

PRODUCT CODE	SY 045 B
FINENESS	585 (14K)
COLOR	YELLOW



Brief description

Master alloy for 14K yellow gold mechanical works. Gold produced with SY 045 B has a green-yellow shade. This alloy is especially suitable for solid chains production, containing only 5% of silver, it is a cheap and easy to use solution. This alloy is not suitable for age hardening.

Suitable applications

Plates&Sheets	Solid Chains	Hollow Chains	Soldered Tubes	CNC Works	Open Casting	Closed Casting	Wax Setting
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Properties

Silver Quantity	5%	Amount of silver <u>contained</u> in the alloy (%)
Density	12.7	(g/cm ³)
Melting Range	850-890	Solidus - Liquidus (°C)
Hardness	110-/	Annealed - Hardened (HV)

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 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 as high as possible.

Mechanical work

For the best mechanical results, reduce the section of the wire or plate at least of 50% before proceeding with the annealing process. The first reduction steps should be strong enough to ensure the metal inner part compacting.

Annealing

Heat the metal in protective atmosphere at 680°C for 10-30min (depending on the quantity), then quickly cool it in a solution of 90% water and 10% alcohol or in warm water (≈40°C).

Hardening

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Casting

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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.