MITSUBISHI MATERIALS

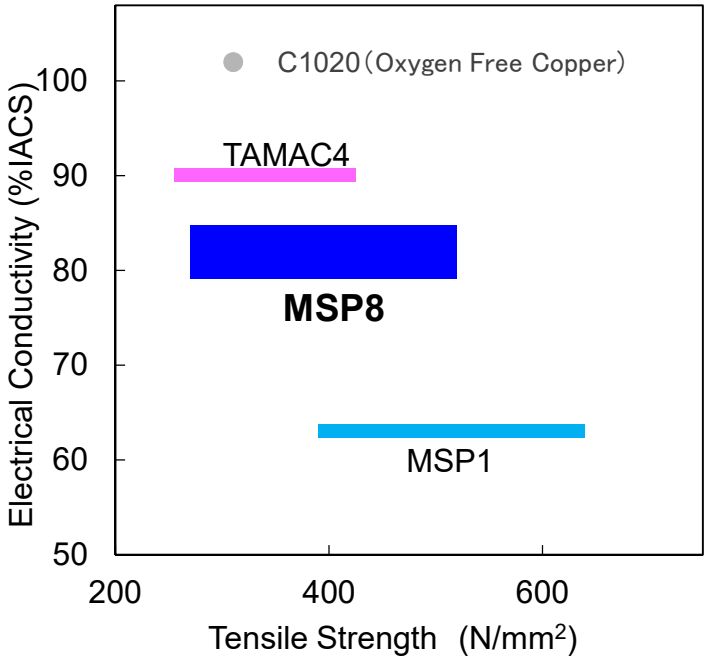
MSP8

CDA Alloy No.C18661

1. Features

- ☐ High electrical conductivity（82%IACS）
- ☐ High reliability with superior stress relaxation resistance for electric conductive parts
- ☐ Excellent blanking workability and high strength to form precise geometry

4. Positioning of Alloy



2. Chemical composition

（Weight%）

Mg	P	Cu
0.25	0.002	Rem.*

* Including inevitable impurities and trace additive elements

3. Physical properties

Property	Representative Value
Specific Gravity（293 K）	8.9
Coefficient of Thermal Expansion（/ K : 293～573 K）	17.8×10^{-6}
Thermal Conductivity（W /(m･K) : 293 K）	340
Electrical Conductivity（%IACS : 293 K）	82
Modulus of Elasticity（kN / mm² : 293 K）	131
Poisson's ratio（293 K）	0.28

5. Mechanical properties

	Temper				Typical values			
	1/4H	1/2H	H	EH	1/4H t:3.0mm	1/2H t:0.4mm	H t:0.8mm	EH t:0.64mm
Tensile Strength (N/mm²)	270 ~ 370	320 ~ 420	360 ~ 460	420 ~ 520	325	367	415	459
0.2% Yield Strength (N/mm²)	-	-	-	-	282	331	399	434
Elongation (%)	10 Min.	6 Min.	3 Min.	2 Min.	17	16	9	9
Elastic Limit $Kb_{0.1}$ *1 (N/mm²)	-	-	-	-	-	(334)	(357)	(384)
Vickers Hardness *2 (HV)	(70 ~ 130)	(85 ~ 145)	(100 ~ 160)	(110 ~ 170)	(102)	(113)	(130)	(141)

※1　Sampling direction：T.D.
※1, 2　Reference value

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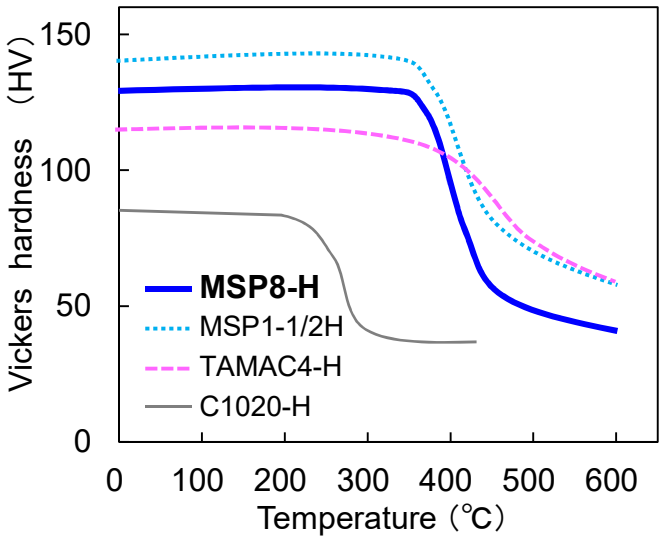
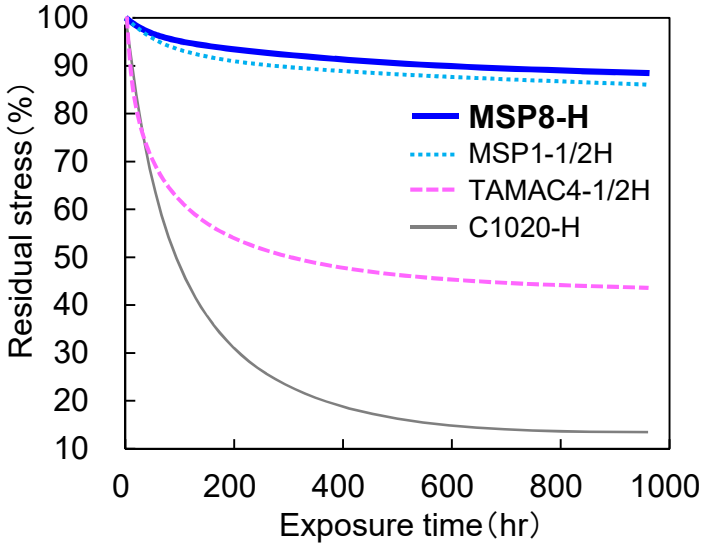
6. Resistance to Softening



Exposure time: 1hr

7. Stress relaxation resistance



Exposure temperature : 150℃
Sampling direction : L.D.
Bending stress : 80% of 0.2% yield strength

8. Bendability

Specimen : Width=10mm Test conditions : 90° W-Bend Load=9.8kN

Temper	Sampling direction (to the rolling direction)	Bending radius(mm) R										R/t
		0.0	0.1	0.2	0.25	0.4	0.6	1.0	1.6	2.0	3.0	
1/2H t:0.4mm	0°: Good way	▲	△	△	△	○	◎	◎	◎	◎	◎	0.3
	90°: Bad way	△	△	△	○	◎	◎	◎	◎	◎	◎	0.0
H t:0.64mm	0°: Good way	▲	▲	▲	△	△	△	○	◎	◎	◎	0.4
	90°: Bad way	×	×	▲	▲	△	△	△	○	◎	◎	0.6
EH t:0.64mm	0°: Good way	▲	▲	▲	▲	△	△	△	○	○	◎	0.6
	90°: Bad way	×	×	×	▲	▲	△	△	△	○	◎	0.9

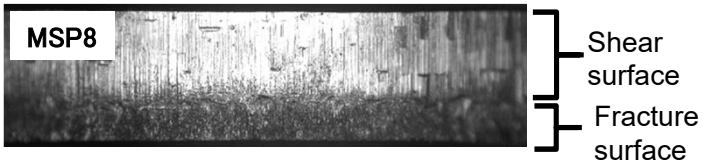
Method of evaluation: ◎Good (Acceptance), ○Minor rough surface (Acceptance), △Rough surface (Acceptance), ▲Minor crack (Rejection), × Major crack (Rejection)

9. Blanking workability

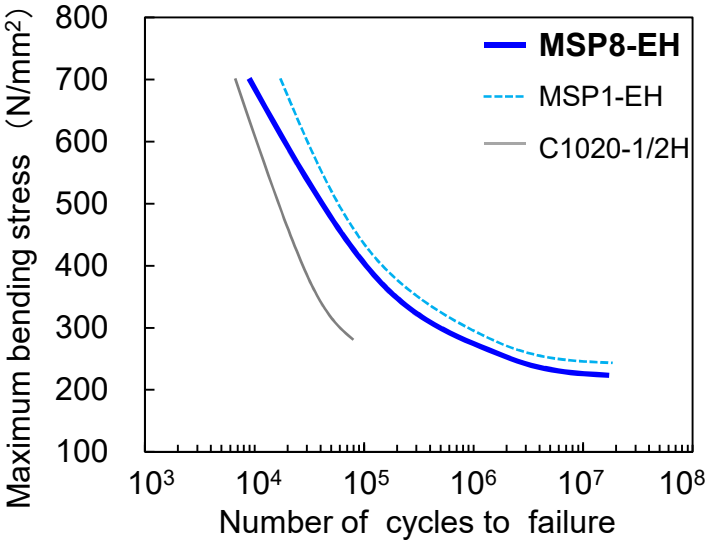
Superior blanking workability

- The end face after blanking is sharp and uniform without coarse inclusions.
- Boundary of Shear surface and Fracture surface is linear without secondary shear surface.

End face after blanking (clearance／thickness＝3%)



10. Fatigue properties



Sampling direction : L.D.

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