



**UNITED SOLDER MASTER ALLOYS**  
**FOR 8K TO 18K GOLD SOLDERS**

United solder master alloys are formulated to be used in the manufacture of 8K to 18 K gold solders. The solder master alloys are available in yellow and white, and in a variety of flows as listed.

<b>SOLDER #'S</b>	#1 SA – Extra easy flow yellow	#7 SA – Medium flow white
	#2 SA – Easy flow yellow	#8 SA – Hard flow white
	#3 SA – Medium flow yellow	#11 SA – All purpose pink solder alloy
	#4 SA – Hard flow yellow	#18KWSAE – 18K all purpose white solder alloy
	#5 SA – Easy flow white	#18KYSAE – 18K all purpose yellow solder alloy

Gold solder master alloys are formulated for melting point, not ease of fabrication. The easier flow Alloys will work harder very quickly during the rolling process. Much smaller reduction rates need to be used on #1 SA, #2 SA, and #6 SA when mixed with fine gold. More frequent anneals will be needed on easier flow gold solder alloys.

**MELTING** The United solder master alloys 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 843° - 871° C. / 1550° - 1600° F. Do not overheat the metal. 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 TEMPERATURE FOR INGOTS** 843° - 871° C. / 1550° - 1600° F.

**POURING** Metal should be poured into a preheated, vertical, lightly lubricated, 2 piece, L shaped mold with a 1/8 inch opening. A steady even pouring motion should be used slowing at the end of the pour to prevent shrinkage in the top of the ingot.

**QUENCHING** The metal ingot should be removed from the mold and quenched immediately in pickle solution or water.

**FABRICATION** The metal ingot should be cleaned of all adhering oxide or fluxes before rolling. The ingot should be rolled to a 10% - 15% reduction in thickness with solder made with #1 SA, #2 SA, and #6 SA. 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 anneal. Keep rolls, dies and metal clean to prevent defects in the finished stock. Ideal thickness for use in soldering is .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.

**ANNEALING** Annealing temperature 598° - 621° C / 1100° - 1150° F for 20 minutes. Be careful handling the gold solder ingots when hot, as they can be fragile. Air-cool the ingots for 1 to 1 ½ minutes before quenching in water or pickle solution.

**TECHNICAL ASSISTANCE** Always available...  
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## **Solder Alloys.**

Solder master alloys are formulated to be used in the manufacture of 8K to 18K yellow and white gold solders and are categorized with respect to their melting and flow temperatures. The extra easy and easy flow melts at the lower temperature and is often used for applications where only low heat can be applied such as repairing of a jewelry. Medium solders require slightly higher temperatures than the easy flow solders and Hard flow solders require the highest temperature. It is recommended to use "Hard flow" solders for jobs like sizing a ring. It is important to choose the right kind of solder to match the color of the jewelry metal as close as possible and the flow temperature to achieve the optimum results.

#1 SA – Extra easy flow yellow  
#2 SA – Easy flow yellow  
#3 SA – Medium flow yellow  
#4 SA – Hard flow yellow  
#6 SA – Easy flow white

#7 SA – Medium flow white  
#8 SA – Hard flow white  
#11 SA – All purpose pink solder alloy  
#18KWSAE – 18K all purpose white solder alloy  
#18KYSAE – 18K all purpose yellow solder alloy

Gold solder master alloys are formulated for melting point, not ease of fabrication. The easier flow alloys will work harden very quickly during the rolling process. Much smaller reduction rates need to be used on #1 SA, #2 SA, and #6 SA when mixed with fine gold. More frequent anneals will be needed on easier flow gold solder alloys.

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