UNITED® PRECIOUS METAL REFINING, INC.

UNITED GOLD SOLDER ALLOY

Be insured in quality, Be insured in service, Be insured in "United Alloys.

UNITED ALLOY is uniquely different from other available alloys. Combining the highest purity metals available, stringent quality control, special de-oxidizers and grain refiners, produce trouble-free, superior quality castings & rolling (hand-made).

UNITED GOLD SOLDER ALLOYS are formulated to be used in the manufacture of 8K to 22K gold solders. This alloy is making tremendous strides in the development of a high fluidity solder alloys which does not contains cadmium. The solder master alloys are available in yellow, white, pink and in a variety of flows as listed.

# 1SA	8K-18K Yellow Gold Solder (Extra Easy)	# 6SA	8K-18K White Gold Solder (Easy)
# 2SA	8K-18K Yellow Gold Solder (Easy)	# 7SA	8K-18K White Gold Solder (Medium)
# 3SA	8K-18K Yellow Gold Solder (Medium)	# 8SA	8K-18K White Gold Solder (Hard)
# 11SA	8K-18K Pink Gold Solder (Medium)	# 18KYSAE	18K-22K Yellow Gold Solder (All Purpose)
# 12SA	8K-18K Pink Gold Solder (Hard)	# 18KWSAE	18K-22K White Gold Solder (All Purpose)

1.) **MELTING** : The solder 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. The melting temperature for alloying should be 850 - 900 °C. 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.

2.) **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.

3.) **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.

4.) **FABRICATION** : The ingot should be cleaned of all adhering oxide or fluxes before rolling. The ingot should be rolled or drawn to a 10%-15% reduction in thickness with solder made with # 1SA, # 2SA and # 6SA. Reduce to 25%-30% on the medium and hard flow solders before annealing. After annealing, continue the rolling procedure at the given reduction rates. Clean the ingot after each anneals. Keep rolls, dies and metal clean to prevent defects in the finished stock. Ideal thickness for use in soldering is 0.25 mm. (0.010 inches) thick. The sheet can be cut in small pieces suitable for use. We suggest that you mark the pieces with the karat and flow to prevent mix - ups.

5.) **ANNEALING** : Annealing temperature 590 - 620 °C for 20 minutes. Be careful handing the gold solder Ingots when hot, as they can be fragile. Avoid over-annealing wire or plate stock as this can cause excessive grain growth creating orange peel effect on the surface of finished goods.

6.) **Notes** : Melt temperature may vary with type of unit.

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