# Ualloy 035
# (Resistance heating wire and resistance wire)

Common Name: CuNi30,NC35.Cu70Ni30

Ualloy035 is a copper-nickel alloy (Cu70Ni30 alloy) with low resistivity for use at temperatures up to 350°C.

Ualloy035 is kind of low resistance heating alloy.It is one of the key materials of the low-voltage electrical products. It is widely used in low-voltage circuit breaker, electric blankets.thermal overload relay, and other low-voltage electrical product.

Ualloy035 is typically used for low-temperature applications such as heating cables.

## Normal composition(%)

| | | | |
|---|---|---|---|
| Nickel | 30 | Manganese | 0.5 |
| Copper | Bal. | | |

## Typical Mechanical properties（1.0mm）

| Yield strength | Tensile Strength | Elongation |
|---|---|---|
| Mpa | Mpa | % |
| 200 | 400 | 25 |

## Typical Physical properties

| | |
|---|---|
| Density ($g/cm^3$) | 8.9 |
| Electrical resistivity at 20℃($\Omega mm^2/m$) | 0.35 |
| Temperature factor of resistivity（20℃~600℃）$X10^{-5}$/℃ | <10 |
| Conductivity coefficient at 20℃ (WmK) | 27 |
| EMF vs Cu(μV/℃)(0~100℃) | -37 |

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| Coefficient of thermal expansion | |
|---|---|
| Temperature | Coefficient of Thermal Expansion x$10^{-6}$/℃ |
| 20 ℃- 400℃ | 17 |

| Specific heat capacity | |
|---|---|
| Temperature | J/gK |
| 20℃ | 0.390 |

| | |
|---|---|
| Melting point (℃) | 1170 |
| Max continuous operating temperature in air (℃) | 350 |
| Magnetic properties | non-magnetic |

## Corrosion resistance performance

| Alloys | Working In atmosphere at 20℃ | Working at max temperature 200℃ | | | | |
|---|---|---|---|---|---|---|
| | | Air and oxygen contain gases | gases with Nitrogen | gases with sulfur oxidability | gases with sulfur reductibility | carburization |
| Ualloy035 | good | good | good | good | bad | good |

## Style of supply

| Alloys Name | Type | Dimension | |
|---|---|---|---|
| Ualloy035W | Wire | D= 0.06~8mm | |
| Ualloy035R | Ribbon | W= 0.4~40mm | T= 0.05~2.9mm |
| Ualloy035S | Strip | W= 8~200mm | T= 0.1~3.0 |
| Ualloy035F | Foil | W= 6~120mm | T= 0.005~0.1 |
| Ualloy035B | Bar | Dia= 8~100mm | L= 50~1000 |

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