

TECHNICAL DATASHEET AND GUIDELINE

**NF505**  
Title 14 Kt

**Nickel-free all-purpose master alloy for 375-585-750‰ (9-14-18 Kt) white gold**

GENERAL INFORMATION

Typology	<b>Master alloy for gold</b>
Production process	<b>Universal</b>
Color	<b>White nickel-free</b>
Color shade	<b>Off-white</b>
Density [g/cm <sup>3</sup> ]	<b>14</b>
<b>Melting temperatures</b>	
Solidus [°C]	<b>850</b>
Liquidus [°C]	<b>905</b>

<b>Commercial composition</b>	
Ag (%)	<b>20</b>
Cu (%)	<b>56</b>
Pd (%)	<b>14</b>
Zn (%)	<b>10</b>



FULL CHARACTERIZATION DATA

<b>Color coordinates</b>	
L*	<b>85.4</b>
a*	<b>5.2</b>
b*	<b>12.5</b>
c*	<b>13.6</b>
Yellow index	<b>29</b>

<b>Mechanical characteristics</b>	
As cast hardness [HV 0.2]	<b>185</b>

PRODUCT APPLICATIONS

<b>Casting in open systems</b>
<b>Casting in closed systems</b>
<b>Casting without stones</b>
<b>Stone-in-place casting</b>

RELATED PRODUCTS

NF504	Version without deoxidizers
NF509	Better color, higher Pd content
LSG406B	Soft solder for 750‰ yellow gold
LSG409D	Medium solder for 585‰ 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)	1020	1050	660	720
Medium (from 0.5 to 1.2 mm)	1000	1020	580	650
Thick (above 1.2 mm)	980	1000	460	600

### Stone-in-place casting trees

Let the flask cool down for 45-60 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]
Ingot making	985	1025
Continuous casting	1005	1085

Mechanical working recommended annealing	Temperature - from [°C]	Temperature - to [°C]	Time [min]
1 - 5 mm	680	720	30

## AGE HARDENING PROCESSING PARAMETERS

Single step age-hardening treatment	Temperature [°C]	Time [min]	Quenching
Age-hardening	325	90	