
974 ULTRA WHITE ALLOY FOR 9 K to 18 K WHITE GOLD SHEET, PLATE, AND WIRE FABRICATION

United # 974 Ultra White Alloy is formulated for **9 K to 18 Karat** Ultra White Gold sheet, plate and wire fabrication giving a **Ultra White color**. The # 974 Ultra White Alloy can also be used for Continuous Casting of bars, rods and wire stocks. This alloy **may also be used for investment casting but re-usability will be limited**.

PRE-ALLOYING

The # 974 Ultra White Alloy and fine gold should be melted together in a clean crucible. Put alloy in the bottom of the crucible and fine gold on top. Initial melting temperature should be **1045° C – 1060° C / 1913° F - 1940° F**. Drop temperature somewhat before pouring as listed below. Boric acid flux may be used to keep the metal clean during the melting process. The metal should be mixed well with a stirring rod before pouring to assure a good mix.

POURING TEMP FOR INGOTS

9 K – 10 K - **1010° C – 1020° C**
1850° F – 1868° F

14 K – 18 K - **1020° C – 1040° C**
1868° F – 1904° 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. After annealing continue the reduction at 50% before annealing again. Clean the ingot after each anneal. Keep rolls, dies and metal clean to prevent defects in the finished stock.

ANNEALING

Annealing temperature **710° C / 1310° F** for **20 minutes**. **Air cool in front of fan or moving air**. A boric acid fire coat should be applied before annealing in open atmosphere ovens to protect the metal from heavy oxidation. Avoid over-annealing wire or plate stock as this can cause excessive grain growth creating orange peel effect on the surface of finished goods.

REMELTING

Use 50% scrap to fresh mix when re-melting to prevent oxide build up in the metal.

TECHNICAL ASSISTANCE

Always available... Call 1-800-999-3463 / 1-800-999-FINE
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