

TECHNICAL DATASHEET AND GUIDELINE

NF510
Title 18 Kt

Nickel-free all-purpose master alloy for 750‰ (18 Kt) white gold

GENERAL INFORMATION

Typology	Master alloy for gold
Production process	Universal
Color	White nickel-free
Color shade	Standard white
Density [g/cm ³]	15.7
Melting temperatures	
Solidus [°C]	975
Liquidus [°C]	1050

Commercial composition	
Ag (%)	8
Cu (%)	51
Pd (%)	41



FULL CHARACTERIZATION DATA

Color coordinates	
L*	81.5
a*	3.4
b*	8.4
c*	9
Yellow index	20.5

Mechanical characteristics	
Tensile strength (Rm) [MPa]	588
Yield strength (Rp0.2) [MPa]	333
Elongation at rupture (A) [%]	32
As cast hardness [HV 0.2]	175
Hardness after 70% area red. [HV 0.2]	285
Hardness after annealing [HV 0.2]	175
Single step age-hardening hardness [HV 0.2]	190

PRODUCT APPLICATIONS

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

RELATED PRODUCTS

OB315A	Softer, without deoxidizers
LSG406B	Soft solder for 750‰ yellow gold
LSG409V	Medium solder for 750‰ yellow gold

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CASTING PROCESSING PARAMETERS

Casting temperatures	Metal - from [°C]	Metal - to [°C]	Flask - from [°C]	Flask - to [°C]
Thin (below 0.5 mm)	1150	1170	700	730
Medium (from 0.5 to 1.2 mm)	1130	1150	660	700
Thick (above 1.2 mm)	1110	1130	600	660

Stone-in-place casting trees

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

Trees without stones

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

Pickling

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

MECHANICAL WORKING PARAMETERS

Casting temperature	Metal - from [°C]	Metal - to [°C]	Recommended reductions	
Ingot making	1130	1170	Sheet - area or thickness [%]	60
Continuous casting	1150	1230	Wire - diameter [%]	40

Mechanical working recommended annealing	Temperature - from [°C]	Temperature - to [°C]	Time [min]
> 5 mm	730	770	40
1 - 5 mm	730	770	35
< 1 mm	730	770	30

AGE HARDENING PROCESSING PARAMETERS

Single step age-hardening treatment	Temperature [°C]	Time [min]	Quenching
Age-hardening	450	90	