C183N Master alloy for casting of 750‰ (18 Kt) yellow gold

Technical datasheet and guideline for 18 Kt

GENERAL INFORMATION AND RECOMMENDED APPLICATIONS

Typology	**Master alloy for gold**
Production process	**Casting**
Color	**Yellow**

Color	**Rich yellow**
Density [g/cm³]	**15**
Melting temperatures	**Solidus [°C] 864** **Liquidus [°C] 900**
As cast hardness [HV 0.2]	**135**

Product applications

Casting in open systems
Casting in closed systems
Casting without stones
Stone-in-place casting
Age-hardening

FULL CHARACTERIZATION DATA

General characteristics

As cast grain size [µm]	400

Color coordinates

L*	86.2
a*	4.7
b*	23.1
c*	23.6
Color shade	Rich yellow

Mechanical characteristics

Tensile strength (Rm) [MPa]	380
Yield strength (Rp0.2) [MPa]	290
Elongation at rupture (A) [%]	40
As cast hardness [HV 0.2]	135
Hardness after 70% area red. [HV 0.2]	270
Hardness after annealing [HV 0.2]	154
Hardness after age-hardening [HV 0.2]	245

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CASTING PROCESSING PARAMETERS

Pre-mixing temperature [°C]	**1020**

Casting temperatures	Metal - from [°C]	Metal - to [°C]	Flask - from [°C]	Flask - to [°C]
Thin (below 0.5 mm)	**1000**	**1030**	**660**	**720**
Medium (from 0.5 to 1.2 mm)	**980**	**1000**	**580**	**650**
Thick (above 1.2 mm)	**960**	**980**	**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.)

MECHANICAL WORKING PARAMETERS

Pre-mixing temperature [°C]	1020

Casting temperature	Metal - from [°C]	Metal - to [°C]
Ingot making		
Continuous casting		

AGE HARDENING PROCESSING PARAMETERS

Single step age-hardening treatment	Temperature [°C]	Time [min]	Quenching
Age-hardening	**275**	**90**	**Air or in furnace**

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