TECHNICAL DATASHEET

Lead - Tin Alloy Sheet

Jaytee Alloys & Components Limited
(Formerly Jaytee Alloys & Components Pvt. Ltd.)

Product Name: Tin–Lead Alloy Sheet (7Sn / 93Pb)
Dimensions: 100 cm × 45 cm × 0.4 cm
Form: Solid metallic sheet
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1. Product Overview

The 7Sn/93Pb tin–lead sheet is a **soft, dense, and malleable alloy** made primarily from **lead (93%)** and **tin (7%)**. It is grey in color with a smooth metallic surface and can be easily formed, pressed, or cut. This alloy combines **lead's corrosion resistance and high density** with **tin's mechanical stability and bonding ability**, making it ideal for applications that require both **flexibility and protection** from radiation or corrosion.

2. Composition

Element	Symbol	Percentage (%)
Lead	Pb	93 ± 0.5%
Tin	Sn	7 ± 0.5%
Trace Elements (Cu, Sb, Bi, Fe, Ag, As, Ni)	—	< 0.1% Max

3. Physical Properties

- **Appearance:** Gray metallic sheet, no odor
- **Density:** ~11.0 g/cm³
- **Melting Range:** 300–314°C
- **Thermal Conductivity:** ~35 W/m·K
- **Electrical Conductivity:** ~7.5% IACS
- **Coefficient of Expansion:** 28 × 10^{-6} /°C
- **Specific Heat:** 0.16 J/g·K

4. Mechanical Properties

- **Hardness:** 10–15 HB
- **Tensile Strength:** 15–25 MPa
- **Elongation at Break:** 35–50%
- **Modulus of Elasticity:** ~16 GPa
- **Formability:** Excellent; can be bent or rolled cold

5. Key Features

- High **radiation attenuation** (X-ray and gamma).
- Excellent **malleability** and **formability**.
- Good **chemical resistance** to mild acids/alkalis.
- **Easily solderable** with common fluxes.
- Non-sparking and dimensionally stable.

6. Applications

- **Radiation shielding** in medical and industrial X-ray systems.
- **Soldering and sealing** components.
- **Bearing linings** and vibration dampers.
- **Chemical tank linings** or pipe protection.
- **Counterweights and ballast** materials.

7. Processing Information

- Can be **cut, pressed, or rolled** with standard tools.
- Use **rosin-based flux** for soldering.
- **Avoid machining** at high speeds (metal smears easily).
- **Clean surface** before joining for best results.
- Keep temperature below **350°C** to prevent oxide fume generation.

8. Storage & Handling

- Store in **dry, cool, and ventilated** areas.
- Keep sheets **flat and covered** to prevent oxidation.
- Avoid contact with **acids and Base**.

- Maintain **Safety Equipment** during handling (lead content).

9. Typical Sheet Weight

Dimensions (cm)	Thickness (cm)	Density (g/cm³)	Approx. Weight (kg)
100 × 45 × 0.4	0.4	11.0	≈ 20.8 kg

10. Notes

All technical values are typical and for reference. Actual performance depends on application conditions and processing environment. Users must ensure compliance with relevant safety and handling guidelines.

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