

SAFETY DATA SHEET

GHS SDS Date: 01/01/2025

SDS Name: KappFreeA™ - Lead-free Cadmium-free Tin-Copper-Silver Acid Core Solder

SDS Number: 474 GHS

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SECTION I: PRODUCT AND COMPANY INFORMATION

Product Name: KappFreeA™ - Lead-free Cadmium-free Tin-Copper-Silver Acid Core Multipurpose Solder

Component	CAS Number	ECHA Number	Component	CAS Number	ECHA Number
Tin (Sn)	7440-31-5	231-141-8	Copper	7440-50-8	231-159-6
Silver (Ag)	7440-22-4	231-131-3	Polyethylene Glycol	25322-68-3	203-473-3

Company Identification: Kapp Alloy and Wire, Inc., 1 Klein Street / PO Box 1188, Oil City, PA 16301

Contact: Telephone: 1-800-327-6533 or 814-676-0613, Email: info@kappalloy.com**SECTION II: HAZARD INFORMATION**

GHS08 Health Hazard

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS07

H302 - Harmful if swallowed.



GHS07



GHS08

Label Elements: Hazard Pictograms

Signal Word: **Danger**

Hazard-determining components of labeling: Acid flux core

Hazard Statements:

H302 - Harmful if swallowed.

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 - May cause an allergic skin reaction.

Precautionary Statements:

P264 - Wash thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P285 - In case of inadequate ventilation wear respiratory protection.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 – IF IN EYES: Flush with water for at least 15 minutes to remove irritant. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a physician.

P304+P341 – IF INHALED: Terminate exposure and remove to fresh air. Call physician; advise of chemical composition (section III).

P302+P352 IF ON SKIN: Wash thoroughly with soap and water to remove any residue. If a rash develops, call a physician.

P501 - Dispose of in accordance with local/regional/national, and international regulations.

Results of PBT and vPvB assessment: PBT: Not applicable; vPvB: Not applicable.**PRIMARY ROUTES OF ENTRY**

- Inhalation: fumes

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- Ingestion: Solid metals – not edible; highly unlikely
- Skin Absorption: N/A

SIGNS AND SYMPTOMS OF OVEREXPOSURE

- Flu-like symptoms (nausea, constipation, headache, dizziness) - self-limiting, usually disappear within 24 hours

SECTION III: COMPOSITION / INGREDIENTS

*(Hazardous components 1% or greater; Carcinogens 0.1% or greater)

Component	CAS Number	OSHA PEL	ACGIH TLV 8hrTWA	Density (lbs./in. ³ & g/ml)	% (optional)
Tin (Sn)	7440-31-5	2 mg/m ³	2 mg/m ³	.2640 & 7.307	95.5
Copper (Cu)	7440-50-8	0.1 mg/m ³ (fume) 1.0 mg/m ³ (dust)	0.1 mg/m ³ (fume) 1.0 mg/m ³ (dust)	.3230 & 8.941	4.0
Silver (Ag)	7440-22-4	.01 mg/m ³ (Dust&Fume)	.01 mg/m ³ (Dust&Fume)	.3787 & 10.482	0.5
Polyethylene Glycol	25322-68-3	NE	NE	NE	2.5-5%

*Acid Flux Core is centered inside the wire is 3% by weight. PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; NA = Not Applicable; NE = Not Established; NAIF = No Applicable Information found

SECTION IV: FIRST AID MEASURES

Ingestion: Drink large quantities of water - induce vomiting.
Call a physician at once; advise of chemical composition (section III).

Skin: Wash thoroughly with water to remove any residue. If a rash develops, call a physician.

Inhalation: Terminate exposure and remove to fresh air. Call physician; advise of chemical composition (section III).

Eyes: Flush with water for at least 15 minutes to remove irritant. Consult a physician.

SECTION V: FIRE FIGHTING MEASURES

Flash point & Methods Used: N/A; Auto Ignition Temperature: N/A
Flammability Limits: (in air, % by volume) LEL: N/A and UEL: N/A

Extinguisher Media: CO₂ or dry chemical extinguisher.

**DO NOT USE WATER ON MOLTEN METAL:
LARGE FIRES MAY BE FLOODED WITH WATER FROM A DISTANCE**

Special Fire Fighting Procedures Use NIOSH/MSHA -approved self-contained breathing apparatus and full protective clothing if involved in fire.

Unusual Fire and Explosion Hazards Finely divided dust may form explosive mixture with air.

**NEVER DROP WATER OR LIQUIDS INTO MOLTEN SOLDER.
*Do not plunge damp or wet solder bars/pieces into molten solder**

SECTION VI: ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is spilled or released:

- Solder is solid / recyclable
- Vacuuming is recommended for accumulated metal dust from saw/grind operations.

SECTION VII: HANDLING AND STORAGE

Precautions to be taken in handling and storage:

- Dry storage; ambient temperature

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Other Precaution / Special Handling:

- Wet or moist ingot(s) WILL present an explosion hazard when submerged in molten solder.
***AVOID FIRE/EXPLOSION RISKS. Always preheat ingot before charging into furnace.**

SECTION VIII: EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection: Use NIOSH-approved breathing apparatus to prevent exposure to dusts and fumes.

Eye Protection: Approved safety glasses/welding goggles, appropriate to your procedure, should be worn.

Ventilation: Local Exhaust: YES; Mechanical: YES Special: Conform to your regulatory statutes.

Other: Standard protective equipment used in soldering (/applicable) operations.

*Protective gloves are recommended, especially for high temperature applications to prevent burns. *Conform to all local, state, federal regulations.

See also: 29 CFR 1910.132 - 29 CFR 1910.140. *Personal Protective Equipment*29 CFR 1910.251 - 29 CFR 1910.257. *Welding, Cutting and Brazing***SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point: Sn@ 4120°F / 2270°C / Cu@4703°F / 2595°C / Ag@ 4010°F / 2210°C, and Acid Flux: 385°F / 196°C

Melting Point: 440 - 500°F / 226 - 260°C

Vapor Pressure (mm Hg.): N/A

Vapor Density (AIR = 1): N/A

Density: 0.2669 lbs/in³ and/or 7.389g/ml

Solubility in Water: 0 (solid)

Evaporation Rate (Butyl Acetate = 1): N/A

Appearance and Odor: Lustrous, silver metal; odorless / various shapes and sizes.

SECTION X: STABILITY AND REACTIVITY

Stability: Stable

Conditions to avoid: Avoid strong oxidizing materials, e.g. Chlorine trifluoride, hydrogen peroxide, sodium azide, ammonia, & Acetylene.

Hazardous Decomposition Product: None – hazardous polymerization will not occur

SECTION XI: TOXICOLOGY INFORMATION

Tin (Sn): Elemental Tin is NOT generally considered to be toxic.

Silver (Ag): Argyria, a blue-gray discoloration of the skin, mucous membranes, and eyes may result from inhalation of silver. Note: this discoloration may be permanent.

Copper (Cu): NAIF

IT IS UNLIKELY THAT NORMAL EXPOSURE (USING APPROPRIATE PROTECTIVE EQUIPMENT) WOULD RESULT IN ILLNESS.

*0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

	Health	Flammability	Reactivity	Special
NFPA Rating	1	0	0	0
HMIS Rating	1	0	0	0

SECTION XII: ECOLOGY INFORMATION

This product will not biodegrade. It will oxidize if left out in the elements, but will not affect the surrounding ecology.

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Danger to drinking water if quantities leak into the ground.

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SECTION XIII: DISPOSAL CONSIDERATION

Waste Disposal Method

- Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Dispose of according to federal, state, local, and OSHA regulations.

SECTION XIV: TRANSPORT INFORMATION

Ground - DOT Proper Shipping Name: Solder
Not regulated for transport by US DOT.**Air - IATA Proper Shipping Name: Solder**
Not regulated for air transport by IATA.

SECTION XV: REGULATORY INFORMATION

SARA Title III Program:

- This product contains no toxic chemicals subject to the reporting requirements of the Emergency Planning and Community Right to Know Act (EPCRA) of 1986 and 40 CFR 372

SECTION XVI: OTHER INFORMATION

This information must be included in all SDS that are copied and distributed for this material.

**GOOD HOUSEKEEPING PROCEDURES SHOULD BE MAINTAINED.
PERSONNEL SHOULD WASH THOROUGHLY BEFORE SMOKING OR EATING
FOOD AND DRINK SHOULD NOT BE CONSUMED, TOBACCO PRODUCTS USED, OR COSMETICS
APPLIED IN AREAS WHERE EXPOSURES EXIST.**

Please retain this sheet for your files. Kapp Alloy maintains a file of Safety Data Sheets (SDS) for each alloy produced in compliance with Federal OSHA Hazard Communication Standard (29 CFR 1910.1200) & various right-to-know laws.

The information and recommendations contained within this publication have been compiled from sources believed to be reliable and to represent the best information available to Kapp Alloy and Wire, Inc. at the time of issue. It is our policy to include an SDS with initial orders for each product. This submission is to become a matter of record and need not accompany subsequent shipments for the same product to the same customer. The information contained on this sheet is intended solely for employee health and safety education and not for contract specification purposes. No warranty, guarantee, or representation is made by Kapp Alloy and Wire, Inc., nor does Kapp Alloy and Wire, Inc. assume any responsibility in connection there within; nor can it be assumed that all acceptable safety measures or other safety measures may not be required under particular or exceptional conditions or circumstances. Should you need additional information, contact us.