

## High Conductivity and Heat Resistance Copper Alloy

# NKE012

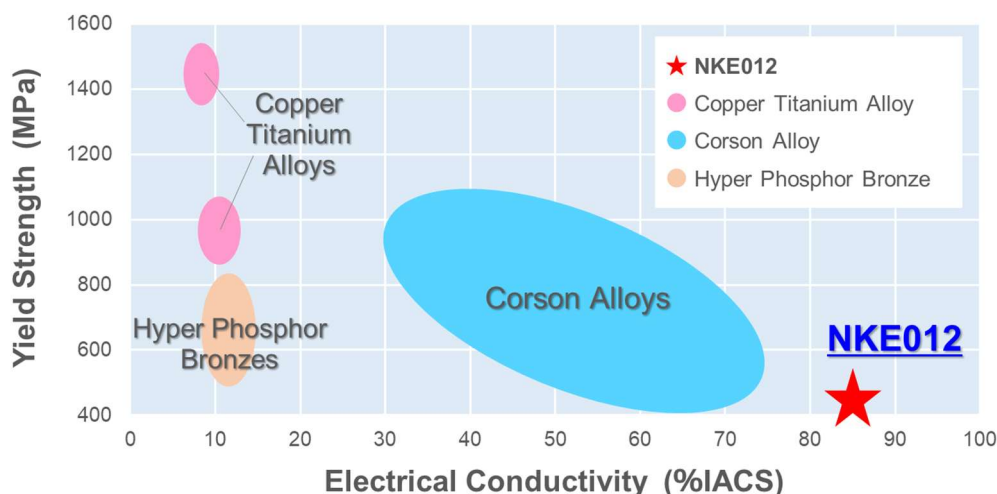
## UNS C14415

※Data in this sheet are typical values (not specification).

### Features

- NKE012 has a conductivity close to that of pure copper, and has good conductivity and thermal conductivity.
- Strength and stress relaxation resistance are improved compared to pure copper by adding a small amount of Sn.
- NKE012 has high bend formability.

### Our Copper Alloy Lineup



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### Material Properties

#### 1. Chemical Composition

Element	Cu	Sn
Nominal value (wt%)	Bal.	0.12

#### 2. Physical Properties

Electrical Conductivity (%IACS) (@20°C)	85
Specific Resistance (nΩ·m) (@20°C)	19
Thermal Conductivity (W/(m·K))	335
Thermal Expansion Coefficient (×10 <sup>-6</sup> /K) (@20~200°C)	17.7
Modulus of Elasticity (GPa)	128
Specific Gravity	8.92

## 材料特性

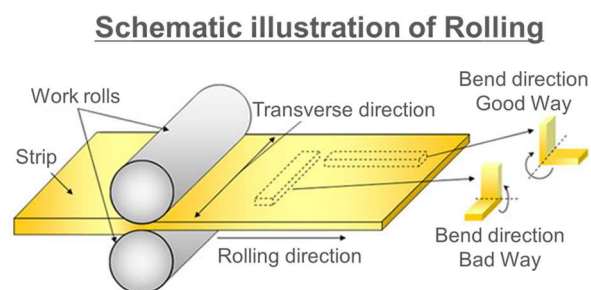
### 3. Mechanical Properties

Temper	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (%)	Hardness (Hv)
H	430 (375 - 475)	420	3.0 (≥1.0)	130 (95 - 160)
EH	500 (410 - 600)	490	2.0	145 (105 - 175)

Upper : Typical value, Lower : Standard range

### 4. W-Shaped 90 degree Bend Formability

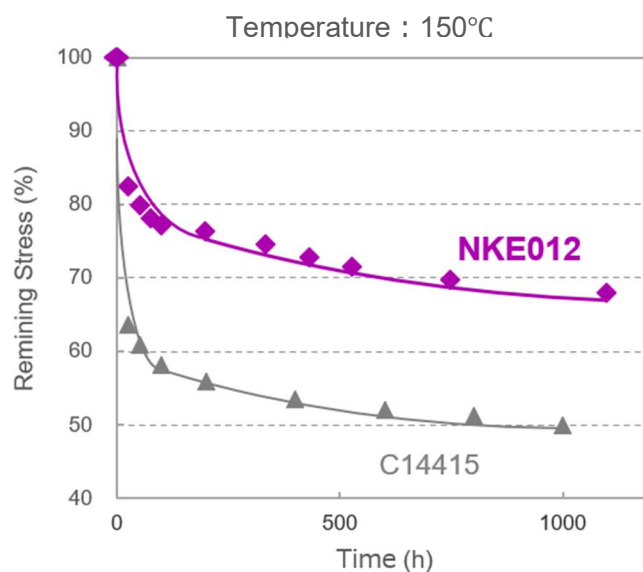
Width (mm)	Temper	Thickness (mm)	Minimum Bend Radius / Thickness	
			Good Way	Bad Way
10	H	≤0.64	0	0
	EH	≤0.64	0.5	0.5
0.2	H	≤0.20	0	0
	EH	≤0.20	0	0



※In accordance with Japan Copper and Brass Association technical standard (JCBA T307)

### 5. Thermal Stress Relaxation Resistance

- NKE012 has excellent stress relaxation resistance compared to C14415, which has the same chemical composition.



※Test method : JCBA T309

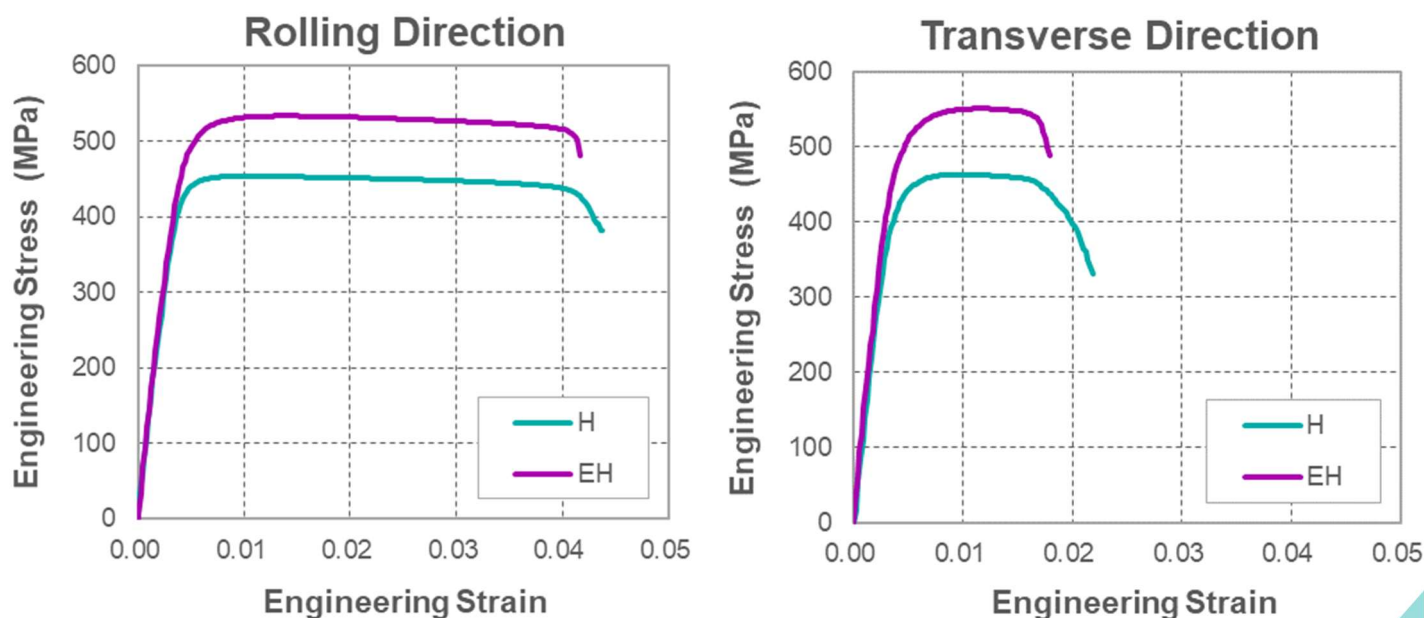
※Applied stress : Yield strength×80%

## Material Properties

### 6. Stress-Strain Curve

- Engineering Stress-Strain Curves for each temper of NKE012 can be downloaded from our official website.

Download : [https://www.jx-nmm.com/english/products/copper\\_foil\\_and\\_alloy/08hca/excel/NKE012\\_S-S\\_Curve.xlsx](https://www.jx-nmm.com/english/products/copper_foil_and_alloy/08hca/excel/NKE012_S-S_Curve.xlsx)



Stress-Strain Curves

## Production Thickness Range

Temper	Thickness Range (mm)
H	0.075 ~ 0.64
EH	0.05 ~ 0.80

- Please contact us for the latest stock status and inquiry of other thicknesses.

## Contact Address

Web Site : <https://www.jx-nmm.com/english/>

NKE012 introduction URL : [https://www.jx-nmm.com/english/products/copper\\_foil\\_and\\_alloy/08hca/nke012.html](https://www.jx-nmm.com/english/products/copper_foil_and_alloy/08hca/nke012.html)

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