

Aluminium 6061 / 3.3211 / Al-Mg1SiCu

Alternative Designations

EN-AW6061 | Al-Mg1SiCu (ISO) | AA6061 (ANSI/AA) | H20 (BS) | A-GSUC (AFNOR) | L-3420 (UNE) | A96061 (UNS) | A6061 (JIS) | GS11N (CSA)

Key Features

High strength • Good weldability • Corrosion resistant

Description

Aluminium 6061 is a precipitation-hardened aluminum alloy, containing magnesium and silicon as its major alloying elements. It has good mechanical properties, exhibits good weldability, and is very commonly extruded (second in popularity only to 6063). It is also commonly used in forging applications. With a tensile strength of 180 Mpa, this is a high strength alloy and is very suitable for highly loaded structures such as scaffolds, rail coaches, machine and aerospace parts.

Mechanical Properties

| | |
|----------------------|---------------|
| Yield strength | 110 – 240 MPa |
| Tensile strength | 180 – 260 MPa |
| Elongation at break | 7 – 15% |
| Hardness | 65 – 85 |
| Module of elasticity | 70 GPa |

Physical Properties

| | |
|----------------------------------|---|
| Density | 2.7 g/cm ³ |
| Electrical conductivity | 22 – 30 m/Ω · mm ² |
| Coefficient of thermal expansion | 23.6 K ⁻¹ · 10 ⁻⁶ |
| Thermal conductivity | 170 – 200 W/m · K |
| Specific heat capacity | 896 J/kg · K |

Chemical Composition

| | | | |
|----|--------------|----|------------|
| Al | Rest is Al | N | - |
| Bi | - | Nb | - |
| C | - | Ni | - |
| Cd | - | O | - |
| Co | - | P | - |
| Cr | 0.04 – 0.35% | Pb | - |
| Cu | 0.15 – 0.40% | S | - |
| Fe | 0.7% | Si | 0.4 – 0.8% |
| H | - | Sn | - |
| Mg | 0.8 – 1.2% | Ti | 0.15% |
| Mn | 0.15% | V | - |
| Mo | - | Zn | 0.25% |

Reference

Datasheets provided by Xometry contain materials sourced through trusted OEMs, material distributors, and databases. Please visit Materialdatacenter.com for further information on this material.