

Products Information

CDA C18140(1/2H, H) C18141(SH)

Features

- Has high Tensile Strength and high Electrical Conductivity
- Has excellent heat resistance and excellent stress relaxation resistance characteristics
- Has excellent fatigue properties

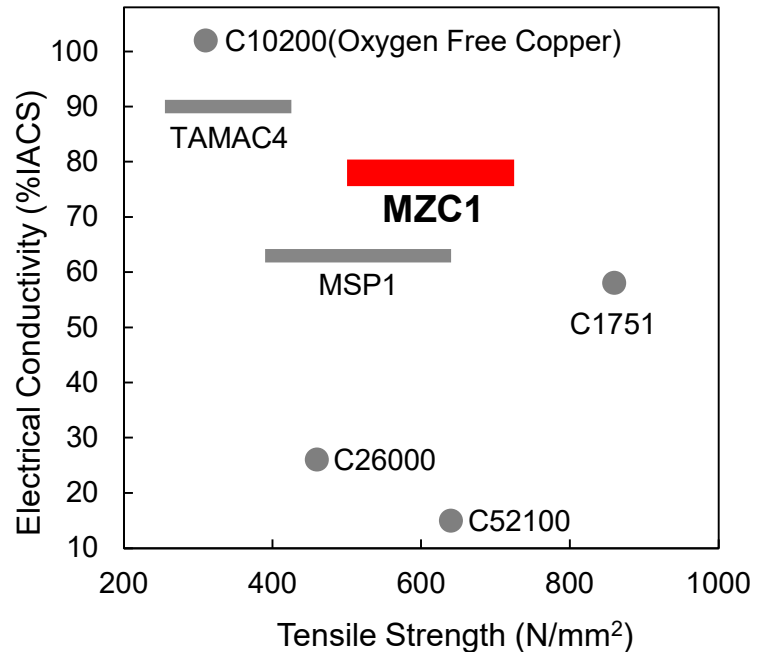
Chemical composition

(mass%)

Cr	Zr	Si	Cu
0.25	0.1	0.02	Rem.*

* Including inevitable impurities and trace additive elements

Positioning of Alloy



Physical properties

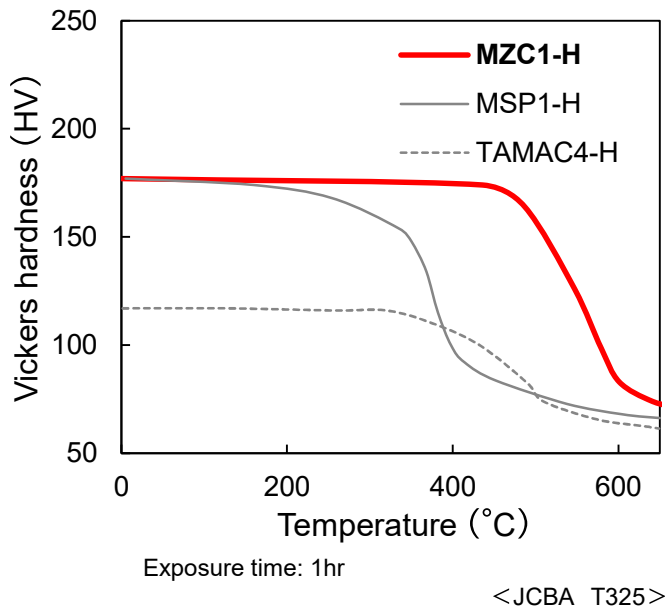
Property	Representative Value	
Specific Gravity (293 K)	8.9	
Coefficient of Thermal Expansion (/K : 293~573 K)	17.1 × 10 ⁻⁶	
Thermal Conductivity (W/(m·K) : 293 K)	1/2H, H 316	SH 287
Electrical Conductivity (%IACS : 293 K)	1/2H, H 82	SH 74
Modulus of Elasticity (kN/mm² : 293 K)	137	
Poisson's ratio (293 K)	0.32	

Mechanical properties

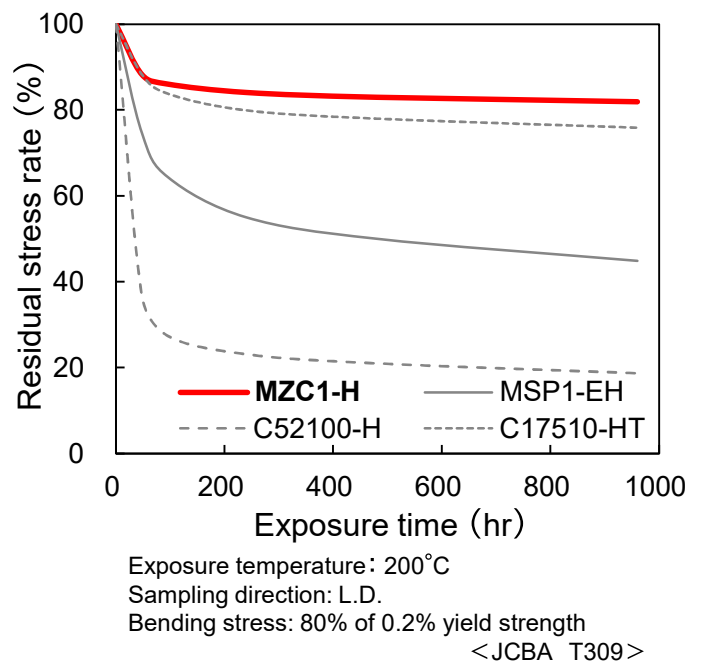
	Temper			Typical Values		
	1/2H	H	SH	1/2H t:0.15mm	H t:0.15mm	SH t:0.16mm
Tensile Strength (N/mm²)	500~600	555~655	575~725	538	598	632
0.2% Yield Strength (N/mm²)	—	—	—	502	567	611
Elongation (%)	6 Min.	3 Min.	2 Min.	16	14	13
Vickers Hardness* (HV)	(130~190)	(160~220)	(170Min.)	164	181	202

* Reference values

➤ Heat resistance



➤ Stress relaxation resistance



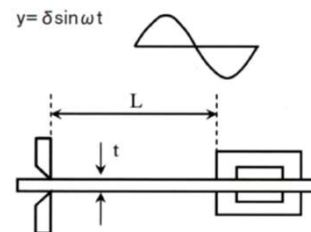
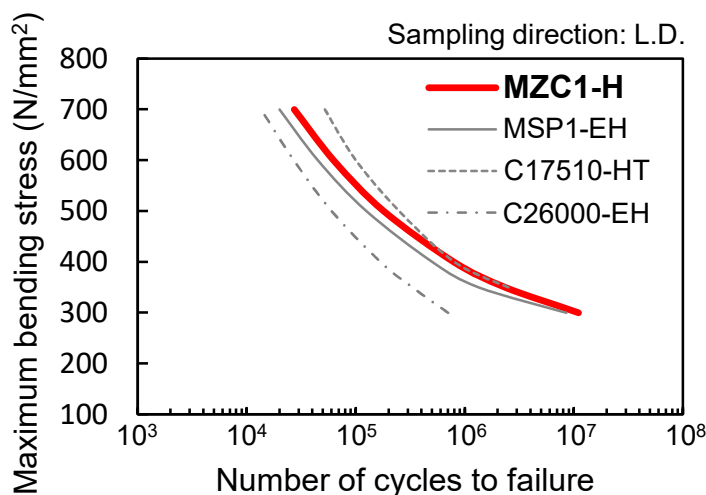
➤ Bendability

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	
H t:0.16mm	0°: Good Way	△	△	△	△	△	△	○	○	◎	◎	0.0
	90°: Bad Way	▲	▲	▲	▲	▲	▲	▲	△	○	◎	3.8
SH t:0.16mm	0°: Good Way	▲	△	△	△	△	△	○	○	◎	◎	0.6
	90°: Bad Way	▲	▲	▲	▲	▲	▲	▲	▲	▲	△	6.3

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) ※ $\delta = 2\text{mm}$
<JCBA T308>