

18ct NF White Alloy Properties and Process Data

- A general purpose and casting alloy, with high palladium content.
- It has increased hardness and wear resistance over traditional high palladium white alloys.
- It has a lower melting range, making it easier to cast than traditional high palladium white alloys.
- It does not require Rhodium Plating, offering an improved white colour when compared to traditional high palladium white alloys.

Technical Information

Alloy Composition:

- 75.1% Gold,
- 3% Silver + 13.9% Palladium,
- Copper & Zinc

Properties

- Colour White
- Density 16g/cm³
- Melting Range 1100-1170°C
- Annealed Hardness 115 +/- 5 HV
- 10% reduction of area 130 +/- 10 HV
- 20% reduction of area 150 +/- 10 HV
- 40% reduction of area 180 +/- 10 HV

Property Annealed

| | |
|--------------|-----------------------|
| UTS | 420 N/mm ² |
| Elongation | 28% |
| Proof Stress | 210 N/mm ² |

Process Data

Rolling / Drawing:

Cold work to 70% reductions between anneals for rolling and drawing.

Annealing:

Optimum ductility is obtained by annealing at 750°C and quenching. The length of time at temperature is dependant on the size of the work piece.

Investment Casting:

The alloy may be cast into conventional sulphate investments. The casting temperature range for this alloy is 1250 – 1370°C, with smaller items requiring temperatures at the upper end of this range. Flask temperatures should be between 600°C – 650°C.

Machining:

For best results, machine in the cold worked condition.