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**# 983 NICKEL ULTRA WHITE ALLOYS FOR 18 K WHITE GOLD  
CASTING, SHEET, PLATE & WIRE FABRICATION**

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United # 983 Ultra White Alloy is formulated for **18 K** ultra white gold sheet, plate, and wire fabrication giving a **Ultra White color**. The # 983 Ultra White Alloys **can also be used for continuous casting in 18 karat if desired**. Use higher die temperatures and slower pulling rates.

**KARATING**

The # 983 Ultra White Gold Alloys and fine gold should be melted together in a clean crucible. Put the alloy in the bottom of the crucible and the fine gold on top. Initial melting temperature should be **1050° C – 1060° C / 1922° F - 1940° F**. Drop the temperature somewhat before pouring as listed below. Boric acid flux should be used to keep the metal clean during the melting process. The molten metal should be mixed well with a stirring rod before pouring to assure a good mix. A neutral or reducing cover gas is very helpful in melting white gold alloys.

**POURING TEMP  
FOR INGOTS**

18 K - **1015° C**  
**1860° F**

**POURING**

Metal should be poured into a preheated, vertical graphite, or lightly lubricated iron mold. A steady even pouring motion should be used, slowing down at the end of the pour to prevent shrinkage in the top of the ingot. Use a round rod mold for wire, and a 2 piece L shaped mold for plate and sheet.

**DON'T QUENCH**

Remove the ingot from the mold and allow to air cool – don't quench. Nickel white gold rolling alloys will be much softer if allowed to air cool after pouring and after annealing. Soak ingot in a hot pickle solution to remove surface oxides.

**FABRICATION**

The metal ingot should be cleaned of all adhering oxide or fluxes before rolling. The ingot should be rolled or drawn to a 50% reduction in size before annealing. Too small of a reduction can cause ingot to crack during anneal. After annealing continue the reduction at 50% before annealing again. Clean the ingot after each anneal in hot pickle solution. Keep the rolls, dies, and metal clean to prevent defects in the finished stock.

**ANNEALING**

Annealing temperature **704° C / 1300° F** for **20 minutes**. **DO NOT QUENCH INGOT, allow ingot to air cool**. A boric acid fire coat should be applied before annealing in an open atmosphere oven to protect the metal from heavy oxidation. Clean the ingot in hot pickle solution to remove surface oxidation after annealing. Avoid over-annealing wire, plate or sheet stock as this can cause excessive grain growth creating orange peel surface or poor strength in finished goods.

**REMELTING**

Use a 30% scrap to 70% fresh mix on nickel white gold alloys. White gold alloys have about 1/3 the re-usability of yellow gold alloys.

**TECHNICAL  
ASSISTANCE**

Always available... Call 1-800-999-3463 / 1-800-999-FINE  
E-mail / [doc@unitedpmr.com](mailto:doc@unitedpmr.com) Web-Site / [www.unitedpmr.com](http://www.unitedpmr.com)

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