



UNITED ALLOY # SSA

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

UNITED'S ALLOYS is uniquely different from other available alloys. Combining the highest purity metals available, stringent quality control and special de-oxidizers and grain refiner, produce trouble-free, superior quality castings.

UNITED ALLOY # SSA is silver solder master alloy formulated to be used in the manufacture of sterling silver solders of different flow characteristics ranging from Extra Easy Flow to Extra Hard Flow. This alloy is making tremendous strides in the development of a high fluidity solder alloys which does not contains cadmium.

MIXING :

Flow	Extra Soft	Soft	Medium	Hard	Extra Hard
Fine Silver	45%	65%	70%	75%	80%
Solder Alloy	55%	35%	30%	25%	20%

- 1.) **MELTING** : The solder alloy and fine silver should be melted together in a clean crucible. Put alloy in the bottom of the crucible and fine silver on top. The melting temperature for alloying should be 700 - 850 °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 for extra easy, easy. Reduce to 25%-30% on the medium and hard and extra 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 250 - 400 °C for 20 minutes. Be careful handling the silver 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.) **BRASS SOLDER** : 30% Fine Silver and 70% # SSA for making brass solder.
- 7.) **NOTES** : Melt temperature may vary with type of unit.

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