Product Description

PM-BR101P is a gas atomized bronze alloy powder (10% Tin content), specifically developed for laser melting applications. Composition and size distribution have been designed to maximize energetic absorption from laser beam during the PLM process. This is a critical step for traditional bronze powders, which cannot guarantee the same performance due to their higher thermal conductivity and reflectivity.

Powmet Bronze Features

**PROPRIETARY ALLOY COMPOSITION** guarantees higher laser energy absorption.

**EXCELLENT FLOWABILITY** allows reliable behavior on the tray thanks to size distribution and to spherical powder particle geometry.

**HIGH DENSIFICATION** during the laser melting process reduces surface quality issues.

**EXTRAORDINARY SHININESS** after surface finishing.

**PHYSICAL CHEMICAL CHARACTERISTICS**

- **Density**: 8.7 g/cm³
- **Color coordinates**: L*= 85.8; a*=6.2; b*=17.8; c=18.8
- **Solidus**: 935°C
- **Liquidus**: 1000°C

**POWDER CHARACTERISTICS**

- **Size distribution**: 10-30 µm
- **Tap density**: 4.19 g/cm³
- **Flowability**: Excellent

**MECHANICAL CHARACTERISTICS**

- **Hardness PLM State**: 120 HV0.2
- **Hardness after annealing**: 120 HV0.2
- **Hardness after age-hardening**: 120 HV0.2

PM-BR101P microstructure after PLM processing [Optical Microscopy, 200X Magnification]
POWDER HANDLING

Bronze powders with small powder size are sensitive to the uptake of humidity which may lead to powder particle agglomeration and subsequent degradation of powder flow. The powder is therefore packaged under dry protective gas in sealed cans. The cans should be opened and the powder should be processed only in rooms with humidity control.

PLM PROCESS PARAMETERS

Parameters will vary depending especially on laser melting equipment. Please follow the process parameters recommended by your equipment supplier. Specialists from Legor Group are available for consultancy on optimum support structures and process parameters depending on equipment as well as geometry (wall thickness) and design of the items.

POST TREATMENT

No particular stress-relief heat treatment is required before or after removing the parts from the PLM platform. This composition is not age-hardenable.