



Solder Preforms | Engineered Solder Materials

Safety Data Sheet – Solder Preforms with Rosin-Based Fluxes

This material safety data sheet represents solder alloys containing tin, lead and/or silver that are either coated or blended with rosin-based fluxes. Refer to alloy table in section 3 for scope.

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: Preforms with rosin-based coatings or cores. Preforms may be in washer, rectangle, square, ring, ribbon or custom designed preforms.

Revised Date: March 30, 2020

Product Use: Electronics & industrial

MANUFACTURER:

Array Solders
152 Myrtle Avenue, Jersey City, NJ 07305
Information: (201) 997-1333

EMERGENCY PHONE:

CHEMTREC 24 hrs.
USA: 1(800) 424-9300
Outside USA: +1(703) 527-3887

2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY: Eye, Inhalation, Skin, Ingestion Carcinogen listed in NTP IARC OSHA Not Listed

GHS

Lead Containing Products



Signal Word: Warning

Hazard statement(s)

H317 May cause an allergic skin reaction

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

H303 May be harmful if swallowed

H351 Suspected of causing cancer

H361 Suspected of damaging fertility or the unborn child
H373 May cause damage to organs through prolonged or repeated exposure
H410 Very toxic to aquatic life with long lasting harmful effects
EUH201A Warning! Contains lead. Review listing.
EUH208 Contains rosin. May produce an allergic reaction
Precautionary statement(s)
P233 Keep container tightly closed
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P270 Do not eat, drink or smoke when using this product
P273 Avoid release to the environment
P280 Wear protective gloves/protective clothing/eye protection/face protection
P362 +P364 Take off contaminated clothing and wash before reuse
P301 + P314 IF SWALLOWED: Get medical advice/attention if you feel unwell
P302 +P352 IF ON SKIN: Wash with plenty of soap and water
P304 + 341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + 351 IF IN EYES: Rinse continuously with water for several minutes (15 mins)
P501 Dispose of contents by recycling or thru an approved chemical waste hauler.

Classification system:

WHMIS Symbols:



Classification System:

NFPA Rating System (Scale 0-4)



HMIS ratings (Scale 0-4)



Other hazards Results of PBT and vPvB assessment

PBT: Not applicable

vPvB: Not applicable.

Classification:

Carcinogenicity (Category 2) (lead)
 Reproductive toxicity (Category 2) (lead)
 Skin sensitizer-Category 1B
 Respiratory sensitizer-Category 1B
 Acute aquatic toxicity – Category 1 for lead containing products (H400)
 Chronic aquatic toxicity – Category 1 for lead containing products (H410)

POTENTIAL HEALTH EFFECTS:

Eye Contact: Irritating to the eyes and if not removed, may result in serious injury.

Contact with fume
 from molten metal may cause irritation.

Ingestion: This product contains metal and organic chemicals. May cause irritation.

Inhalation: Inhalation of fume or dust may cause local irritation to the respiratory system. Rosin may cause occupational asthma.

Skin Contact: May cause skin irritation. Rosin may cause dermatitis or sensitization.

Chronic: SILVER: Chronic skin contact or ingestion of silver powder, salts or fume can result in a condition known as Argyria, a condition with bluish pigmentation of the skin and eyes.
 TIN: Prolonged inhalation of fume may result in lung complications.
 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.

NOTE: Array Solders does not recommend, manufacture, market or endorse any of its products for human consumption.



WARNING: This product can expose you to chemicals including [lead] which is known to the State of California to cause cancer, and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

WARNING: This product contains lead. Lead may be harmful to your health. US Federal law prohibits the use of leaded solders in making joints or fittings in any private or public water supply system. Keep out of the reach of children.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Components | % wt | CAS Registry #/EINECS | PEL mg/m ³ | TLV-TWA mg/m ³ | TLV-STEL mg/m ³ |
|------------|----------|-----------------------|--------------------------|------------------------------|-------------------------------|
| TIN | 10-63.5% | 7440-31-5/231-141-8 | | | |

| | | | | | | | |
|--------|----------|---------------------|------|------|--------------|------|------|
| | | (EU) | | 2 | 2 | | |
| | | (Canada) | - | 2 | 2 | 4 | 4 |
| | | (Singapore) | | 2 | - | | - |
| Lead | 32-88.5% | 7439-92-1/231-100-4 | | | | | |
| | | (US) | | 0.05 | 0.05 | | N.E. |
| | | (EU) | | N.E. | 0.15 | | N.E. |
| | | (Canada) | N.E. | 0.05 | | N.E. | |
| | | (Mexico) | 0.15 | N.E. | | N.E. | |
| | | (China) | | - | 0.05(dust) - | | |
| | | (Singapore) | | 0.15 | 0.03(fume) | | N.E. |
| Silver | 0-2.5%* | 7440-22-4/231-131-3 | | | | | |
| | | (US) | | 0.01 | 0.1 | | N.E. |
| | | (EU) | | N.E. | 0.1 | | N.E. |
| | | (Canada) | N.E. | 0.1 | | 0.3 | |
| | | (Mexico) | 0.1 | N.E. | | N.E. | |
| | | (Singapore) | | 0.1 | N.E. | | N.E. |
| Rosin | ** | 65997-05-9 | | N.E. | N.E. | | N.E. |
| | | (EU) | | 0.05 | N.E. | | 0.15 |

Alloy Table

| Alloy | % Tin (sn) | % Silver (ag) | % Lead (pb) | % Antimony (sb) | %Copper (cu) | RoHS 2/3 Compliance (2011/65/EU) |
|---------------|------------|---------------|-------------|-----------------|--------------|----------------------------------|
| 10sn/88pb/2ag | 9-10.6 | 1-2.6 | 87-88.6 | - | - | No |
| 62sn/36pb/2ag | 58.9-61.4 | 1.9-1.98 | 34-35.6 | - | - | No |
| 63sn/37pb | 62.5-63.5 | N/A | Balance | | | No |
| 60sn/40pb | 59.5-60.5% | N/A | Balance | | | No |

Additional information:

This solder product does not contain any Substance of Very High Concern (SVHC) of the European Chemicals Agency (ECHA) Candidate List.

Rosin flux formulas are proprietary.

Composition and weight percent of solder alloys varies widely and can be determined by product label. Flux in core is typically 1-3.3% in weight.

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4. FIRST AID MEASURES

Eye Contact: Hold eyelids apart and flush eyes with plenty of tepid water for at least 15 minutes. Seek medical attention if irritation persists.

Ingestion: If patient is conscious, ONLY induce vomiting as directed by trained personnel. NEVER give anything by mouth to an unconscious person. Seek medical attention immediately.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration or oxygen by trained personnel. Seek immediate medical attention.

Skin Contact: Remove contaminated clothing. Wash affected area with soap and water. Wash clothing before reuse. If irritation persists, obtain medical attention.

5. FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing agents: CO₂, do not use water.

For safety reasons unsuitable extinguishing agents: Water

Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon monoxide (CO)

Carbon dioxide (CO₂)

Melted solder above 1000°F will liberate toxic lead fumes and aliphatic aldehydes.

Advice for firefighters Protective equipment: Wear self-contained respiratory protective device.

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6. ACCIDENTAL LEAK MEASURES

Spill or Leak Procedures: Pick up solids and put in container for reuse or recycling. Do not sweep powder or small particulate. Use vacuum. Reduce airborne dust and prevent scattering by moistening with water. Dispose of following all Federal, State and Local regulations.

7. HANDLING & STORAGE

Handling: Keep containers tightly closed when not in use. Use care to avoid spills.

Always thoroughly wash your hands after handling this product. DO NOT touch or rub eyes until hands are washed.

Storage Precautions: Refer to product label for specific storage temperature requirements. Rotate stock to ensure use before expiration date on the label.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Exhaust ventilation is recommended to keep exposures below established limits and protect operators. Use proper ventilation when working with leaded products.

Personal protection:

Eyes: Chemical safety glasses/goggles. Face shield for splash hazards.

Respirator: An approved or compliant marked air-purifying respirator with a fume/organic chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated or exceed exposure limits.

Skin: Compatible chemical resistant gloves may be required for certain applications. Hot gloves as needed for melting applications.

Other: Lab coat, eye-wash fountain in work area. Avoid the use of contact lenses in high fume areas. Follow standard lead work practices when working with lead containing products.

Work/Hygienic: 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 applicable lead work practices.

Protection of Hands:



Material of gloves:

Nitrile, rubber, NBR

Natural rubber, NR

Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and to be observed.

Eye Protection:



Face shield when refilling.

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9. PHYSICAL & CHEMICAL PROPERTIES

| | | | |
|-------------------|-------------------------|----------------------|-----------------|
| Appearance: | Solid metal - wire | Boiling Point: | Not applicable. |
| Odor: | Odorless | Melting Point: | See table |
| Specific Gravity: | See table | pH: | Not applicable |
| Vapor Pressure: | Not established | Solubility in Water: | Insoluble |
| Vapor Density: | (air=1) Not applicable. | | |

10. STABILITY & REACTIVITY

| | |
|-------------------------------------|--|
| General: | Stable. |
| Conditions to Avoid: | Not established. |
| Incompatible Materials: | Avoid contact with acids, bases or oxidizing agents. |
| Hazardous Decomposition/Combustion: | Harmful organic fumes and toxic oxide fumes may form at elevated temperatures. |
| Hazardous Polymerization: | Will not occur. |

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: NTP(National Toxicity Program): No

OSHA (Occupational Safety & Health Administration): No

IARC (International Agency for Research on Cancer): Yes (Lead and its compounds)

LD50: Not established.

LC50: Not established.

12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity: No further relevant information.

Additional ecological information:

General Notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewer system. Danger to drinking water even if small quantities leak into the ground.

Result of PBT and vPvB assessment.

PBT: No applicable

vPvB: Not applicable

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Scrap metal alloy usually has value. Contact a commercial reclaimer for recycling. Otherwise, dispose of in accordance with all Federal, State and Local environmental regulations.

14. TRANSPORT INFORMATION

Transport in accordance with applicable international regulations and requirements. Not regulated under US DOT (United States Department of Transportation).

Not hazardous under shipping regulations (USDOT/IATA/IMDG).

UN – none

Not regulated for shipping- ground/IATA/IMDG

15. REGULATORY INFORMATION

The information in this Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated hereunder (29 CFR 1910.1200 ET. SEQ.).

In Malaysia:

This product has been classified in accordance with: Malaysian – OCCUPATIONAL SAFETY AND HEALTH (CLASSIFICATION, LABELING AND SAFETY DATA SHEET OF HAZARDOUS CHEMICALS) REGULATION OCTOBER 2013 – (CLASS). (GHS)

In China:

Decree No. 591: Regulations on the Control over Safety of Hazardous Chemicals

GB 30000.2-29-2013, Rules for classification and labeling of chemicals. (GHS)

GB/T 16483-2008, GB/T 17517-2013

This product has been classified using the Chinese Occupational Limit for Hazardous Agents in the Workplace, GBZ2-2007.

This product has been classified in accordance with the Mexican regulations NOM-018-STPS-2015 and NOM-010-STPS-2014.

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR).

This product has been classified in accordance with the guidelines set by the Dept of Industrial Health of the Republic of Singapore.

SARA 313 Listing - 40 CFR 372.65

Silver, Lead

All ingredients are listed on the EPA TSCA Inventory.



WARNING: This product exposes you to chemicals including [lead] which is known to the State of California to cause cancer, and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Revised Date: March 30, 2020
Prepared by: Liam George, Array Solders
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** - Notates data compared to the previous version has been revised.

Disclaimer:

The information and recommendations contained herein are, to the best of Array Solders' knowledge and belief, accurate and reliable as of the date issued. Array Solders does not warrant or guarantee their accuracy or reliability, and Array Solders shall not be liable for any loss or damage arising out of the user thereof. The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product, legal counsel should be consulted to ensure proper health, safety and other necessary information is included on the container.