

GENERAL INFORMATION
General information

Typology	Master alloy for gold
Color	White, nickel-free
Color shade	Premium white
Production process	All-purpose
Grain refinement level	High
Deoxidation level	Minimum

Commercial composition (%)

PD	52.8
ZN	2.0
CU	45.2

Melting Temperatures

Solidus [°C]	1020.0
Liquidus [°C]	1080.0
Melting range [°C]	60.0

FULL CHARACTERIZATION DATA
Color coordinates

L *	a*	b*	c*	Yellow Index
79.6	2.4	7.0	7.3	17.1

Mechanical characteristics

As cast hardness [HV 0.2]	160.0
Hardness after 70% area red. [HV 0.2]	285.0
Hardness after annealing [HV 0.2]	180.0
Single step age-hardening hardness [HV 0.2]	210.0
Tensile strength (Rm) [Mpa]	520.0
Yield strength (Rp0.2) [MPa]	332.0
Elongation at rupture (A) [%]	28.0

Physical characteristics

Density [g/cm ³]	15.7
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General characteristics

As cast grain size [μm]	250.0
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Product applications

Continuous casting
 Ingot casting
 Casting in closed systems
 Casting without stones
 CNC and lathe production
 Sheet production
 Stamping production
 Age hardening

NF511 750‰

NICKEL-FREE ALL-PURPOSE MASTER ALLOY FOR 750‰ (18 KT) WHITE GOLD

CASTING PROCESSING PARAMETERS

POURING TEMPERATURES	Flask from [°C]	Flask to [°C]	Metal from [°C]	Metal to [°C]
< 0.5 mm	700	730	1190	1220
0.5 - 1.2 mm	660	700	1170	1190
> 1.2 mm	600	660	1150	1170

Trees without stones

Let the flask cool down for 10-15 minutes, then quench it in water.

Stone-in-place casting trees

Let the flask cool down for 30-45 minutes, then quench it in water.

Pickling

Dip in RADIAL solution (50 g/l concentration at 60°C) for 5-10 minutes, or in sulphuric acid (10% concentration at 50°C) for 10 minutes.

MECHANICAL WORKING PARAMETERS
Reductions

Wire - diameter (%)	45.0
Sheet - area or thickness (%)	70.0

POURING TEMPERATURES	Countinous from [°C]	Countinous to [°C]	Ingot to [°C]	Ingot from [°C]
Temperatures	1180	1260	1160	1200

MECHANICAL WORKING ANNEALING	Temp. from [°C]	Temp. to [°C]	Time [min]
< 1 mm	730	770	30
1 - 5 mm	730	770	35
> 5 mm	730	770	40

Mechanical working quenching

Quench directly in water.

AGE HARDENING PROCESSING PARAMETERS

SINGLE STEP	Temperature [°C]	Time [min]	Quenching
AGE HARDENING	450.0	90.0	In air or in furnace