LEGOR
Extraordinary matter

MASTER ALLOY
SILVER LINE

TECHNICAL SHEET

ARG-940CAST 940‰

READY-TO-USE 940‰ ARGENTIUM SILVER ALLOY FOR CASTING IN DROPS

GENERAL INFORMATION

General information	
Typology	Ready to use silver
Color	Silver
Production process	Casting
Grain refinement level	High
Deoxidation level	Medium

Commercial composition (%)	
AG	94.70
CU	4.30
GE	1.00

Melting Temperatures	
Solidus [°C]	870
Liquidus [°C]	900
Melting range [°C]	30

FULL CHARACTERIZATION DATA

Color coordinates

L *	a*	b*	c*	Yellow Index
95.4	-0.3	3.9	3.9	7.2

Mechanical characteristics	
As cast hardness [HV 0.2]	65.0
Hardness after 70% area red. [HV 0.2]	170.0
Hardness after annealing [HV 0.2]	65.0
Double step age-hardening hardness [HV 0.2]	140.0
Single step age-hardening hardness [HV 0.2]	120.0
Tensile strength (Rm) [Mpa]	250.0
Yield strength (Rp0.2) [MPa]	91.0
Elongation at rupture (A) [%]	30.0

Physical characteristics	
As cast grain size [µm]	185.0
Density [g/cm³]	10.3

Product applications

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

02/02/2024

LEGOR GROUP S.P.A. - Via del Lavoro, 1 - 36050 (VI) - Italy - Tel. +39 0444 467911 - Fax +39 0444 660677 - info@legor.com - www.legor.com

ARG-940CAST 940‰

READY-TO-USE 940‰ ARGENTIUM SILVER ALLOY FOR CASTING IN DROPS

CASTING PROCESSING PARAMETERS

Pre-melting temperature

Temperature [°C]

POURING TEMPERATURES	Flask from [°C]	Flask to [°C]	Metal from [°C]	Metal to [°C]
< 0.5 mm	600	640	1010	1040
0.5 - 1.2 mm	560	600	990	1010
> 1.2 mm	540	580	960	990

Trees without stones

Let the flask cool down in the chamber for 1 minute after pouring. Take the flask out of the machine without shaking it, let it cool for 20 minutes in air, then quench 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 conc. at 60°C) for 2 minutes, or in sulphuric acid (10% concentration at 50°C) for 5 minutes.

AGE HARDENING PROCESSING PARAMETERS

SINGLE STEP	Temperature [°C]	Time [min]	Quenching
AGE HARDENING	300	90	In air or in furnace

DOUBLE STEP	Temperature [°C]	Time [min]	Quenching
Age-hardening	300	60	In air or in furnace
Homogenization	700	40	In water, immediate

LEGOR GROUP S.P.A. - Via del Lavoro, 1 - 36050 (VI) - Italy - Tel. +39 0444 467911 - Fax +39 0444 660677 - info@legor.com - www.legor.com

LEGOR
Extraordinary matter

MASTER ALLOY
SILVER LINE

TECHNICAL SHEET

ARG-940CAST 940‰

READY-TO-USE 940‰ ARGENTIUM SILVER ALLOY FOR CASTING IN DROPS

Pre-mixing

For the production of semi-finished products from continuous casting (bar, wire, tube) where a plastic deformation is required, it is advisable to proceed with the pre-melting of the material. This will allow for a good grip between the starting bar and the alloy to be drawn. For lost wax casting process, the pre-melting is not required.

Material re-usage

The maximum amount of reused metal allowed is of 50% in weight. The material should be clean, deoxidized and without inclusions. It's anyway advisable to not exceed 30% re-used metal.

Process temperatures

Strictly respect process temperatures indicated in the technical chart. Preferably use melting systems that provide an easy measurement of the metal temperature.

Flask temperatures and cooling times

For lost wax casting processes, do not exceed flask temperature of 680°C. Use high-quality investment in order to decrease the reactivity between investment and alloy. Argentium alloys retain their heat for longer than standard Sterling silver - allowances for a slower cool must be made when quenching.

Surface porosity

An object free from porosity is less reactive towards tarnishing in comparison with a porous object, since it has no cavities that could collect dirt or atmospheric moisture and serve as trigger points for the reaction of tarnishing.

Parts assemblies

Mechanical assemblies of items constituted by the same alloy are to be preferred.

Soldering

Usage of solders specific for Argentium alloys should be preferred. Where applicable, techniques which ensure good repeatability of the process, such as laser welding with or without external material (always consisting of the same alloy) should be used.

Age-hardening

Follow the instructions given above in the section "Age hardening processing parameters".

Finishing and cleaning

Surface treatments after finishing: to protect the products during storage, it is mandatory to carry out a passivation with the product T-PRO or with GA152AG, to passivate the surface. T-PRO and AG152AG (see the product documentation) create an invisible barrier on the surface of the workpiece which, although not resistant to wear stresses, allows to block the start of any kind of chemical reaction on the surface of the piece for the whole storage time, and to start the effective life time of the item with the first use by the final customer.

Post treatments

Surface treatments after finishing: to protect the products during storage, it is mandatory to carry out a passivation with the product T-PRO or with GA152AG, to passivate the surface. T-PRO and AG152AG (see the product documentation) create an invisible barrier on the surface of the workpiece which, although not resistant to wear stresses, allows to block the start of any kind of chemical reaction on the surface of the piece for the whole storage time, and to start the effective life time of the item with the first use by the final customer.

02/02/2024

LEGOR GROUP S.P.A. - Via del Lavoro, 1 - 36050 (VI) - Italy - Tel. +39 0444 467911 - Fax +39 0444 660677 - info@legor.com - www.legor.com