

TECHNICAL DATA SHEET

WHITECH3040C - 750 ‰

Master alloy for the production of white nickel free 750 ‰ gold jewellery obtained by investment casting. This product, thanks to its complex composition made of numerous different special elements, ensures an extreme quality, an enhanced fluidity and a long lasting of this features also after many reuses of scraps, making it the most advanced nichel free master alloy for white gold.

TAB.1 - Mechanical data

Hardness as cast	200	HV
Hardness hardened	n.d.	
Tensile strength	n.d.	
Yield strength	n.d.	
Elongation	n.d.	

TAB.2 - Physical data

Color	Premium white		
Colour Coordinates	L*:	80.12	
	a*:	2.06	
	b*:	6.41	
Density	15.74	g/cm ³	
Melting Range	Solidus:	950	°C
	Liquidus:	1050	°C

TAB.3 - Heat treatments

Solution annealing	630 30	°C min
Recrystallization Annealing	630 30	°C min
Hardening	n.d.	

TAB.4 - Investment casting parameters

Premelting temperature			see paragraph below
Casting Temperature	Min:	1100	°C
	Max:	1200	°C
Water investment powder ratio		36-38	%
Flask temperature	Min:	450	°C
	Max:	700	°C
Quenching time without stones in place	Min:	10	min
	Max:	20	min
Quenching time with stones in place		15	min in boiling water
Pickling			see paragraph below

PREMELTING (MANDATORY)

A premelting of the master alloy and fine gold must be done to homogenize the alloy in the best way. For a proper premelting, first put the fine gold in the crucible and then switch on the power until 1100°C (make sure that the metal becomes liquid). After this, put the master alloy inside the liquid gold and, with a stirrer, push down the master alloy inside the gold, then decrease the temperature to 950-1000°C and pour into an ingot or do a granulation.

QUENCHING

It's recommended to keep the flask inside the casting machine as long as possible before quenching, to limit the oxidation of the alloy by reducing its exposure in the air.

PICKLING

For a proper pickling, use a concentrated solution of sulfuric acid at 60 - 65°C for 20 mins or a 50 % solution of hydrochloric acid at 60 - 65° C for 10 min.