

TECHNICAL DATASHEET AND GUIDELINE

**ALPCAST3**  
Title

Alpaca for casting

**GENERAL INFORMATION**

Typology	<b>Alpaca</b>
Production process	<b>Casting</b>
Color	<b>White</b>
Color shade	<b>Off-white</b>
Density (g/cm <sup>3</sup> )	<b>8.2</b>
<b>Melting temperatures</b>	
Solidus (°C)	<b>940</b>
Liquidus (°C)	<b>1005</b>

Commercial composition	
Cu (%)	<b>70</b>
Ni (%)	<b>9</b>
Sn (%)	<b>6</b>
Zn (%)	<b>15</b>



**FULL CHARACTERIZATION DATA**

As cast grain size [µm]	<b>840</b>
<b>Color coordinates</b>	
L*	<b>85.7</b>
a*	<b>-0.4</b>
b*	<b>5.9</b>
c*	<b>6</b>
Y*	<b>12.5</b>

Mechanical characteristics	
As cast hardness [HV 0.2]	<b>125</b>
Hardness after annealing [HV 0.2]	<b>125</b>
Single step age-hardening hardness [HV 0.2]	<b>150</b>

**PRODUCT APPLICATIONS**

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

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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)	1090	1110	660	720
Medium (from 0.5 to 1.2 mm)	1070	1090	580	650
Thick (above 1.2 mm)	1050	1070	460	600

**Trees without stones**

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

**Stone-in-place casting trees**

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

**Pickling**

Dip in RADIAL solution (50 g/l conc. at 60°C for 2 min.), or in sulphuric acid (10% conc. at 50°C for 5 min.)

**AGE HARDENING PROCESSING PARAMETERS**

Age-hardening using solubilization treatment	Temperature (°C)	Time (min)	Quenching
Age-hardening	350	90	Air or in furnace