# C19010

TRIANGL EALLOY©

## DATA SHEET

Fabricated Metal Products

| Alloy Designation | |
|---|---|
| **EN** | CuNiSi |
| **DIN** | CuNiSi |
| **UNS** | C19010 ASTM B422 B888 |
| **JIS** | C1901 |

**Characteristics**

**C19010** is a precipitation-hardened Cu–Ni–Si alloy that combines elevated strength with good electrical and thermal conductivity. It is strengthened by Ni–Si precipitates formed during cold working and subsequent heat treatment, giving excellent formability and bendability while maintaining stable stress-relaxation performance (effective up to about 150 °C). The alloy shows good corrosion resistance—including resistance to stress-corrosion cracking—and offers reliable weldability, solderability and brazability.

| Chemical Composition | | |
|---|---|---|
| **Ni** | 0.8 - 1.8 | % |
| **Si** | 0.15 - 0.35 | % |
| **Cu** | Remainder | |

| Main Applications |
|---|
| Press-Fit terminal / Press-fit pin |
| Switches and relays \| contact blades \| contact springs |
| Connectors \| Semiconductor components |
| Junction boxes |

## Physical Properties (Reference values at room temperature)

| | | |
|---|---|---|
| **Density** | $g/cm^3$ | 8.91 |
| **Electrical conductivility** | IACS%(20°C)* | 53 |
| **Modulus of elasticity** | $KN/mm^2$ | 127 |
| **Coefficient of thermal expansion** | $10^{-6}/K$ | 16.8 |
| **Thermal conductivity** | W/(m*K) | 255 |

***value for the lowest temper class**

## Mechanical Properties

| TEMPER | | Tensile Strength Mpa | Yield Strength Mpa | Elongation % | Hardness HV | Bending Test(90°) GW | Bending Test(90°) BW |
|---|---|---|---|---|---|---|---|
| **R360** | H01 | 360 - 430 | min. 275 | min. 8 | 100 - 130 | 0 | 0 |
| **R410** | H02 | 410 - 470 | min. 360 | min. 7 | 120 - 155 | 0 | 0.5 |
| **R460** | TM03 | 460 - 520 | min. 340 | min. 12 | 135 - 165 | 0 | 0.5 |
| **R490** | TM04 | 490 - 560 | min. 410 | min. 10 | 140 - 170 | 0 | 0.5 |
| **R520** | TM06 | 520 - 590 | min. 440 | min. 8 | 150 - 180 | 0.5 | 0.5 |
| **R580** | TM08 | 580 - 655 | min. 510 | min. 6 | 160 - 210 | 1 | 1 |

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