

## 1145 Aluminum Alloy Overview

1145 aluminum alloy is a commercially pure aluminum alloy that belongs to the 1000 series of aluminum alloys. It is known for its high electrical conductivity and excellent formability. This alloy is commonly used in applications where conductivity and corrosion resistance are crucial.

### Chemical Composition

- Aluminum (Al): 99.45% minimum
- Silicon (Si): 0.05% maximum
- Iron (Fe): 0.05% maximum
- Copper (Cu): 0.05% maximum
- Other Elements: 0.05% maximum each, 0.15% total for other elements

### Physical Properties

- Density: 2.71 g/cm<sup>3</sup> (0.0978 lb/in<sup>3</sup>)
- Melting Point: 660.3°C (1220.5°F)

### Mechanical Properties

- Tensile Strength: 65-110 MPa (9,500-16,000 psi)
- Yield Strength: 35-95 MPa (5,000-13,800 psi)
- Elongation: 25-35%
- Modulus of Elasticity: 68.9 GPa (10,000 ksi)

### Applications

1. 1145 aluminum alloy finds applications in various industries due to its high electrical conductivity and formability:
2. Electrical Conductors: It is commonly used in electrical conductors and wiring due to its excellent electrical conductivity.
3. Radiators and Heat Exchangers: Due to its good thermal conductivity and corrosion resistance, it is used in radiators and heat exchangers.
4. Reflectors: Its reflective properties make it suitable for reflective surfaces in lighting and decorative applications.
5. Household Foil: Its formability makes it suitable for producing household foil used for wrapping food and other items.
6. Cable Wrapping: It is used for cable wrapping to protect cables from environmental factors.
7. Laminated Foil: Used in laminated foil applications for packaging and insulation purposes.
8. Decorative Items: Its reflective nature and ease of forming make it suitable for various decorative items.

1145 aluminum alloy's high electrical conductivity and formability make it a versatile choice for applications in the electrical, packaging, and decorative industries. Its use in electrical conductors, heat exchangers, reflectors, and household foil showcases its adaptability and practicality. Its lightweight nature and corrosion

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resistance further contribute to its suitability for various applications.

