra ethylene glycol ether

TSCA 12(b) one-time export notification: No products were found.

TSCA 12(b) annual export notification: lead

Refer to Proposed Rule (59 Federal Register 11122, March 9, 1994) for details on TSCA 12(b) applicability for lead.

United States inventory (TSCA 8b) : All components are listed or exempted.

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Section 15. Regulatory information

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification : Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	lead silver	7439-92-1 7440-22-4	30-40 1-10
Supplier notification	lead silver	7439-92-1 7440-22-4	30-40 1-10

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Canada

Canada inventory : All components are listed or exempted.

International lists

National inventory

Australia : Not determined.
China : All components are listed or exempted.
Europe : Not determined.
Japan : All components are listed or exempted.
Malaysia : Not determined.
New Zealand : Not determined.
Philippines : Not determined.
Republic of Korea : Not determined.
Taiwan : All components are listed or exempted.
Thailand : Not determined.
Turkey : Not determined.
Viet Nam : Not determined.

Section 16. Other information

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

Health	3
Flammability	2
Physical hazards	0

Procedure used to derive the classification

Continued on next page

Section 16. Other information

Classification	Justification
Skin Irrit. 2, H315	Calculation method
Eye Dam. 1, H318	Calculation method
Carc. 2, H351	Calculation method
Repr. 1A, H360 (Fertility)	Calculation method
Repr. 1A, H360 (Unborn child)	Calculation method
STOT RE 1, H372 (nervous system, reproductive organs)	Calculation method
Aquatic Acute 1, H400	Calculation method
Aquatic Chronic 1, H410	Calculation method

History

Date of issue/Date of revision : January 23 2022.

Date of previous issue : No previous validation.

Version : 1

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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

Indicates information that has changed from previously issued version.

Notice to reader

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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.