



Cobalt-based Alloy

M64BC

CoCr28Mo

SPECIFICATIONS

European standards:

- CoCr28Mo

UNS : R31537

Medical standards:

- ISO: 5832-12

- ASTM: F1537

COMPOSITION

| | |
|-----------------|-------------------------------|
| Carbon..... | <0.14 |
| Chromium..... | 28.00 |
| Molybdenum..... | 6.00 |
| Nickel..... | <1.00 |
| Cobalt..... | Base |
| | With the addition of nitrogen |

TYPICAL MECHANICAL PROPERTIES

- In the solution treated condition (average properties):
 - UTS: 1160 N/mm²
 - 0.2 % Yield strength: 650 N/mm²
 - Elongation (5d): 35 %
- Thermomechanical condition (min. properties):
 - UTS: > 1175 N/mm²
 - 0.2 % Yield strength: > 850 N/mm²
 - Elongation (5d): > 14 %

APPLICATIONS

- Production of permanent surgical implants and any parts implanted in the human body.

CHARACTERISTICS

- M64BC is a cobalt alloy with a high chromium and molybdenum content.
- Its high corrosion resistance makes it particularly suitable for the production of implants in contact with living tissue.
- Its composition has been optimised to enable it to be closed-die forged.
- The high level of mechanical strength that can be attained during this operation results in a steel with excellent fatigue properties while maintaining good toughness. It is therefore possible to produce very thin parts with a high level of safety.

HEAT TREATMENT

- M64BC is generally used in the hot-processed condition in order to attain a high level of mechanical strength. This may be adjusted according to the thermomechanical processing conditions (temperature/amount of deformation) within a wide range of values while retaining very good ductility.
- For some applications requiring maximum softening, solution treatment at 1050/1100°C followed by air or water cooling may be carried out.

PHYSICAL PROPERTIES

- Density: 8.3
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 200°C: 12.1×10^{-6}
- Modulus of elasticity in N/mm²:
 - at 20°C: 225×10^3

FORGING

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