

TECHNICAL DATA SHEET

STAR493 - 930 ‰

Universal master alloy for the production of 917 ‰ gold or 930 ‰ sterling silver 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.

TAB.1 - Mechanical data

| | | |
|-------------------|-----|-----|
| Hardness as cast | 68 | HV |
| Hardness hardened | 135 | HV |
| Tensile strength | 303 | MPa |
| Yield strength | 152 | MPa |
| Elongation | 23 | % |

TAB.2 - Physical data

| | | | |
|--------------------|-----------|-------------------|----|
| Color | Silver | | |
| Colour Coordinates | L*: | 95.31 | |
| | a*: | -0.59 | |
| | b*: | 6.02 | |
| Density | 10.32 | g/cm ³ | |
| Melting Range | Solidus: | 776 | °C |
| | Liquidus: | 895 | °C |

TAB.3 - Heat treatments

| | | |
|-----------------------------|-----------|-----------|
| Solution annealing | 650 30 | °C min |
| Recrystallization Annealing | 650 30 | °C min |
| Hardening | 300 | °C |
| | 180 | min |

TAB.4 - Investment casting parameters

| | | | |
|--|--------|-------|-------------------------|
| Premelting temperature | | 995 | °C |
| Casting Temperature | Min: | 945 | °C |
| | Max: | 1045 | °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: | 10 | 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 | | 995 | °C |
| Casting Temperature | Min: | 945 | °C |
| | Max: | 1045 | °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 |