

■ Super 12 ■

COPPER = 79.50% NOMINAL
ALUMINUM = 8.00% NOMINAL
NICKEL = 4.50% NOMINAL
IRON = 3.00% NOMINAL
ZINC = 2.50% NOMINAL
MANGANESE = 2.50% NOMINAL

WT OZ.
LBS.
KG.

PHYSICAL PROPERTIES OF SUPER 12

Melting Range = 1855-1955°F (1012-1068°C)

Casting Temperature = See Other Side

Density = 7.8 g/cm³

Vickers Hardness - 140

Yield Strength - 30,000 psi (206 MPa)

Elongation = 29%

CE 0086

INDICATIONS FOR USE:



Super 12 is a Copper - Aluminum based alloy acceptable for use in fabrication of dental prosthetics and reconstructions.

Rx Only

TECHNICAL INSTRUCTIONS

SPRUEING: SINGLE UNITS: Use a direct sprue with a reservoir and connect the sprue to the thickest area of the wax pattern. The connection point between the wax pattern and the sprue should be tapered.

BRIDGE WORK: Use an indirect (runner bar) spruing technique. The connection points between the wax pattern and the sprues should be tapered.

INVESTING: Use a high heat phosphate-bonded investment.

BURNOUT: The investment heat-soak temperature range for Super 12 is 1600-1700°F (871-927°C). Consult the "Heat-Soak Time Table" for the minimum heat-soak period requirement.

HEAT-SOAK TIME TABLE

<u>Number of Units/Rings</u>	<u>Heat-Soak Period</u>
Small Single Unit Ring	1 hr. 10 min.
Two/Three Unit Ring	1 hr. 30 min.
Four/Five Unit Ring	1 hr. 50 min.
Two Rings in the Oven	add 20 min.
Three Rings in the Oven	add 40 min.
Four Rings in the Oven	add 1 hr.

LOWER RING TEMPERATURE: When the burnout heat-soak period is complete, lower the ring temperature before casting. Consult the "Casting Ring Temperature Chart" Lowering the ring temperature before casting greatly reduces your risk of porosity.

CASTING RING TEMPERATURE CHART

<u>Pattern Description</u>	<u>Casting Ring Temperature</u>	
	<u>Fahrenheit, °F</u>	<u>Celsius, °C</u>
Small Single Unit	1300 - 1400	700 - 760
Large Single Unit	1200 - 1300	650 - 700
Multiple Unit Ring	1100 - 1200	600 - 650
X-Large Single Unit	1000 - 1100	540 - 600
Bridgework	800 - 1000	450 - 540
X-Large Pontic	800 max.	425 max.

TORCH CASTING: Wind casting machine four to five turns. Use a single-orifice tip and oxygen (approx. 20 psi) with natural or propane gas. Adjust flame so that the blue cone is one inch in length. Preheat the crucible and then place the ingots in the crucible. Heat the ingots evenly in a circular motion. Do not use casting flux. When the ingots all slump, then cast the alloy. Do Not Over-Heat! Buttons may be recast when combined with new alloy in a 1:1 ratio.

INDUCTION CASTING: Super 12 performs well with all types of manual and automatic high frequency induction casting machines. The operator must perform a series of trial castings in order to determine the optimum machine settings. Do not use casting flux. The liquidus point of Super 12 is 1955°F (1068°C) and the recommended casting temperature is 2100°F (1148°C). Buttons may be recast when combined with new alloy in a 1:1 ration.

FINISHING: Remove investment by sandblasting, then finish Super 12 using normal gold C&B finishing procedures.

SOLDERING: Use conventional 615 gold solder, but put the flux on the solder rod only, not on the Super 12 crown.

- DO NOT use ammonia when cleaning
- DO NOT over-heat Super 12 when casting
- DO NOT use carbon containing crucibles
- DO NOT use pickling solutions
- DO NOT use gold plate
- DO NOT use as a removable appliance
- DO NOT sterilize with an autoclave or dry heat.