

Precious Metal Services Technical Data

18GP White General Purpose Alloy

Data Sheet # PMS1112GP

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Colour – Grey White

Density – 15.9gm/cm

Liquidus - 1115°C

Solidus - 1103°C

Availability

Application - Used in Fabrication, Setting and Casting

Available as - Standard Gauge Wire or Sheet, supplied as Fully Annealed.
 - Strip, Round Wire, Half Round Wire, Square Wire or Oval Wire, supplied Half Hard as Standard.



Annealing Properties

	TEMPERATURE °C	QUENCHING MEDIUM	ATMOSPHERE
KILN	650-700 (30 MINS APPROX)	WATER	NITROGEN OR ARGON
TORCH	DULL CHERRY RED	WATER	A FLUX SHOULD BE USED TO PROTECT AGAINST OXIDATION

* Tip when using: Alloy should be cold worked to a 65-70% reduction before annealing.

Instructions

Clean the parts to be annealed in a degreasing solution then rinse well with clean water and dry.

Do Not quench immediately but allow to air cool until safe to touch, quenching and pickling will now leave a clean and workable piece.

* Note: Annealing times can vary with the mass of the piece and experimentation may be necessary.



It is important when torch annealing to view this process away from direct sunlight and preferably under light conditions that are semi shadow and consistent.

Make sure the piece is heated evenly.



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Re-Works

18GP can be successfully melted and reworked but certain steps should be taken:

- Your mould should be heated and carbonised before casting.
- Your offcuts and scrap should be as clean as possible from contaminants.
- The scrap should be melted in a clean crucible using a neutral flame.
- Melt until surface contaminants start to come together and swirl on the surface of the molten alloy.
- Pour slowly into the ingot mould, keeping the flame angled to keep surface contaminants out and the alloy under the protection of the flame until the cast ingot has solidified.
- Once the ingot has lost its red colour it can be quenched in water.

* Note: It is critical not to super heat the alloy before casting, so as not to induce shrinkage or porosity in the centre of the ingot.

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