

BRONZE POWDER

TECHNICAL DATASHEET

BRONZE POWDER PRODUCT OVERVIEW

Bronze powders are copper-tin-based metal powders used primarily for PTFE compounding and industrial applications where enhanced wear resistance, thermal conductivity, and load-bearing capability are required. Bronze powders are typically produced in a nominal 90% copper / 10% tin composition.

TYPICAL APPLICATIONS

- PTFE and fluoropolymer compounding
- Load-bearing components
- Industrial applications

BENEFITS FOR PTFE COMPOUNDING APPLICATIONS

Bronze powders are engineered to reinforce polymers such as PTFE, significantly improving mechanical and thermal performance compared with unfilled PTFE.

- **Improved wear resistance** for longer service life
- **Increased thermal conductivity** for better heat dissipation in dynamic applications
- **Enhanced compressive strength** for handling greater loads
- **Reduced creep** to minimize long-term deformation



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PROPERTIES AND BENEFITS OF BRONZE-FILLED PTFE

PROPERTY	DESCRIPTION	BENEFITS
Coefficient of friction	Still low, but slightly higher than virgin PTFE.	Improved wear resistance and reduced creep allow reliable performance even with the small increase in friction.
Hardness	Higher than pure PTFE.	Enhanced compressive strength for handling greater loads and reducing surface deformation.
Temperature range	-200 °C to +260 °C (similar to PTFE).	Maintains PTFE's broad operational temperature window while improving heat dissipation through increased thermal conductivity.
Chemical resistance	Slightly reduced compared to virgin PTFE (bronze can oxidize in certain environments).	Suitable for many industrial environments while gaining mechanical improvements from bronze reinforcement.

CHEMICAL COMPOSITION %

ELEMENT	COMPOSITION
Copper (Cu)	Balance
Tin (Sn)	9 - 11
Zinc (Zn)	0.5 max
Iron (Fe)	0.25 max
Manganese (Mn)	0.2 max
Carbon (C)	0.1 max
Phosphorus (P)	0.05 max
Sulfur (S)	0.05 max

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