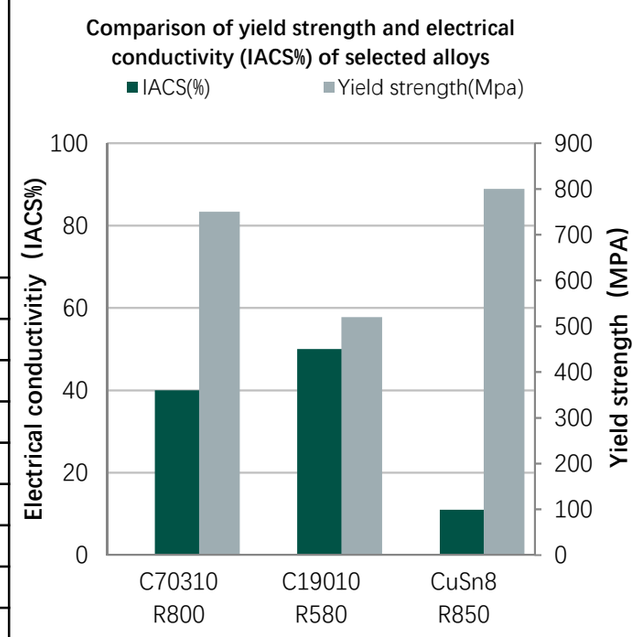
4.11 C70310

Application Range
Hardenable, higher alloyed Cu-Ni-Si alloys for high strength requirements up to 800 MPa in combination with good electrical conductivity, bendability and for the Cu-Ni-Si alloys typical good relaxation resistance. Partly suitable as substitution for beryllium alloys. Good resistance against stress corrosion cracking.

Physical Properties		
Density *	g/cm³	8.85
Thermal conductivity *	W/(m·k)	185
Electr. conductivity ***	MS/m	25/23
Electr. conductivity ***	IACS (%)	43/40
Thermal expansion c. **	10^{-6} K	17
Modulus of elasticity *	Gpa	132

Chemical Position (reference value) %	
Cu	Rest
Ni	1.0 - 4.0
Si	0.08 - 1.00
Sn	max. 1.00
Zn	max. 2.00
Other	max. 0.5

Condition	Temper class	Tensile strength T.S. min. - max. MPa	Yield strength Rp 0.2 min. MPa	Elongation A50 min. %		Hardness (reference value) HV	Electr. conductivity MS/m	Bendability R/t 1) 2) 90° GW Strip thickness ≤0.5mm	Bendability R/t 1) 2) 90° BW Strip thickness ≤0.5mm	Bendability R/t 1) 2) 180° GW Strip thickness ≤0.5mm	Bendability R/t 1) 2) 180° BW Strip thickness ≤0.5mm
Cold rolled	R360	360 - 430	250	14	16 3)	100 - 130	25	0	0	0	0.5
	R410	410 - 470	360	9	12 3)	125 - 155	25	0	0.5	0.5	1
	R460	460 - 520	410	7	10 3)	135 - 165	25	0.5	1	1.5	3
	R520	520 - 580	460	5	8 3)	145 - 175	25	1	2	2.5	3.5
	R580	580 - 650	520	4	6 3)	170 - 200	25	1	2.5	3	5
Precipitation hardened	R620	620 - 720	540	16		180 - 240	23	0	0	1	1.5
	R660	660 - 750	590	10		200 - 250	23	1	1	1.5	2
	R750	750 - 830	680	8		210 - 260	22	2	2	3	4
	R800	>800	750	5		> 210	22	2	3	4	5



*Reference values at room temperature

**Between 20 and 300 °C

*** Values for the lowest temper class

1) r = x · t (strips up to t = 0.50 mm)

2) Sample width = 10 mm / bending at smaller bending widths on request (Evaluation according to page 5.4.2. of Hand-Out)

3) Valid only as thermal stress relieved qualities