



Tipaloy Alloy No	RWMA Alloy Group A	Rockwell Hardness	Electrical Conductivity % IACS	Ultimate Strength PSI	Elongation % in 2"	Annealing Temperature	
						Celsius	Fahrenheit
#100	Class 1 - Wrought	60-B	80	65,000	14	350	660
#130	Class 2 - Cast	55-B	70	55,000	13	500	930
	- Wrought	65-B	75	80,000	12	500	930
Z#139	Class 2 - Wrought	65-B	70	80,000	13	500	930
Z#169	Class 1 - Wrought	60-B	80	62,000	14	-	-
#200	Class 3 - Cast	90-B	45	90,000	8	550	1020
	- Wrought	90-B	45	100,000	5	550	1020
#240	Class 3 - Cast	90-B	45	75,000	5	500	900
	- Wrought	95-B	45	95,000	10	500	900
T-4	Class 4 - Cast	33-C	20	110,000	0.5	375	710
	- Wrought	33-C	20	170,000	1	375	710
T-5	Class 5 - Cast	75-B	12	70,000	12	-	-
Copper	- Cast	30-B	70	25,000	55	200	390
	-Wrought	40-B	100	40,000	35	200	390
"G"	Class 20 (Grp. C)	70-B	75	-	13	-	-
#340P	Class 20 (Grp. C)	70-B	85	-	-	-	-

RWMA GROUP A - COPPER BASE ALLOYS GENERAL INFORMATION

TIPALOY #100 - Class 1 - A Cadmium Copper alloy, is superior to pure copper as an electrode material and is recommended because of its high electrical and thermal conductivity. Uses include spot welding aluminum alloys, magnesium alloys, coated materials (terne plate, tin plate, galvanized iron, cadmium plate, brass and bronze). Used as spot welding electrodes, seam weld wheels, seam weld shafts, flash and butt welding dies, and weld fixtures. Not available in cast form.

TIPALOY #130 - Class 2 - A Chrome Copper alloy, specifically recommended for high level production spot and seam welding of clean mild steel, low alloy steel, stainless steel, low conductivity brasses and bronzes, nickel-silver, nickel, nickel alloys, and monel. Suitable for projection welding dies, seam weld shafts and bearings, flash and butt welding dies, and current carrying structural members. Available in cast form for use as gun welder arms, welder platens and secondary circuit structural members. Tipaloy #130 is heat treatable.

TIPALOY Z#139 - Class 2 - A Chrome Zirconium Copper alloy, is used primarily as an electrode material when welding coated materials such as galvanized and galvaneal. Supplied primarily as male and female cap tips.

TIPALOY Z#169 - Class 1 - A Zirconium Copper alloy, designed for use on coated steels where electrode sticking is a problem, such as galvanized and galvaneal. Used as spot welding electrodes and seam weld wheels. Supplied primarily as male and female cap tips.

TIPALOY #200 - Class 3 - A Beryllium Copper alloy, and **TIPALOY #240** - A Silicon Nickel Chrome alloy, are recommended for use as seam weld wheels, projection welding dies, flash and butt welding dies, current carrying shafts and bushings, high stressed structural current carrying members, electrode holders, and high pressure electrodes where the welded material has a high electrical resistance. Available in cast, forged, and extruded forms. Heat treat processes differ from alloy #200 to #240, and both are generally supplied in the full heat treated condition to the customer.

TIPALOY "G" Class 20 - A Aluminum Dispersion Hardened Copper, Usually used in applications where metallic coated metals, such as galvanized steel or turn plate, requires high energy and non sticking characteristics. Supplied primarily in male & female cap tips as well as seam welding wheels.

TIPALOY T-4 - Class 4 - An extremely high hardness and high tensile strength alloy with low electrical conductivity. Generally used as an electrode material for welding inserts and die facings where pressures are extremely high and wear is severe, but heating is not excessive. Available in cast and wrought forms, and is generally supplied in the annealed condition, in which it can be more readily machined, and may be subsequently heat treated to maximum hardness.

TIPALOY T-5 - Class 5 - An Aluminum Copper alloy used for certain flash and butt welding operations, back-up applications, and current carrying structural members of welding equipment. Available only in cast form and is not heat treatable.

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