

**MASTER
ALLOY**
WB140W 750‰

 MASTER ALLOY FOR MECHANICAL WORKING OF 375-585-750‰ (9-14-18 Kt)
 WHITE GOLD

GENERAL INFORMATION
General information

| | |
|--------------------|-----------------------|
| Color | White |
| Color shade | Off-white |
| Production process | Mechanical working |
| Typology | Master alloy for gold |

Melting temperatures

| | |
|--------------------|-------|
| Liquidus [°C] | 915.0 |
| Solidus [°C] | 890.0 |
| Melting range [°C] | 25.0 |

Commercial composition

| | |
|------------|-------|
| Copper (%) | 71,00 |
| Nickel (%) | 14,00 |
| Zinc (%) | 15,00 |



GOLD line

FULL CHARACTERIZATION DATA
Color coordinates

| | |
|--------------|------|
| L* | 84.5 |
| a* | 3.0 |
| b* | 14.9 |
| c* | 15.2 |
| Yellow index | 31.3 |

General characteristics

| | |
|-------------------------|------|
| As cast grain size [µm] | 50.0 |
|-------------------------|------|

Mechanical characteristics

| | |
|---|-------|
| As cast hardness [HV 0.2] | 190.0 |
| Hardness after annealing [HV 0.2] | 190.0 |
| Hardness after 70% area red. [HV 0.2] | 295.0 |
| Single step age-hardening hardness [HV 0.2] | 280.0 |
| Tensile strength (Rm) [Mpa] | 533.0 |
| Yield strength (Rp0.2) [MPa] | 326.0 |
| Elongation at rupture (A) [%] | 35.0 |

Product applications

| |
|--|
| Ingot casting |
| Production of tube from continuous casting |
| Wire production |
| CNC and lathe production |
| Sheet production |
| Continuous casting |
| Age-hardening |

RELATED PRODUCTS LIST
Related Products

| | |
|---------|---|
| CUT10X2 | Copper tube, 10.0 mm diameter, 2.0 mm wall thickness, 2500 mm length, cold worked |
| L1A | Powder for soldering of gold and silver chains |
| LSB442 | Nickel-free master alloy for soldering of 375‰ (9 Kt) white gold |
| LSG406B | Master alloy for soldering of 750‰ (18 Kt) yellow gold |
| LSG409D | Master alloy for soldering of 585‰ (14 Kt) yellow gold |
| LSG409V | Master alloy for soldering of 750‰ (18 Kt) yellow gold |

Alternative Products

| | |
|-----------|---|
| NI1811-04 | Low nickel release master alloy for mechanical working of 750‰ (18 Kt) white gold |
| NI1811-05 | Low nickel release master alloy for mechanical working of 585‰ (14 Kt) white gold |

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CASTING PROCESSING PARAMETERS

Pre-mixing temperature [°C] 1035.0

| CASTING TEMPERATURES | Flask from [°C] | Flask to [°C] | Metal from [°C] | Metal to [°C] |
|----------------------|-----------------|---------------|-----------------|---------------|
| < 0.5 mm | 660.0 | 720.0 | 1025.0 | 1055.0 |
| 0.5 - 1.2 mm | 580.0 | 650.0 | 1005.0 | 1025.0 |
| > 1.2 mm | 460.0 | 600.0 | 985.0 | 1005.0 |

MECHANICAL WORKING PARAMETERS

Pre-mixing temperature [°C] 1035.0

Reductions

| | |
|-------------------------------|------|
| Sheet - area or thickness (%) | 80.0 |
| Wire - diameter (%) | 50.0 |

| POURING TEMPERATURES | Countinous from [°C] | Countinous to [°C] | Ingot from [°C] | Ingot to [°C] |
|----------------------|----------------------|--------------------|-----------------|---------------|
| Temperatures | 1015.0 | 1095.0 | 995.0 | 1035.0 |

| MECHANICAL WORKING ANNEALING | Temp. from [°C] | Temp. to [°C] | Time [min] |
|------------------------------|-----------------|---------------|------------|
| <1 mm | 660.0 | 700.0 | 30.0 |
| 1 - 5 mm | 660.0 | 700.0 | 35.0 |
| >5 mm | 660.0 | 700.0 | 40.0 |

Mechanical working quenching

Let cool in air down to 550°C, then quench in a 50% water/50% alcohol solution or in water

AGE HARDENING PROCESSING PARAMETERS

| SINGLE STEP AGE-HARDENING TREATMENT | Temperature [°C] | Time [min] | Quenching |
|-------------------------------------|------------------|------------|-------------------|
| Age-hardening | 275.0 | 90.0 | Air or in furnace |