

## 18ct WNC White Alloy Properties and Process Data

- Multi purpose alloy, with good spring applications
- Nickel containing alloy
- Good white colour
- Lower melting point than other 18ct white alloys
- Inherently hard alloy

This nickel containing alloy complies with the Nickel Directive Part 2 (BS EN 1811) but does not conform to Part 1 (BS EN 1810) which *“prohibits the supply of post assemblies” (containing above 0.05% Ni) “intended to be inserted into a pierced part of the body during epithalisation of the wound caused by such piercing”*

### Technical Information

#### Alloy composition:

- 75.1% Gold,
- +Nickel, Zinc & Copper

#### Properties

- Colour White
- Density 14.8g/cm<sup>3</sup>
- Melting Range 930 – 960°C
- Annealed Hardness 220+/-10HV
- 10% reduction of area 245+/-15HV
- 20% reduction of area 280+/-15HV
- 40% reduction of area 315+/-10HV

#### Property Annealed

Vickers Hardness	220 +/- 10 HV
UTS	695 N/mm <sup>2</sup>
Elongation	26%
Proof Stress	353 N/mm <sup>2</sup>

#### Process Data

Rolling/Drawing/Spinning/Stamping:

May be cold worked up to 70% reductions between anneals.

Annealing:

This alloy may be annealed in a furnace at 650°C. Alternatively, it may be heated to a cherry red colour and allowed to cool. Do not quench from above 450°C (Black Heat) as this may crack the piece.

Casting:

Suitably for casting all forms. Casting temperatures range from 1030-1110°C. Can temperatures should be approx 650°C.

Machining:

For best results, the alloy must be machined in the cold work conditions.

Solders:



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Use available lower melting point hallmarkable gold solders where possible.

**Enamelling information:**

Due to the presence of Zinc, this alloy may not perform satisfactorily when enamelled.

**Chain:**

May be manufactured into all chain types.