

TECHNICAL DATA SHEET

STAR197HPLUS + Ag4% - 750 ‰

Universal master alloy for the production of red 750 ‰ gold jewellery obtained by investment casting and mechanical working. The elements contained in this product ensure a high surface quality in investment casting, while in mechanical working a high deformation capability thanks the small grain structure, making it suitable for the production of hand and machine made hollow and solid chains, deep drawn items and tube. The use is suggested with the addition of 0 - 10 % of pure silver to the master alloy.

TAB.1 - Mechanical data

| | | |
|-------------------|-----|-----|
| Hardness as cast | 225 | HV |
| Hardness hardened | 330 | HV |
| Tensile strength | 582 | MPa |
| Yield strength | 378 | MPa |
| Elongation | 28 | % |

TAB.2 - Physical data

| | | | |
|--------------------|-----------|-------------------|----|
| Color | Deep red | | |
| Colour Coordinates | L*: | 85.51 | |
| | a*: | 9.49 | |
| | b*: | 16.1 | |
| Density | 14.81 | g/cm ³ | |
| Melting Range | Solidus: | 897 | °C |
| | Liquidus: | 912 | °C |

TAB.3 - Heat treatments

| | | |
|-----------------------------|-----------|-----------|
| Solution annealing | 675 20 | °C min |
| Recrystallization Annealing | 675 20 | °C min |
| Hardening | 275 | °C |
| | 180 | min |

TAB.4 - Investment casting parameters

| | | | |
|--|--------|-------|-------------------------|
| Premelting temperature | | 1012 | °C |
| Casting Temperature | Min: | 962 | °C |
| | Max: | 1062 | °C |
| Water investment powder ratio | | 36-38 | % |
| Flask temperature | Min: | 450 | °C |
| | Max: | 700 | °C |
| Quenching time without stones in place | Min: | 5 | min |
| | Max: | 20 | min |
| Quenching time with stones in place | | 15 | min in boiling water |
| Pickling | H2SO4: | 20 | % |
| | Temp: | 50 | °C |
| | Time: | 50 | min |

TAB.5 - Mechanical working parameters

| | | | |
|--------------------------------|-------------|------|-----|
| Premelting temperature | | 1012 | °C |
| Casting Temperature | Min: | 962 | °C |
| | Max: | 1062 | °C |
| First thickness reduction | Lamination: | 50 | % |
| | Drawing: | 25 | % |
| Following thickness reductions | Lamination: | 75 | % |
| | Drawing: | 50 | % |
| Pickling after annealing | H2SO4: | 20 | % |
| | Temp: | 50 | °C |
| | Time: | 5 | min |