

SDS Name: KappEE™ - Tin Lead Silver Rosin Cored Solder for Electronic / Electrical Applications

SDS Number: 417 GHS

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SECTION I: PRODUCT AND COMPANY INFORMATION

Product Name: KappEE™ - Tin Lead Silver Rosin Cored Solder for Electronics / Electrical Applications

Composition: Lawson Item Numbers: P52065, P52064M01, P52067

Element	CAS Number	ECHA Number
Tin	7440-31-5	231-141-8
Lead	7439-92-1	231-100-4
Silver	7440-22-4	231-131-3
Gum Rosin	8050-09-7	232-475-7

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

Contact: Telephone: 1-800-327-6533 or 1-814-676-0613, Email: info@kappalloy.com**SECTION II: HAZARD INFORMATION****Classification of the mixture according to Regulation (EC) No. 1272/2008 and OSHA 29 CFR 1910**

Respiratory Sensitization (Category 1)

Skin sensitization (Category 1)

Serious eye irritation (Category 2A)

Acute toxicity, oral and respiratory (Category 4)

Germ cell mutagenicity (Category 1A,1B)

Carcinogenicity (Category 1)

Reproductive toxicity (Category 1A,1B)

Specific target organ toxicity – repeated exposure (Category 2)

Acute aquatic toxicity (Category 2)

Chronic aquatic toxicity (Category 2)



GHS08 Health Hazard

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

H340 – May cause genetic defects

H350 – May cause cancer

H360 – May damage fertility or the unborn child.

H373 - May cause damage to organs through prolonged or repeated exposure.



GHS07

H302 - Harmful if swallowed.

H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

H332 - Harmful if inhaled.

H335 - May cause respiratory irritation.

H401 – Toxic to aquatic life.

H413 - May cause long lasting harmful effects to aquatic life.



GHS07



GHS08

Label Elements: Hazard Pictograms

Signal Word: **Danger**

Hazard-determining components of labeling: LEAD (Pb) and Rosin

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Hazard Statements:

H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 - May cause respiratory irritation.
H340 – May cause genetic defects.
H350 – May cause cancer.
H360 – May damage fertility or the unborn child.
H373 – May cause damage to organs through prolonged or repeated exposure.
H401 – Toxic to aquatic life.
H413 - May cause long lasting harmful effects to aquatic life.

Precautionary Statements:

P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P233 - Keep container tightly closed
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P263 - Avoid contact during pregnancy/while nursing.
P264 - Wash thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P312 - Call a POISON CENTER/ doctor/medical facility if you feel unwell.
P314 - Get medical advice/attention if you feel unwell.
P321 - Specific treatment see below on this SDS.
P362+P363 - Take off contaminated clothing and wash before reuse.
P301+P312+P330 **IF SWALLOWED:** Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.
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+340 - **IF INHALED:** Remove person to fresh air and keep comfortable for breathing.
P304+312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P342+311 - If experiencing respiratory symptoms: Call a POISON CENTER/doctor/or medical facility.
P302+P352 **IF ON SKIN:** Wash thoroughly with soap and water to remove any residue. If a rash develops, call a physician.
P332+313 - If skin irritation occurs: Get medical advice/attention.
P308+313 - If exposed: Call a POISON CENTER or doctor/physician.
P403+233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

PRIMARY ROUTES OF ENTRY

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

POTENTIAL HEALTH EFFECTS

EYES: Moderately irritating to the eyes. Tearing and redness.

SKIN: May cause slight skin irritation.

INHALATION and INGESTION:

ACUTE OVEREXPOSURE

- Flu-like symptoms (nausea, constipation, headache, dizziness) - self-limiting, usually disappear within 24 hours after removal from product exposure.
- Proposition 65 Warning: THIS PRODUCT CONTAINS LEAD, WHICH IS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

SEVERE SHORT-TERM OVEREXPOSURE

- May lead to central nervous system disorders, characterized by drowsiness, seizures, coma death. It should be recognized that exposure of this magnitude in an industrial environment is extremely unlikely.

CHRONIC OVEREXPOSURE (symptoms and effects)

- **TIN:** Has been shown to increase incidence of sarcoma in animal tests. Chronic exposure may result in "stannosis" a mild form of pneumoconiosis.
- **LEAD:** Prolonged exposure to vapors or fumes at higher temperatures may cause respiratory irritation and systematic lead poisoning. Symptoms of lead poisoning include headache, nausea, abdominal pain, muscle and joint pain and damage to the nervous system, blood system and kidneys. Exposure to metal fumes may cause irritation to the respiratory system. Long term exposure by inhalation to metal fumes may cause illness such as metal fume fever. Exposure to lead fume may cause harm. Sign of overexposure is anemia.
- Systemic poisoning with symptoms of metallic taste, anemia, insomnia, weakness, constipation, abdominal pain, gastrointestinal disorders, joint and muscle pain and muscular weakness. May cause damage to the blood forming, nervous, kidneys and reproductive systems. Damage may include reduced fertility in both men and women, damage to the fetus of exposed pregnant women, anemia, muscular weakness and kidney dysfunction.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE TO LEAD:

- Diseases of the blood and blood forming organs, kidneys, nervous and reproductive systems.

SKIN CONTACT: Normal handling of solid metal should not cause any adverse health effects. Hot molten metal may cause burns to the skin. Wear protective equipment when handling molten metal. Protect skin when grinding/cutting, may cause irritation.

SECTION III: COMPOSITION / INGREDIENTS

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

Component	CAS Number	EC/List Number	OSHA PEL	ACGIH TLV	Density lbs/in ³ & g/cm ³	% (optional)
Tin (Sn)	7440-31-5	231-141-8	2 mg/m ³	2 mg/m ³	.264 & 7.307	62
*Lead (Pb)	7439-92-1	231-100-4	.05 mg/m ³ (Dust&Fume)	.15 mg/m ³ (Dust&Fume)	.4049 & 11.332	36
Silver (Ag)	7440-22-4	231-131-3	.01 mg/m ³ (Dust&Fume)	.01mg/m ³ (Dust&Fume)	.3787 & 10.482	2
Rosin**	65997-05-9	500-163-2	NE	18mg/ m ³ 10 ppm	N/A	2.5 – 3

** Rosin Flux Core is centered inside the wire

NA = Not Applicable NE = Not Established NAIF = No Applicable Information found

*The OSHA standard limit for occupational exposure to lead as referenced in CFR Title 29, Part 1910.1025 is 50 micrograms/cubic meter based on an eight hour time-weighted average.

This standard states that, when the air of work-rooms contains regularly not more than 50 micrograms of inorganic lead and its inorganic compounds per cubic meter of air, as measured by prescribed methods, cases of lead intoxication will not occur.

No other hazardous material is present in concentrations greater than 1% (0.1% for Carcinogens)

SECTION IV: FIRST AID MEASURES

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

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Skin:	Wash thoroughly with water to remove any residue. If a rash develops, call a physician.
Inhalation:	Terminate exposure and remove to fresh air. If not breathing, give artificial respiration or oxygen by trained personnel. Seek immediate medical attention. Call physician; advise of chemical composition (section III).
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.

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:	CO ₂ 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**

ROSIN MAY DECOMPOSE DURING HEATING TO FORM ABOUT 5% TURPENTINE (TLV=100PPM)

SECTION VI: ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is spilled or released:

Contain spill. If molten, cool to allow metal to solidify. If a solid metal, wear gloves, pick up and return to process. If dust, wear recommended personal protective equipment. DO NOT SWEEP, avoid generation of dust. Ventilation required. Use a vacuum, place in barrels and return to process if applicable. Otherwise, dispose of following all Federal, State and Local regulations. In the EU refer to the Special Waste Regulations. Metal has reclaim value.

SECTION VII: HANDLING AND STORAGE

Precautions to be taken in handling and storage:

- Dry storage; ambient temperature

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: An authority approved or compliant marked air-purifying respirator with a fume/dust chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated or if in powder form. Avoid inhalation of lead dust. Additional respiratory protection maybe required based on the work conditions.

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.

Engineering Controls: Exhaust ventilation is required to control any air contaminants containing lead. Control concentration of all components so that their permissible exposure limits are not exceeded.

Skin: Gloves-leather or impervious (vinyl) type. Heat resistant gloves if handling hot metal. Safety type boots. Personal protective equipment is recommended when working with molten metal to avoid burns.

Other: Safety shower and eye-wash fountain in work area. Avoid the use of contact lenses in high

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fume areas.

Work/Hygienic Practices: Maintain good housekeeping. Clean up spills immediately. Good personal hygiene is essential. Avoid eating, smoking or drinking in the work area. Wash hands thoroughly with soap and water immediately upon leaving the work area. Follow standard lead work practices as established under governmental regulations.

Other: *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: NAIF
 Melting Point: 179°C / 354°F
 Vapor Pressure (mm Hg.): **LEAD ONLY: Health Significance ONLY >500°C**
 Vapor Density (AIR = 1): N/A
 Density: .3186lbs/cu.in. and 8.820g/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: None
 Incompatibility (materials to avoid): Strong Acids, Strong Alkalis
 Hazardous Decomposition Products: Small amounts of turpentine. May emit hydrogen chloride fumes during soldering. Hazardous Polymerization will not occur.

SECTION XI: TOXICOLOGY INFORMATION

Tin (Sn): Elemental Tin is NOT generally considered to be toxic.
 Lead (Pb): Chronic exposure to high levels of airborne or ingested lead may result in anemia, insomnia, weakness, constipation, nausea, and abdominal pain.
 Silver (Ag): Argyria, a blue-gray discoloration of the skin, mucous membranes, and eyes may result from inhalation of silver. This discoloration may become permanent.
 Rosin: Irritant to skin and mucous membranes. Possible local irritation by contact with flux or fumes. Irritant to the eyes. Smoke during soldering can cause eye irritation.
 Inhalation: Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system.

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	2	0	0	0
HMIS Rating	2	0	0	0

Carcinogenicity:

National Toxicity Program (NTP): Yes- reasonably anticipated to be a human carcinogen

Occupational Safety & Health Administration (OSHA): Yes- 1910.1025

U.N. International Agency for Research on Cancer (IARC): Yes

Lead and Lead compounds are listed as possible carcinogens. 2B-Group 2B- possibly carcinogenic to humans.

LD50: Not established **LC50:** Not established

Other: Chronic Toxicity: Lead can cause potential harm to the developing fetus.

Irritancy of Product: Not established **Mutagenicity:** Not established

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Sensitization to Product: Not established **Teratogenicity:** Not established**Reproductive Toxicity:** No specific data is available **Synergistic Products:** Not established

RTECS#: Lead – OF7525000 RTECS#: Tin – XP7320000 (Registry of Toxic Effects of Chemical Substances)

Lead

reproductive toxicity – rat –inhalation reproductive toxicity – rat – oral

reproductive toxicity – mouse-oral

Teratogenicity

Developmental toxicity – rat- inhalation

Developmental toxicity- rat- oral

Suspected human reproductive toxicant

GHS- Specific target organ toxicity- repeated exposure

May cause damage to organs through prolonged or repeated exposure

Lead- OSHA Hazards- carcinogen/target organ effect/harmful by ingestion/teratogen.

SECTION XII: ECOLOGY INFORMATION

Lead – Toxicity to fish – mortality LOEC – rainbow trout – 1.19 mg/l – 96h. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Bioaccumulation – Oncorhynchus kisutch – 2 weeks Bioconcentration factor (BCF): 12. Fresh fish: 0.44 mg/l LC50 96h/ 1.32 mg/l LC50 96h/water Flea: 600 ug/l EC50 = 48h Avoid release to environment. Bioconcentration factor: BCF 12 Very toxic to aquatic life with long lasting effects. This product will not biodegrade. 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 even extremely small quantities leak into the ground.

Results of PBT and vPvB assessment: PBT: Not applicable; vPvB: Not applicable.**SECTION XIII: DISPOSAL CONSIDERATION**

Waste Disposal Method

- Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Disposal must be made according to official regulations. Dispose of according to federal, state, local, international, and OSHA regulations. In Europe follow the Special Waste Regulations. Avoid release to the environment.

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 the following toxic chemicals subjected to the reporting requirements of EPCRA of 1986 and 40 CFR 372

CHEMICAL NAME	CAS NO.	CONCENTRATION
Lead	7439-92-1	36%

UNITED STATES

HCS Classification: Toxic Material, Irritating material, carcinogen, target organ effects.

U.S. Federal Regulations: All ingredients comply with applicable rules or orders under US TSCA.

All components are listed or exempted.

TSCA 6 proposed risk management: LEAD.

TSCA 8(b) inventory: LEAD

TSCA 12(b) annual export notification: LEAD

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SARA 313	Substance Name
Form R - Reporting Requirements:	Lead
Supplier Notification:	Lead

California Prop. 65: This product contains a substance known to the State of California to cause cancer and birth defects or other reproductive harm. More information at www.P65Warnings.ca.gov.

WHMIS (Canada): Class D-2A: Material causing other toxic effects (very toxic). CEPA DSL: Tin, Lead.

Reach Directive 1907/2006: Contains Lead, a Substance of Very High Concern (SVHC).

SECTION XVI: OTHER INFORMATION

ABBREVIATION TERMS:

ACGIH American Conference of Government Industrial Hygienists

OSHA Occupational Safety and Health Act

CAS Chemical Abstracts Service

PEL Permissible Exposure Limit

CEPA Canadian Environmental Protection Act

REL Recommended Exposure Limit

IARC International Agency for Research on Cancer

SARA Superfund Amendments & Reauthorization Act

NIOSH National Institute for Occupational Safety and Health

TSCA Toxic Substances Control Act

NTP National Toxicology Program

N/A Not Applicable, Not Available

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.