

High Performance Corson Alloy

NKC164

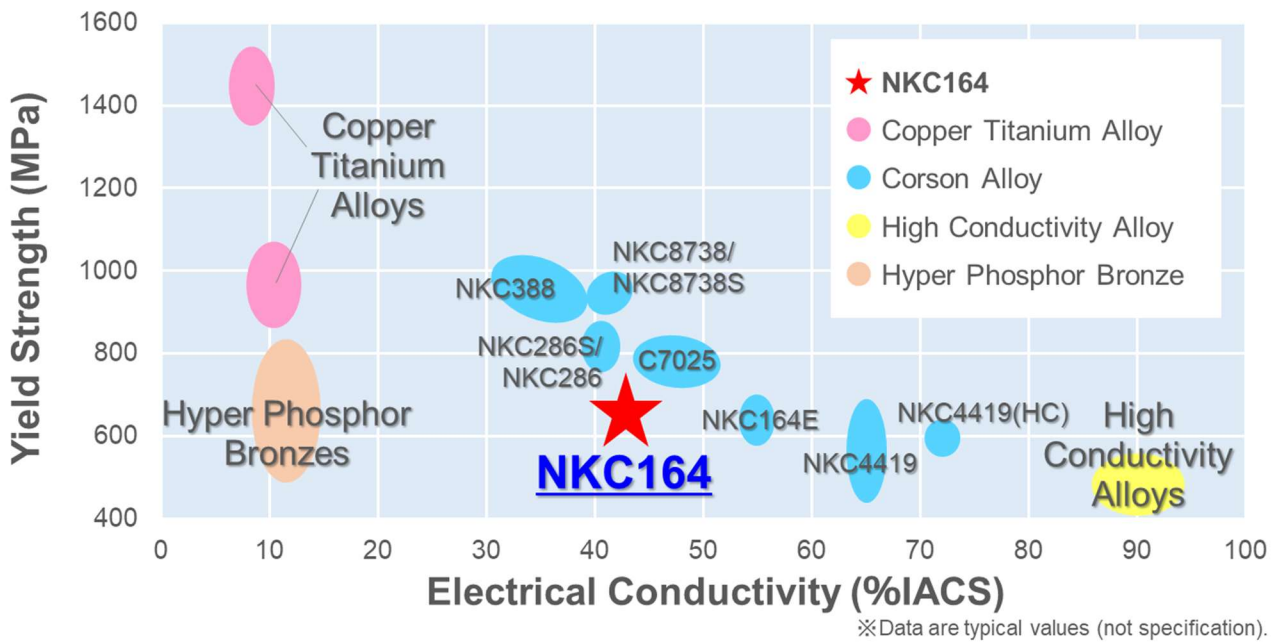
UNS C64745

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

Features

- NKC164 is our original Corson alloy (Cu-Ni-Si alloy) that has the same strength as phosphor bronze, high electrical conductivity, and excellent bend formability.
- NKC164 has good bend formability that can handle severe bending such as box bending.
- NKC164 has high stress relaxation resistance even at high temperatures.

Our Copper Alloy Lineup



Material Properties

1. Chemical Composition

Element	Cu	Ni	Si	Sn	Zn
Nominal Value (wt%)	Bal.	1.6	0.4	0.5	0.4

Material Properties

2. Physical Properties

Electrical Conductivity (%IACS) (@20°C)	43
Specific Resistance (nΩ·m) (@20°C)	40
Thermal Conductivity (W/(m·K))	170
Thermal Expansion Coefficient (×10 ⁻⁶ /K) (@20~200°C)	17.6
Modulus of Elasticity (GPa)	127
Specific Gravity	8.87

3. Mechanical Properties

Temper	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (%)	Hardness (Hv)
1/2H	640 (560 - 680)	610 (520 - 670)	8.0 (≥5.0)	190 (160 - 230)
H	680 (620 - 740)	660 (580 - 730)	6.0 (≥3.0)	200 (170 - 240)
EH	730 (680 - 800)	720 (640 - 790)	4.0 (≥1.0)	220 (200 - 270)

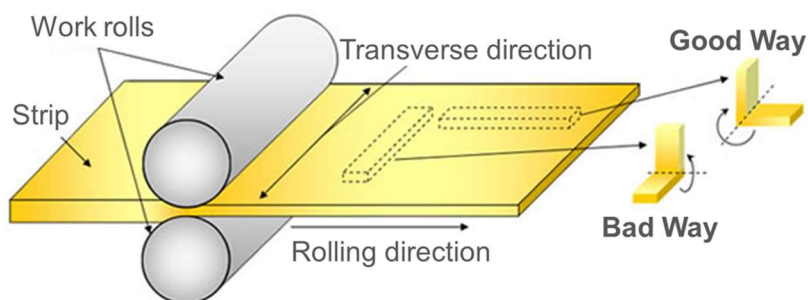
Upper : Typical value, Lower : Standard range

4. W-Shaped 90 degree Bend Formability

Width (mm)	Temper	Thickness (mm)	Minimum Bend Radius / Thickness	
			Good Way	Bad Way
10	1/2H	≤0.30	0	0
	H	≤0.30	0	0
	EH	≤0.25	0	1.5

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

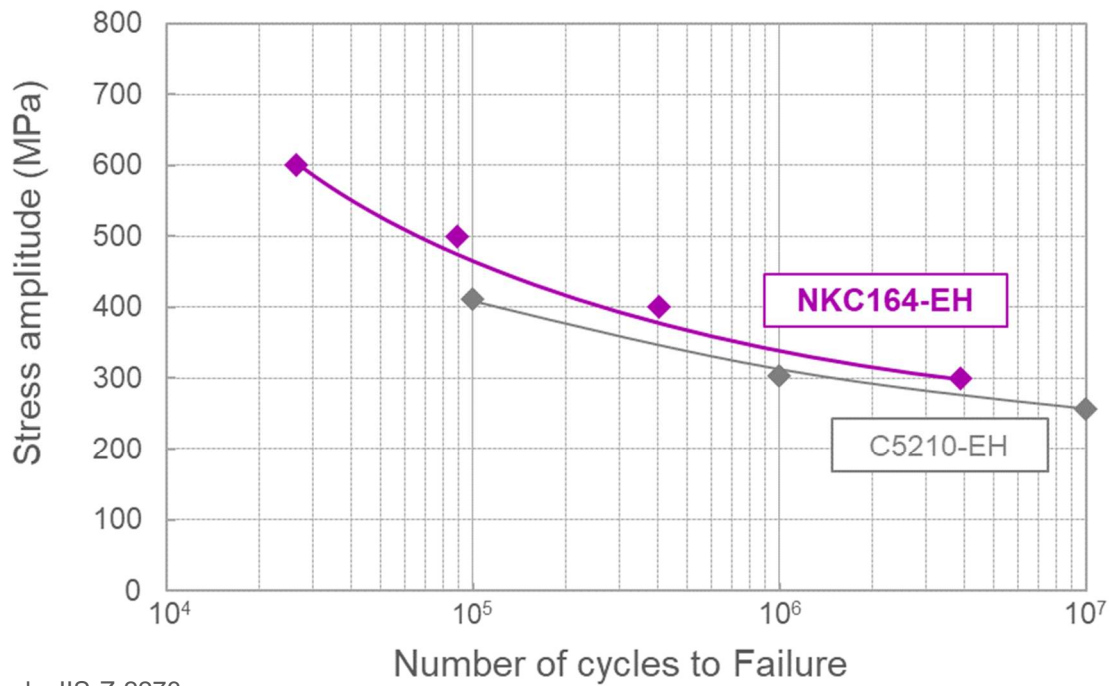
Bend direction from schematic illustration of rolling



Material Properties

5. Fatigue Property (Rolling Direction)

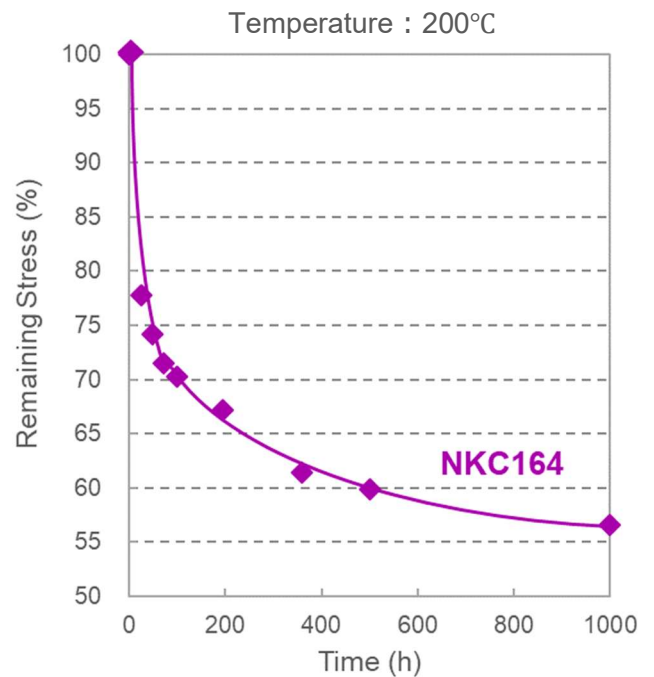
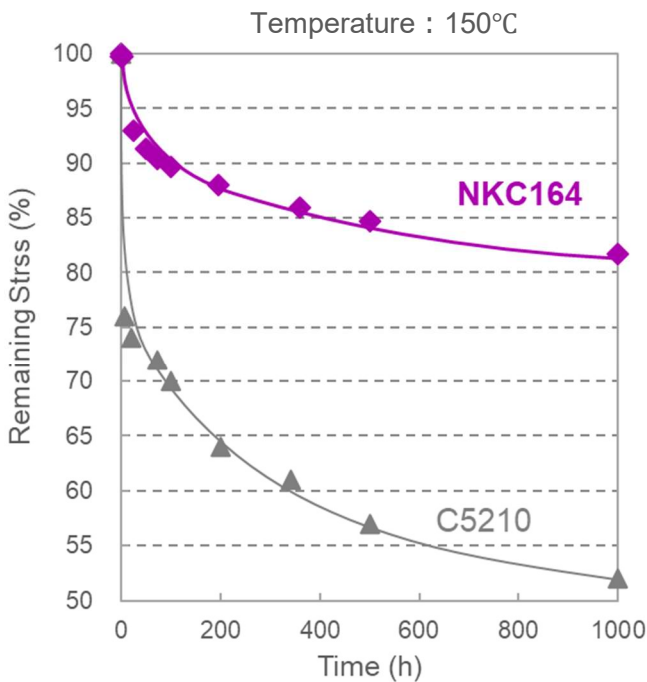
- NKC164 has better fatigue properties than phosphor bronze C5210.



※Test method : JIS-Z-2273

6. Thermal Stress Relaxation Resistance

- NKC164 has superior stress relaxation resistance compared to phosphor bronze C5210. High remaining stress is maintained even in a high temperature atmosphere of 200 °C.



※Test method : JCBA T309

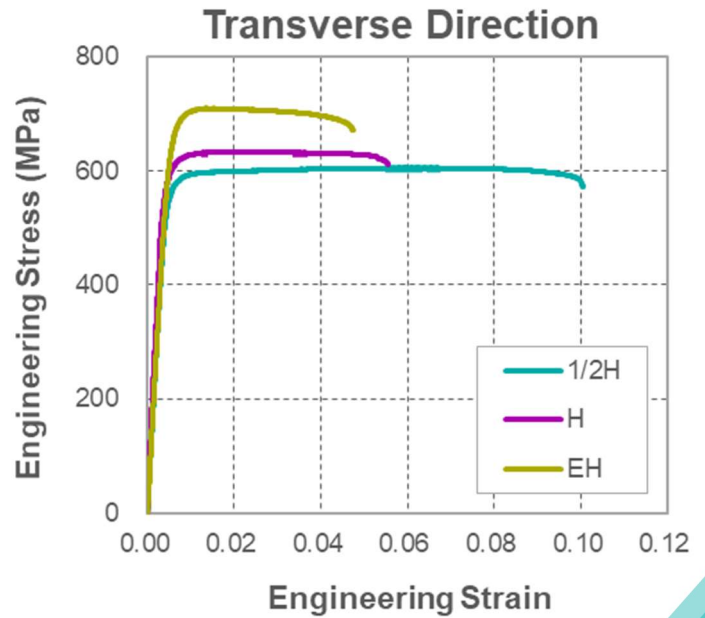
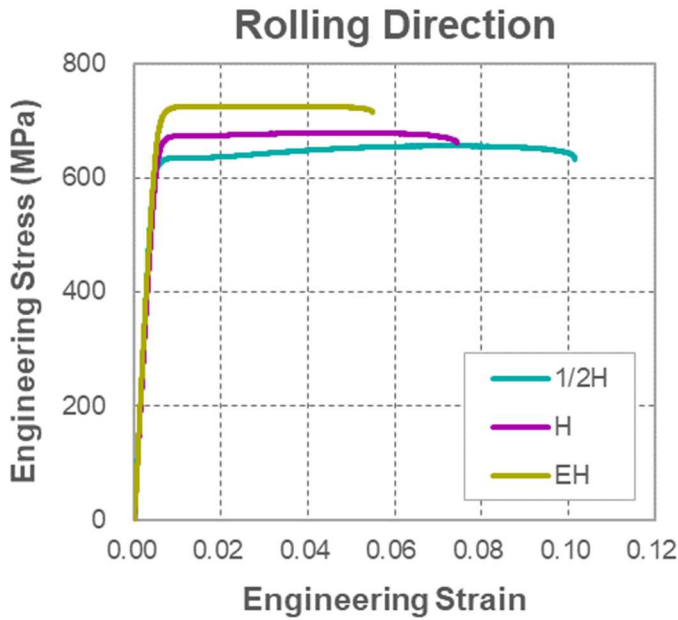
※Applied stress : Yield strength × 80%

Material Properties

7. Stress-Strain Curve

- Engineering Stress-Strain Curves for each temper of NKC164 can be downloaded from our official website.

Download : https://www.jx-nmm.com/english/products/copper_foil_and_alloy/03corson/excel/NKC164_S-S_Curve.xlsx



Production Thickness Range

Temper	Thickness Range (mm)
1/2H	0.10 ~ 0.64
H	0.10 ~ 0.64
EH	0.068 ~ 0.64

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

Contact Address

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

NKC164 introduction URL : https://www.jx-nmm.com/english/products/copper_foil_and_alloy/03corson/nkc164.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