

# THE ARGEN CORPORATION

## Alloy Specification Sheet

### ARGENCO 10S

Color: PALE YELLOW    ISO Type: 3

ADA Classification: NOBLE (N)

PGM

#### Metal Content %

Au	Pd	Ag	Ir	In	Zn
10	24	45.9	x	18	2

'x' denotes a content of less than one percent

#### Thermal Properties

Melting Range	Casting Temperature	Density g/cm <sup>3</sup>
1690-1780 °F	1960 °F	10.7
920-970 °C	1070 °C	

#### Mechanical Properties

Vickers Hardness (VHN)		Yield Strength N/mm <sup>2</sup> (0.2% Offset)		Modulus of Elasticity (GPa)	Elongation %	
Soft	Hard	Soft	Hard		Soft	Hard
175	---	332	---	85	8	---

#### PROCESS

#### INSTRUCTIONS FOR USE

#### Modeling

Maintain a minimum wax thickness of 0.3 to 0.4 mm.

#### Spruing (Single Crowns)

Use direct sprues, 8-10 gauge, (3.3-2.6 mm diameter) and 1/2 in. (12 mm) long with adequate reservoirs. There should be no more than 1/4 in. (6 mm) of investment from the top of the pattern to the top of the investment.

#### Spruing (Multi-Units & Bridges)

Use a 6 gauge (4.1 mm diameter) runner bar, connecting the units to the bar with 10 gauge (2.6 mm diameter) sprues 1/8 in. (3 mm) long and joining the bar to the sprue base with 8 gauge (3.3 mm diameter) and 1/2 in. (12 mm) long sprues coming from a domed central entry point. There should be no more than 1/4 in. (6 mm) of investment from the top of the pattern to the top of the investment.

#### Alloy Quantity

10.7g/cm<sup>3</sup> \* (Wax Weight) = Required Alloy Quantity.

<b>Investing</b>	Use debubbler and blow off any excess before investing. Do not preheat Cristobolite investment above 1290°F/700°C. Recommended Investment: Gypsum or Phosphate Bonded Follow the manufacturer's instructions.
<b>Burnout</b>	After adequate set-up time, place the ring(s) in a room temperature oven and raise the temperature to 650-705 °C / 1200-1300 °F, hold for 1 hour plus 10 minutes for each additional ring. If you are using a rapid fire investment, follow the manufacturer's instructions.
<b>Reusing Cast Alloy</b>	Use only clean buttons and at least 35 percent new alloy.
<b>Crucible Type</b>	Graphite
<b>Torch Casting</b>	Crown & Bridge Alloys can be cast with compressed air and natural gas using a borax flux for optimum results.
<b>Induction or Electrical Casting</b>	For gold-based alloys, use a graphite lined crucible and a casting temperature of at least 212°F/100°C over the liquidus temperature. Every casting machine is different. The casting temperature may require adjustment based upon the alloy and the amount of metal being cast.
<b>Cooling</b>	Either allow the casting ring to cool to room temperature for self hardening, or quench the casting ring in water after the alloy glows dull red to soften.
<b>Divesting and Cleaning</b>	Divest and sandblast with 50 micron aluminum oxide, be careful of margins.
<b>Pickling</b>	Any gold pickling solution may be used for the gold-based alloys.
<b>Soldering</b>	Check that the solder joints are sufficiently large (6-9 mm <sup>2</sup> ). Soldering gap approximately 0.05-0.2 mm. The soldering surfaces should be parallel and pre-polished. Allow the soldered case to cool slowly after soldering.
<b>Recommended Solder</b>	Use: LO / 500
<b>Hardening</b>	No hardening condition
<b>Softening</b>	Soft condition is As Cast
<b>Laser Wire</b>	

**Polishing**

Polish with any conventional polishing brushes and felt wheels using Tripoli ,rouge and tin oxide. Soft, medium bristles, chamois, or rag wheels are acceptable.

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