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**# 713-S BRIGHT YELLOW ALLOY FOR 18K YELLOW GOLD SHEET, PLATE, AND WIRE FABRICATION**

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United # 713-S Spring Alloy is formulated for **18 Karat** Bright Yellow Gold sheet, plate and wire fabrication where a “ping tong” effect is necessary. The # 713-S Alloy can also be used for Investment Casting if desired.

**MELTING**

The # 713-S 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 **1070° C / 1958° 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**

18 K - **1020° C**  
**1868° 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.

**QUENCHING**

The metal ingot should be removed from the mold and quenched immediately in pickle solution or water. For heavy ingots a one-minute cool down before quenching prevents quench cracking.

**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 **704° C / 1300° F** for **20 minutes**. **Quench immediately in water or pickle solution.** 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  
E-mail / [doc@unitedpmr.com](mailto:doc@unitedpmr.com) Web-Site / [www.unitedpmr.com](http://www.unitedpmr.com)

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