THE ARGEN CORPORATION

Alloy Specification Sheet

ARGENCO 58

Color: YELLOW **Type:** 3/4 **ADA Classification:** HIGH NOBLE (HN) **PGM:** 61.3%

Metal Content %

Au	Pd	Ag	Ir	In	Cu	Zn
58	3.25	27	x	x	10.49	1

'x' denotes a content of less than one percent

Thermal Properties

Melting Range	Casting Temperature	Density g/cm^3
1675-1770 ºF	1905 ºF	13.9
915-965 ºC	1040 ºC	

Mechanical Properties

Vickers Hardness (VHN)		Yield Strength N/mm^2 (0.2% Offset)		Modulus of Elasticity (GPa)	Elongation %	
Soft	Hard	Soft	Hard	83	Soft	Hard
145	210	290	550		28	10

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 1/2in. (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	13.9g/cm^3 * (Wax Weight) = Required Alloy Quantity.

Investing	Use debubblizer 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.
Burnout	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.
Reusing Cast Alloy	Use only clean buttons and at least 35 percent new alloy.
Crucible Type	Graphite / Ceramic
Torch Casting	Crown & Bridge Alloys can be cast with compressed air and natural gas using a borax flux for optimum results.
Induction or Electrical Casting	For gold-based alloys, use a graphite lined crucible and a casting temperature of at least 212ºF/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.
Cooling	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.
Divesting and Cleaning	Divest and sandblast with 50 micron aluminum oxide, be careful of margins.
Pickling	Any gold pickling solution may be used for the gold-based alloys.
Soldering	Check that the solder joints are sufficiently large (6-9 mm²). 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.
Recommended Solder	Use: LO,585, 720
Hardening	Heat Treat for 15 min. at 350°C / 660 ºF
Softening	1290°F/700°C. 15 min hold, Water Quench
Laser Wire	LWO75
Polishing	Polish with any convential polishing brushes and felt wheels using Tripoli ,rouge and tin oxide. Soft, medium bristles, chamois, or rag wheels are acceptable.

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