

<b>PRODUCT CODE</b>	<b>SSY 18 GLR</b>
<b>FINENESS</b>	<b>750 (18K)</b>
<b>COLOR</b>	<b>YELLOW</b>



#### Brief description

Master alloy for yellow gold, 18K. The formulation of SSY 18 GLR is suitable for production of soldering wires and sheets. The obtained gold alloy is considered a hard solder.

#### Suitable applications

Soldering sheets	Soldering wires
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#### Proprieties

<b>Commercial composition</b>	Ag32 In11 Zn25 Ga0	Alloy's main elements (%)
<b>Density</b>	13	(g/cm <sup>3</sup> )
<b>Melting Range</b>	720-790	Solidus - Liquidus (°C)
<b>Type of solder</b>	HARD	Soft solders have lower melting point and higher wettability, while hard solders have high melting point and low wettability.

#### Mould casting

Put first the alloy in the crucible and cover it with pure gold. Heat the metal 50-100°C more than Liquidus temperature, while protecting the melting with a reducing flame or keeping it in protective atmosphere. Heat the mould at 150 - 200°C and, when the melting temperature is reached, stir the metal and pour it in the mould; after casting, open the mould and cool the metal immediately.

#### Continuous casting

When using a continuous casting machine, it is preferable to pre-melt gold and alloy. Alloyed gold can then be poured in a mould or in water and re-melted in the continuous casting machine, or poured directly in the machine's crucible, heating it until it reaches alloy's liquidus temperature. Always protect the melting using a reducing flame over the molten metal. Machine's speed should be the highest possible.

#### Mechanical work

For the best mechanical results, reduce the section of the wire or plate of 20% before the first annealing process and 40 - 50% before further annealing. Lower reduction could lead to grain growth of the metal structure, higher reductions could lead to brittleness.

#### Annealing

Heat the metal in protective atmosphere at 540°C for 15-30min (depending on the quantity), then cool it in a solution of 90% water and 10% alcohol or in warm water (~40°C).

#### Pickling

Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) at 10% concentration and 50-60°C can be used to remove surface oxide. Rinse with attention the metal after pickling.

#### Scraps reuse

Up to 50% scraps can be added to the melting. Always pay attention to the cleanliness of the scraps, de-greasing and pickling before adding them to new metal is suggested.