TECHNICAL DATA

# STELLITE™ 6 ALLOY –

## Welding Powder

**STELLITE™ COBALT-BASED ALLOYS** consists of complex carbides in an alloy matrix. They are resistant to wear, galling, and corrosion and retain these properties at high temperatures. Their exceptional wear resistance is due mainly to the unique inherent characteristics of the hard carbide phase dispersed in a CoCr alloy matrix.

**STELLITE™ 6** Cobalt-base welding powder for surface coatings against corrosion, erosion and cavitation under heavy impact and shock load and high temperatures (800–1.000°C depending on the application). As well it is characterised by good thermal shock resistance abilities. It is ideal for sealing surfaces at gas, damp, water and acid armatures, valve seats on combustion engines, hot extruder nozzles and hot log shears.

### CLASSIFICATION

| STANDARDS | |
|---|---|
| AFNOR KC 26 W 04 | RCC-M S8000 Grade 6 edition 2018 |

### NOMINAL CHEMICAL COMPOSITION (MASS%)

| Co | C | Cr | W | Ni | Mo | Mn | Si | Fe | Other elements |
|---|---|---|---|---|---|---|---|---|---|
| Bal. | 0,9 – 1,4 | 26,0 – 32,0 | 3,0 – 6,0 | ≤ 3,0 | ≤ 1,0 | ≤ 1,0 | ≤ 2,0 | ≤ 3,0 | ≤ 0,50 |

### PHYSICAL PROPERTIES (Undiluted weld metal)

| ALLOY | Hardness | Density | Melting Range |
|---|---|---|---|
| Stellite™ 6 | 39 - 47 HRC | ~ 8,44 g/cm³ | ~ 1285 – 1410°C |

### EXAMPLE FOR TENSILE PROPERTIES AT ROOM TEMPERATURE

| PRODUCT FORM | Ultimate Tensile Strength Rm | Yield Stress Rp (0,2%) | Elongation A |
|---|---|---|---|
| Investment Casting, As cast | ~ 790 MPa | ~ 660 MPa | << 1% |

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## WELDING TECHNOLOGY

| Welding Powder | | |
|---|---|---|
| Welding Methods | Plasma Powder Cladding | Laser Powder Cladding |
| Welding Positions | PA | PA, PB |
| Shielding Gas | 100% Ar recommended. | |

## DELIVERY

| Product Dimensions and Properties | | | | |
|---|---|---|---|---|
| Powder Particle Size Range* | 38…125 µm | 53…180 µm | 63…150µm | 63…180µm |
| Fraction | G | WM | W | WE |
| Apparent Density* | On report (3.1 certificate) | | | |
| Hall flow* | On report (3.1 certificate) | | | |
| Packaging | In 5 kg bottles. | | Customer specific. | |

*Sieve analysis according to EN 24497 is performed during manufacturing, results are given in 3.1 certificate with delivery of the powder.

## GENERAL INFORMATION

Stellite™6 Cobalt-base welding powders are manufactured by gas atomization. A batch is produced from the same heat.

Store the powder in closed bottles under room temperature and dry conditions (Temperature ≥ 15℃, relative humidity ≤ 60%). If needed, dry the powder in an oven with open bottles at a temperature of 75℃.
The work piece must be clean before welding.

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