

High-Performance Copper Alloy

NKC4419

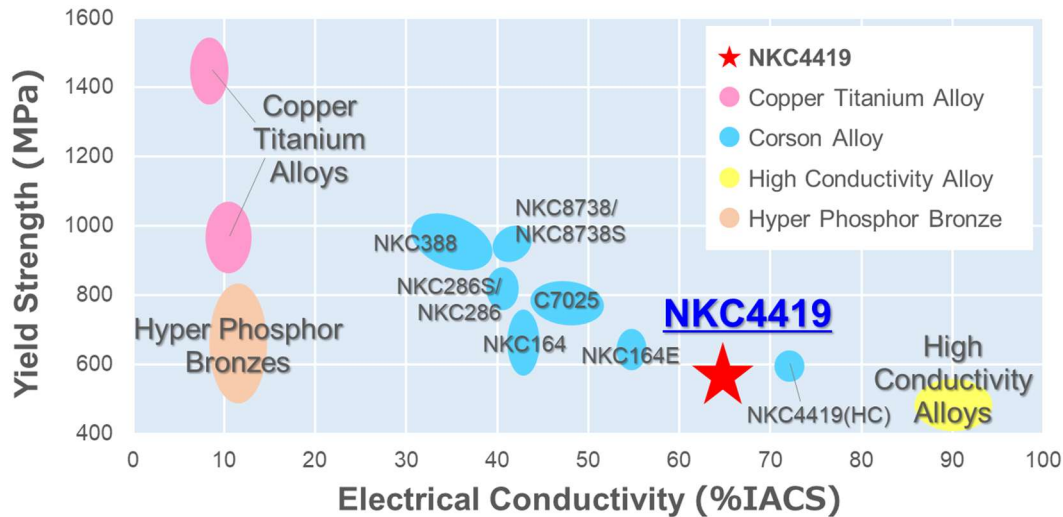
UNS C64800

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

Features

- NKC4419 has the same level of strength and bendability as phosphor bronze, a common connector material. Moreover, it has a conductivity of 65% IACS level.
- NKC4419 is an alloy with higher electrical conductivity than C7025 (standard Corson alloy).
- NKC4419 has relatively high stress relaxation resistance among copper alloys. Therefore, contact force can be maintained at high temperatures.

Our Copper Alloy Lineup



※Data are typical values (not specification).

Material Properties

1. Chemical Composition

| Element | Cu | Co | Si |
|---------------------|------|-----|------|
| Nominal Value (wt%) | Bal. | 1.9 | 0.44 |

2. Physical Properties

| | |
|--|------|
| Electrical Conductivity (%IACS) (@20°C) | 65 |
| Specific Resistance (nΩ·m) (@20°C) | 27 |
| Thermal Conductivity W/(m·K) | 260 |
| Thermal Expansion Coefficient (×10 ⁻⁶ /K) (@20~200°C) | 17.8 |
| Modulus of Elasticity (GPa) | 127 |
| Specific Gravity | 8.85 |

Material Properties

3. Mechanical Properties

| Temper | Tensile Strength (MPa) | Yield Strength (MPa) | Elongation (%) | Hardness (Hv) |
|--------|------------------------|----------------------|-------------------------|--------------------|
| 1/4H | 600 (520 - 650) | 480 (370 - 500) | 17.0 (≥ 10.0) | 180 (160 - 210) |
| H | 670 (590 - 720) | 650 (570 - 700) | 8.0 (≥ 2.0) | 200 (180 - 220) |

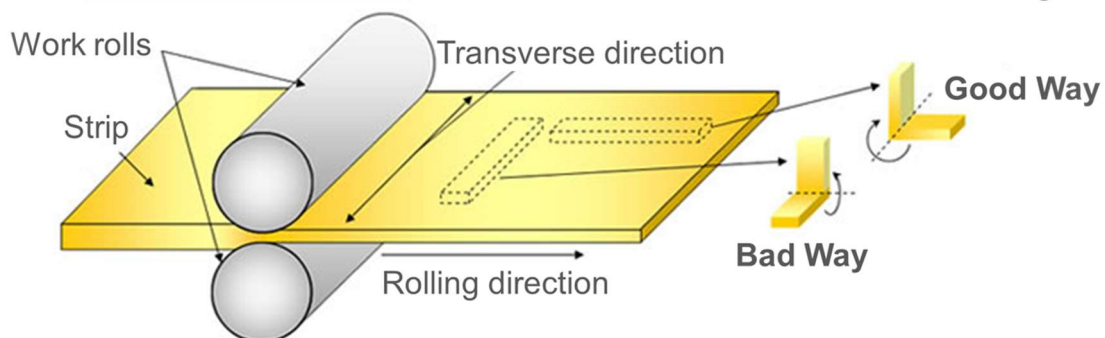
Upper : Typical value, Lower : Standard range

4. W-Shaped 90 degree Bend Formability

| Width (mm) | Temper | Thickness (mm) | Minimum Bend Radius / Thickness | |
|------------|--------|----------------|---------------------------------|---------|
| | | | Good Way | Bad Way |
| 10 | 1/4H | ≤ 0.20 | 0.3 | 0 |
| | H | ≤ 0.30 | 1.7 | 0.7 |
| 0.2 | 1/4H | ≤ 0.20 | 0 | 0 |
| | H | ≤ 0.20 | 0 | 0 |

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

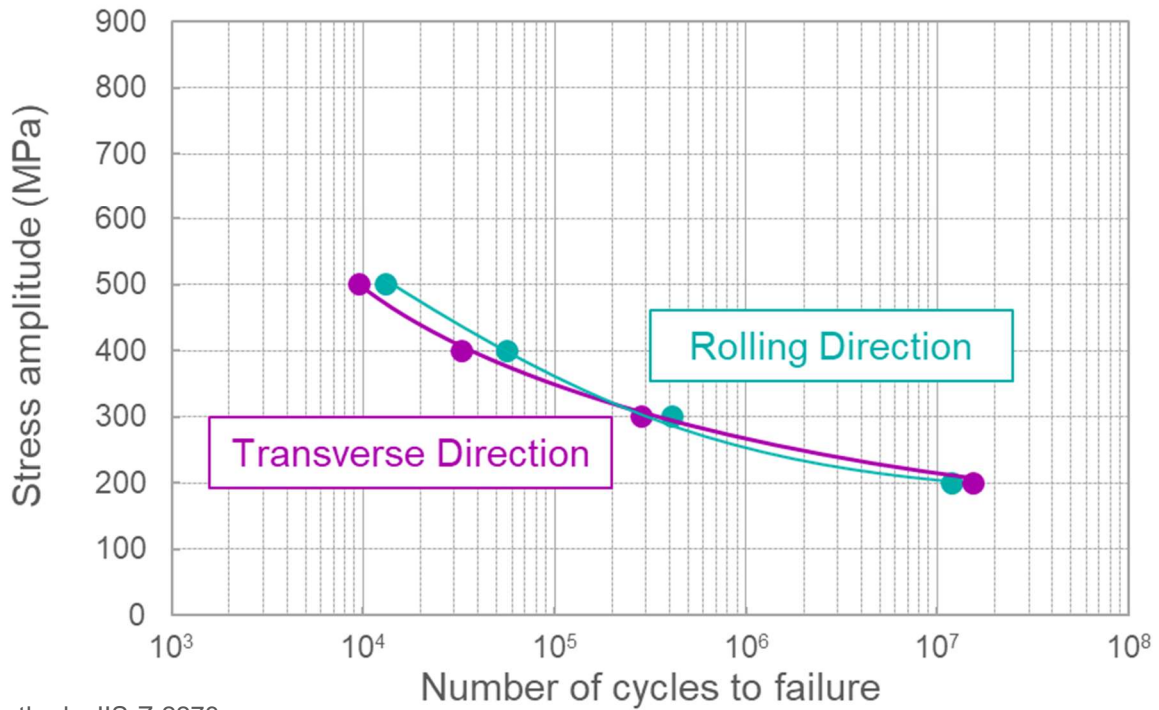
Bend direction from schematic illustration of rolling



Material Properties

5. Fatigue Property

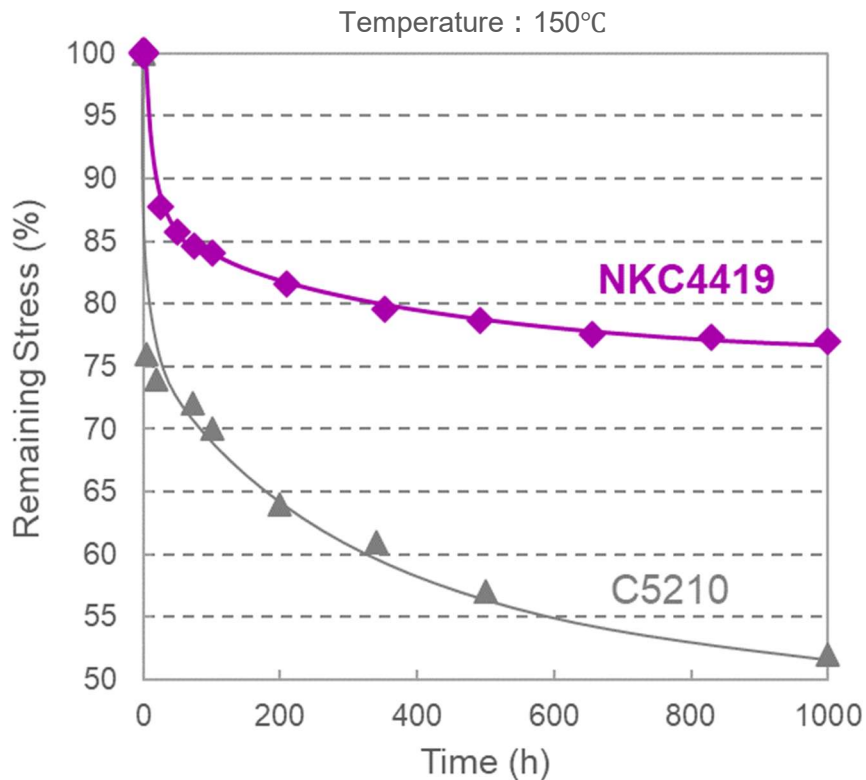
● NKC4419 exhibits excellent fatigue property.



※Test method : JIS-Z-2273

6. Thermal Stress Relaxation Resistance

● NKC4419 has superior stress relaxation properties compared to phosphor bronze.



※Test method : JCBA T309

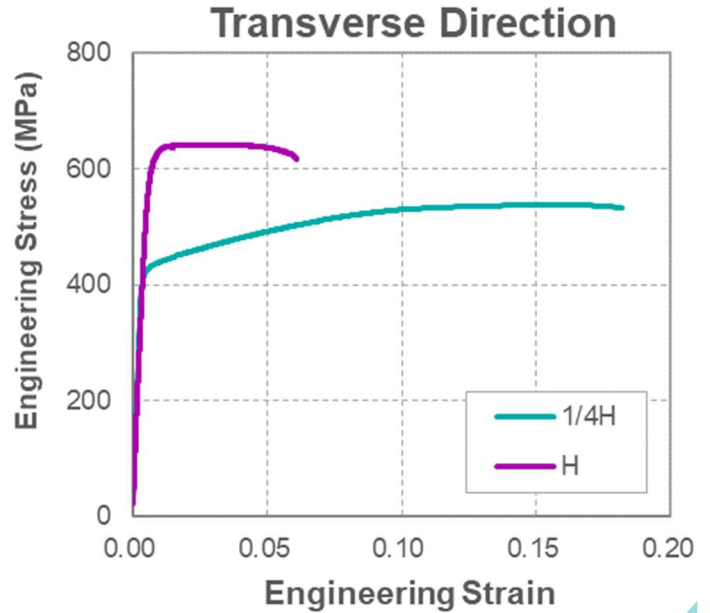
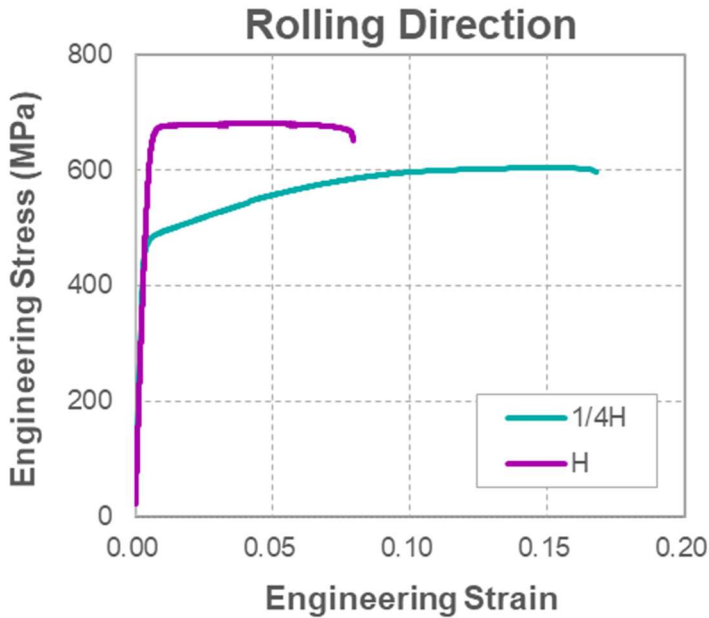
※Applied stress : Yield Stress × 80%

Material Properties

7. Stress-Strain Curve

- Engineering Stress-Strain Curves for each temper of NKC4419 can be downloaded from our official website.

Download : https://www.jx-nmm.com/english/products/copper_foil_and_alloy/03corson/excel/NKC4419_S-S_Curve.xlsx



Production Thickness Range

| Temper | Thickness Range (mm) |
|--------|----------------------|
| 1/4H | 0.15 ~ 0.30 |
| H | 0.05 ~ 0.40 |

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

Contact Address

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

NKC4419 introduction URL : https://www.jx-nmm.com/english/products/copper_foil_and_alloy/03corson/nkc4419.html

JX Advanced Metals Corporation

Functional Materials Division

Advanced Materials Group

10-4, Toranomom 2-chome, Minato-ku, Tokyo 105-8417, Japan



JX Advanced Metals Corporation

Call : +81-3-6433-6000