

**Technical Data Sheet for Sac 305 Solder Alloy**

**Product Name:** SAC 305 Solder Alloy

**Composition:** 96.5% Tin (Sn), 3% Silver (Ag), 0.5% Copper (Cu)

**Melting Point:** Approximately 217°C (422.6°F)

**Density:** 7.4 g/cm<sup>3</sup>

**Tensile Strength:** 40-50 MPa

**Electrical Conductivity:**  $8.5 \times 10^6$  S/m

**Thermal Conductivity:** 50 W/m·K

**Coefficient of Thermal Expansion:**  $24 \times 10^{-6}$  /°C (25-150°C)

**Flux Compatibility:** Good with most common flux types

**RoHS Compliance:** RoHS compliant, lead-free alloy

**Product Description**

SAC 305 is a lead-free solder alloy composed of 96.5% tin, 3% silver, and 0.5% copper. It is widely used in various soldering applications as a replacement for traditional tin-lead alloys. SAC 305 offers excellent wetting properties, good mechanical strength, and improved resistance to fatigue failure.

**Physical Properties**

Melting Point: The melting point of SAC 305 solder alloy is approximately 217°C (422.6°F), providing a relatively low temperature for soldering operations.

**Mechanical Properties**

Tensile Strength: The typical tensile strength of SAC 305 solder alloy ranges from 40 to 50 MPa, indicating its ability to form strong and reliable solder joints.

Electrical Conductivity: SAC 305 exhibits a high electrical conductivity of  $8.5 \times 10^6$  S/m, making it suitable for applications where good electrical connectivity is required.

Thermal Conductivity: The thermal conductivity of this solder alloy is approximately 50 W/m·K, allowing efficient heat transfer during soldering processes.

Coefficient of Thermal Expansion: SAC 305 has a coefficient of thermal expansion of  $24 \times 10^{-6}$  /°C (25-150°C), ensuring compatibility with various materials and reducing the risk of thermal stress-induced damage.

### **Flux Compatibility**

SAC 305 solder alloy demonstrates good compatibility with most common flux types. It readily interacts with fluxes to remove oxide layers and facilitate the wetting and bonding of solder joints.

### **Safety and Compliance**

SAC 305 solder alloy is RoHS compliant, meeting the requirements of the Restriction of Hazardous Substances directive. It is a lead-free alternative to tin-lead alloys, making it environmentally friendly and suitable for applications that demand compliance with RoHS regulations.

### **Note:**

This technical data sheet is provided for informational purposes only and should not replace specific product documentation or testing. Users should consult the manufacturer's guidelines and perform their own evaluations to ensure suitability for their intended applications.