

## TECHNICAL DATA SHEET

### STAR642IGP + Pd52% - 750 ‰

Universal master alloy for the production of white palladium based 750 ‰ gold jewellery obtained by investment casting and mechanical working. The elements contained in this product ensure a high surface quality in investment casting, while in mechanical working a high deformation capability thanks the small grain structure, making it suitable for the production of hand and machine made hollow and solid chains, deep drawn items and tube. The use is suggested with the addition of 30 - 52 % of pure palladium to the master alloy.

TAB.1 - Mechanical data

Hardness as cast	144	HV
Hardness hardened	225	HV
Tensile strength	470	MPa
Yield strength	252	MPa
Elongation	29	%

TAB.2 - Physical data

Color	Standard white		
Colour Coordinates	L*:	79.94	
	a*:	2.35	
	b*:	8.25	
Density	15.89	g/cm <sup>3</sup>	
Melting Range	Solidus:	962	°C
	Liquidus:	1104	°C

TAB.3 - Heat treatments

Solution annealing	820 20	°C min
Recrystallization Annealing	820 20	°C min
Hardening	500 180	°C min

TAB.4 - Investment casting parameters

Premelting temperature		1204	°C
Casting Temperature	Min:	1154	°C
	Max:	1254	°C
Water investment powder ratio		36-38	%
Flask temperature	Min:	450	°C
	Max:	700	°C
Quenching time without stones in place	Min:	5	min
	Max:	20	min
Quenching time with stones in place		15	min in boiling water
Pickling	H2SO4:	20	%
	Temp:	50	°C
	Time:	50	min

TAB.5 - Mechanical working parameters

Premelting temperature		1204	°C
Casting Temperature	Min:	1154	°C
	Max:	1254	°C
First thickness reduction	Lamination:	50	%
	Drawing:	25	%
Following thickness reductions	Lamination:	75	%
	Drawing:	50	%
Pickling after annealing	H2SO4:	20	%
	Temp:	50	°C
	Time:	5	min