

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name	LINQALLOY™ SACQ
Applications:	Solder for electrical and electronic packages. Industrial use only.
Advised Against	No further relevant information is available
Supplier Name	Caplinq Europe BV

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SECTION 2. HAZARDS IDENTIFICATION

PROPOSED CLASSIFICATION

Acute Toxicity (Oral)	Category 4
Acute Toxicity (Dermal)	Not Classified
Skin Corrosion/Irritation	Not Classified
Serious Eye Damage/Irritation	Category 2B
Carcinogenicity	Not Classified
Reproductive Toxicity	Not Classified
Specific Target Organ Toxicity (Single Exposure)	Category 1
Specific Target Organ Toxicity (Repeated Exposure)	Category 2
Hazardous to the Aquatic Environment	Acute Category 2

HAZARD PICTOGRAMS



SIGNAL WORD

Danger

HAZARD STATEMENTS

H302	Harmful if swallowed
H320	May cause eye irritation
H373	May cause damage to organs through prolonged or repeated exposure
H413	May cause long-lasting harmful effects to aquatic life

PRECAUTIONARY STATEMENTS

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink, or smoke when using this product.
P273	Avoid release to the environment.

RESPONSE PRECAUTIONARY STATEMENTS

P301+P312	If swallowed: Call a poison center or doctor/physician if you feel unwell
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes and remove contact lenses before rinse

P307+P311 If exposed, call a poison center or doctor/physician.
P314 Get medical advice/attention if you feel unwell.
P321 Specific treatment (see on this label)
P330 Rinse mouth
P337+P313 If eye irritation persists, get medical advice/attention.

STORAGE AND DISPOSAL

P405 Store locked up
P501 Dispose of the contents/container in accordance with local/regional/national/international regulations.

HAZARD RISKS NOT COVERED BY CLASSIFICATION CRITERIA

Element	NFPA Level (0–4 steps)		
	Health	Fire	Reactivity
Tin	1	3	0
Silver	1	0	0
Copper	2	1	0
Nickel	Not Available	Not Available	Not Available
Bismuth	0	3	0
Germanium	Not Available	Not Available	Not Available

SECTION 3. INGREDIENT COMPOSITION

Element	CAS Reg. No.	Proportion (%)
Tin	7440-31-5	91.79–93.11
Silver	7440-22-4	3.90–4.10
Copper	7440-22-8	0.45–0.55
Nickel	7440-02-0	0.04–0.06
Bismuth	7440-69-9	2.50–3.50
Germanium	7440-56-4	maximum <0.014

SECTION 4. FIRST AID MEASURES
EYE CONTACT

- Immediately flush with plenty of water for at least 15 min.
- Inspect for and remove any contact lenses. Avoid using eye ointment.

SKIN CONTACT

- Immediately flush with plenty of water and soap for at least 15 min.
- Remove contaminated clothing, and launder it before reuse.

INHALATION

- Move the victim to fresh air.
- Administer oxygen if breathing is difficult.
- Get medical attention.

INGESTION

- Do not administer anything orally if the patient is on the verge of losing consciousness, already unconscious, or experiencing convulsions.
- Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt, or waistband.
- If the victim is not breathing, administer mouth-to-mouth resuscitation.

- Get medical attention immediately.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND NOTES FOR PHYSICIAN

- Treatments depend on the condition of the patient.

SECTION 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Dolomite, sand, black lead, soda ash, and sodium chloride.

HAZARD RELEASED FROM CHEMICAL

- Thermal Decomposition Products: Oxidized chemicals of tin.
- Fires and Explosive Risk: A fire and explosive risk is not considerable when it is bulk. However, the mixture with air and dust may pose an explosive hazard.

PROTECTIVE EQUIPMENT AND PRECAUTIONARY ACTIONS

- Move the container from the fire area if safe to do so.
- After extinguishing the fire, cool the container with water for a long time. If water is unavailable, prevent unauthorized access and isolate from hazardous areas.
- Use a fire extinguisher.
- Avoid inhaling the substance or the burning fumes. Position yourself against the wind.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PRECAUTIONARY ACTIONS

- Avoid contact with products near heat, flames, sparks, or other ignition sources.
- Avoid inhalation of steam and contact with eyes or skin.

CONTAINMENT ACTIONS

- Small leak: Not available.
- Massive leak: Vacuum or sweep up the material and place it into a suitable disposal container. Clean up spills promptly.

SECTION 7. HANDLING AND STORAGE

HANDLING

- This product is for industrial use only. Wash hands after use.
- Do not take it internally. Avoid contact with eyes, skin, and clothing.
- Avoid inhalation of soldering fumes during the process.
- Keep out of reach of children. Observe good industrial practices.
- Ensure the availability of suitable protective and ventilation equipment.
- Minimize dust generation and accumulation.

STORAGE

- Avoid direct exposure to sunlight and store substances in a cool, dry place. Keep them away from acids, strong oxidizing agents, and other hazardous materials.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	CAS Reg. No.	NIOSH REL-TWA	OSHA PEL-TWA	ACGIH TLV-TWA
		mg/m ³		
Tin	7440-31-5	2	2	2
Silver	7440-22-4	0.1	0.1	0.1
Copper	7440-22-8	0.2	0.2	0.2
Nickel	7440-02-0	0.015	1	1
Bismuth	7440-69-9	Not Established	Not Established	Not Established
Germanium	7440-56-4	Not Established	15	Not Established

VENTILATION

- Use explosion-proof ventilation equipment or a local ventilation system.
- Ensure that the ventilation system meets exposure standards.
- Prevent container damage and corrosion; seal it to prevent leaks.
- Local exhaust or general ventilation may be necessary to maintain exposures below applicable limits. Evaluation of ventilation systems should be done by a professional industrial hygienist, and the design of specific systems should be conducted by a professional engineer.

PERSONAL PROTECTION

- Respiratory Protection: If ventilation is unavailable, use a respirator. Operations such as sawing, blowing, tear out, and spraying may generate airborne dust concentrations that necessitate higher levels of respiratory protection.
- Eye Protection: Wear approved safety glasses or goggles with solid side shields. Use suitable personal protective equipment for soldering operations.
- Skin Protection: Wear leather or cotton gloves to protect against mechanical abrasion.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Gray solid
Odor	Odorless
pH	Not Available
Melting Point	211–216 °C
Boiling Point (760 mm Hg)	Not Available
Flash Point	Not Available
Evaporation Rate (Butyl Acetate = 1)	Not Available
Flammability (Solid, Gas)	Not Available
Upper/Lower Flammability or Explosive Limit	Not Available
Vapor Pressure (mm Hg at 20 °C)	Not Available
Vapor Density (air = 1)	Not Available
Specific Gravity (Water = 1 at 25°C):	7.48
Solubility in Water (wt%)	Negligible (0–1%)
Coefficient of Water/Oil Distribution	Not Established
Auto-ignition Temperature	Not Available
Decomposition temperature	Not Available
Viscosity	Not Available

Formula mass

Not Available

SECTION 10. STABILITY & REACTIVITY

Chemical Stability: Stable at room temperature and atmospheric pressure.

Possibility of Hazardous Reactions: These products are generally non-reactive. However, metal fumes and certain noxious gasses, such as carbon monoxide, may be produced at temperatures above the melting point or during welding or burning operations. Additionally, welding or burning operations may produce carbon monoxide, carbon dioxide, and other toxic fumes.

Conditions to Avoid: Avoid heat, sparks, open flames, and oxidizing materials.

Incompatible Materials: Avoid strong acids, strong oxidizing agents, halogens, metals, and flammable materials.

Hazardous Decomposition Products: Oxidized tin materials.

SECTION 11. TOXICOLOGICAL INFORMATION

DELAYED, ACUTE, AND CHRONIC TOXIC EFFECTS FOR SHORT AND LONG-TERM EXPOSURE

Acute toxicity (Oral): Category 4 (Content of ingredient, unconfirmed information of classification: 96.5%)

Tin	Not Available
Silver	Not Classified (LD ₅₀ > 5000 mg/kg rat)
Copper	Category 4 (LD ₅₀ = 413 mg/kg bw mouse)
Nickel	Not Available
Bismuth	Not Classified (LD ₅₀ > 5000 mg/kg rat)

Acute toxicity (Dermal): Not Classified (Content of ingredient, unconfirmed information of classification: 97%)

Acute toxicity (Inhalation: Gas): Not Available.

Acute toxicity (Inhalation: Vapor): Not Available.

Acute toxicity (Inhalation: Dust, Mist): Not Available.

Skin Corrosion/Irritation: Not Classified. (Content of ingredient, unconfirmed information of classification: 96.5%)

Serious Eye Damage/Irritation: Category 2B

Tin	Category 2B
Silver	Category 2B
Copper	Category 2B
Nickel	Not Available
Bismuth	Not Available

Respiratory sensitizer: Not Available.

Skin Sensitization: Not Available.

Carcinogenicity: Not Classified. (Content of ingredient, unconfirmed information of classification: 96.5%)

Mutagenicity: Not Available.

Reproductive Toxicity: Not Classified. (Content of ingredient, unconfirmed information of classification: 99.5%)

Specific Target Organ Toxicity (Single Exposure): Category 1 (Content of ingredient, unconfirmed information of classification: 96.5%)

Tin	Not Available
Silver	Category 3 Inhalation of silver or silver compounds may cause respiratory irritation.
Copper	Category 3 Fumes and dust may irritate the upper respiratory tract.
Nickel	Not Available
Bismuth	Category 1

Specific Target Organ Toxicity (Repeated Exposure): Category 2 (Content of ingredient, unconfirmed information of classification)

Tin	Not Available
Silver	Category 2 Silver compounds can cause thickening of renal glomerular basement membranes, growth depression, shortened lifespan, and the deposition of silver-containing material in skin, eyes, and internal organs.
Copper	Category 2
Nickel	Not Available
Bismuth	Not Available

Aspiration Hazard: Not Available.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic and Terrestrial Ecotoxicity (Acute Toxicity): Category 2.

Biodegradability: Not Available.

Bioaccumulation: Not Classified (Content of ingredient, unconfirmed information of classification: 99.5%)

Mobility in Soil: Not Available.

Other adverse effects: Not Available.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Consider categories of waste treatment management regulation. Disposal of waste needs to be carried out at the city, state, or federally permitted disposal facility. Handle in accordance with applicable regulations and/or local authorities.

WASTE DISPOSAL PRECAUTION

Obey the waste treatment management regulation.

SECTION 14. TRANSPORT INFORMATION

This product is not classified as dangerous goods according to international transport regulations.

Land transport ADR/RID (Cross-border)

ADR, RID Class: Not applicable

Maritime transport IMDG

IMDG Class: Not subject to IMDG classification.

Air transport ICAO-TI and IATA-DGR

ICAO/IATA Class: Not subject to IATA regulations.

USA (DOT) and Canada (TDG)

DOT/TDG Class: Non-DOT and Non-TDG restricted material

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized safety officer. It is the responsibility of the transporting organization to follow all applicable laws, regulations, and rules relating to the transportation of the material.

SECTION 15. REGULATORY INFORMATION

US FEDERAL REGULATION

- Tin TSCA Listed
- Silver TSCA Listed
- Copper TSCA Listed

EUROPEAN REGULATION

- Tin Listed (231-141-8)
- Silver Listed (231-131-3)
- Copper Listed (231-159-6)

CANADIAN REGULATION

- Tin DSL Listed
- Silver DSL Listed
- Copper DSL Listed

SECTION 16. OTHER INFORMATION

The information in this safety data sheet was obtained from reputable sources and to the best of our knowledge is accurate and current at the mentioned date. Neither CAPLINQ Corporation nor CAPLINQ Europe BV accepts any liability arising out of the use of the information provided here or the use, application, or processing of the product described herein.

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ABBREVIATIONS AND ACRONYMS

ADR	Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG	International Maritime Code for Dangerous Goods
IATA	International Air Transport Association
CAS	Chemical Abstracts Service (A division of the American Chemical Society)
PEL	Permissible Exposure Limit
TLV	Threshold Limit Value
REL	Recommended Exposure Limit
TWA	Time Weighted Average
NIOSH	National Institute for Occupational Safety and Health
ACGIH	American Conference of Governmental Industrial Hygienists
OSHA	Occupational Safety and Health Administration
LD ₅₀	Lethal dose, 50 percent