

PRODUCT CODE	SSY 18 GLR
FINENESS	750 (18K)
COLOR	YELLOW



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

Commercial composition	Ag32 In11 Zn25 Ga0	Alloy's main elements (%)
Density	13	(g/cm ³)
Melting Range	720-790	Solidus - Liquidus (°C)
Type of solder	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 (H₂SO₄) 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.