

Products Information

Features

- Excellent balance of strength · bending workability · conductivity.
- Excellent heat resistance.
- The anisotropy of the mechanical properties is small

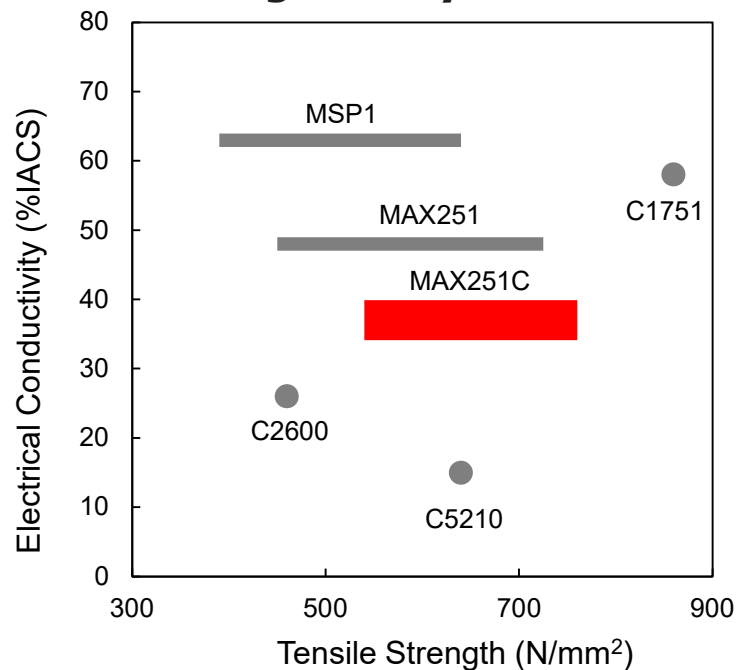
Chemical composition

(mass%)

Ni	Si	Sn	Zn	Cu
2.0	0.5	0.5	1.0	Rem. *

* Including inevitable impurities and trace additive elements

Positioning of Alloy



Physical properties

Property	Representative Value
Specific Gravity (293 K)	8.9
Coefficient of Thermal Expansion (/K : 293~573 K)	17.1×10^{-6}
Thermal Conductivity (W/(m·K) : 293 K)	160
Electrical Conductivity (%IACS : 293 K)	37
Modulus of Elasticity (kN/mm² : 293 K)	130
Poisson's ratio (293 K)	0.33

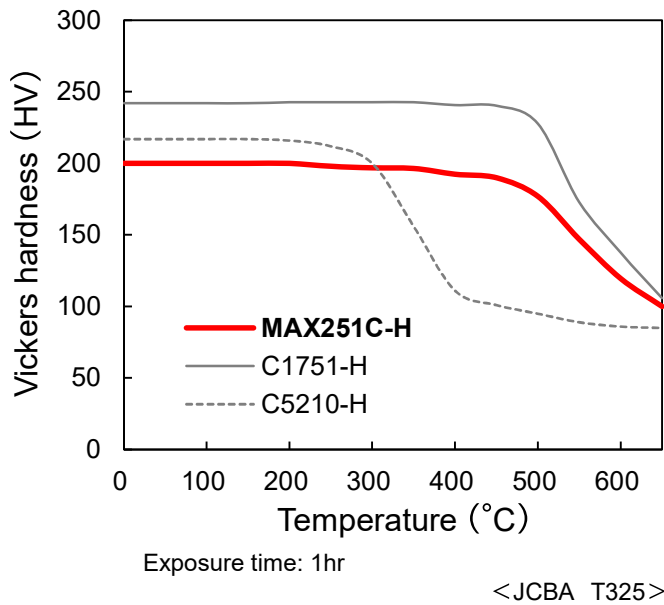
Mechanical properties

	Temper				Typical Values		
	1/2H	H	EH	SH	1/2H	H	EH
Tensile Strength (N/mm²)	540~640	600~700	640~740	700~800	626	675	717
0.2% Yield Strength (N/mm²)	-	-	-	650~780	554	584	663
Elongation (%)	8 Min.	5 Min.	3 Min.	2 Min.	17	15	11
Vickers Hardness* (HV)	(150~215)	(165~230)	(180~240)	(200~250)	(187)	(199)	(211)

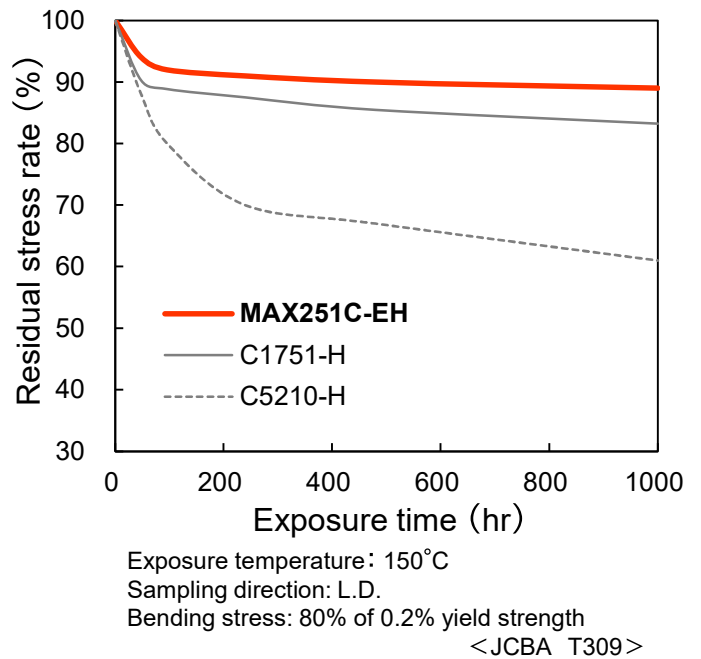
* Reference values

Products Information

➤ Heat resistance



➤ Stress relaxation resistance



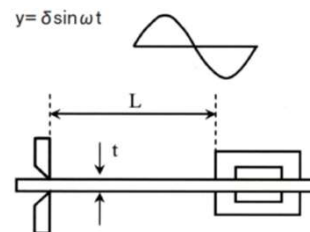
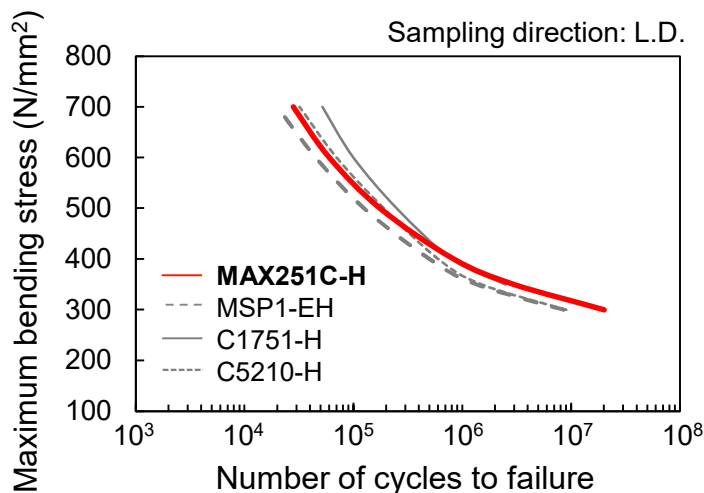
➤ Bendability

90° W-Bend, Specimen width=10mm, Load=9.8kN <JCBA T307>

Temper	Sampling direction (to the L.D.)	Bending radius (mm) R										R/t
		0.0	0.1	0.125	0.15	0.2	0.25	0.4	0.6	0.8	1.0	
1/2H	0°: Good Way	△	○	○	○	○	○	◎	◎	◎	◎	0.0
	90°: Bad Way	○	○	○	○	○	○	◎	◎	◎	◎	0.0
H	0°: Good Way	△	△	△	△	△	△	○	◎	◎	◎	0.0
	90°: Bad Way	○	○	○	○	○	○	◎	◎	◎	◎	0.0
EH	0°: Good Way	▲	▲	▲	△	△	△	△	○	○	○	0.6
	90°: Bad Way	▲	▲	△	○	○	○	○	◎	◎	◎	0.5

Criteria of evaluation: ◎Good(Acceptable), ○ Minor rough surface(Acceptable), △Rough surface(Acceptable), ▲Minor crack(Unacceptable), ×Major crack(Unacceptable)

➤ Fatigue properties



(Drive side) (Stationary side)
Calculation of formula of Bending stress
$$\sigma = 3/2 \cdot [(E \cdot t)/L^2] \cdot \delta$$

E: Modulus of Elasticity of specimen (N/mm²)
t: Thickness of specimen (mm)
L: Length of specimen (mm)
δ: Half amplitude on specimen (mm) ※ δ = 2mm
<JCBA T308>