Matexcel

www.material-cell.com

Cu-based Metal Powder

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Copper alloys are dominant materials in the movement of mechanical watches. The fact that they are easy to shape by machining or cold-forming is of great importance. A watchmaker remarked: "you can make a good movement with two materials only—leaded brass and quenchable carbon steel". Nevertheless, in modern manufacturing, highly specialized materials are required.

The various copper alloys are manufactured to finish in a range of tempers from dead soft or fully annealed for maximum formability to heavily worked or age-hardened conditions for maximum strength and hardness, whether the product form is rod, wire, plate, strip, or tube, or a casting.

All copper alloys expand by nearly the same amount as they are heated; this behavior is a consequence of interatomic bonding in the copper alloy matrix structure. Copper alloys are being tailored continually to meet the newer design requirements of composite geometry, color, appearance, and physical property characteristics of coins.

Copper alloy, particularly bronze, is widely applied in the machinery components, such as bearing cage, worm gear, and some slide bearing pads. Copper alloys are also used in bearing, bushing, and electrical contacts. Dispersion of lead in copper alloys imparts good tribological and machinability properties, and this volume, but raises serious health and environmental concerns.

Copper alloys can be classified by their dominant metallurgy contributing to their ultimate strength. The predominant mechanisms of strengthening are work hardening through cold work, solid solution strengthening through alloying, and precipitation hardening through thermal heat treatments. In some cases, the alloys are also strengthened by dispersion of fine phases in the matrix. The alloys are classified by their chemical composition designated by a UNS number (Universal Numbering System) maintained by the CDA (Copper Development Association, New York).

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Matexcel provides multi-functional copper-based alloys, from fine powders to nanostructured forms. Powders can be used in various fields such as aerospace, automotive, biomedical, electronic product welding, 3D printing, and powder metallurgy parts. Welcome to contact us for more information.

Products List

Cat. NO.	Product Name	Components
MET-0052	Copper-based H68 Powder	Cu 67.0-70.0; Fe ≤0.10; Pb ≤0.03; Sb ≤0.01
MET-0053	Copper-based CuSn10 Powder	Sn 9.2-11.5; Zn ≤0.05; P 0.6-1.0; Ni ≤0.1; Al ≤0.01; Pb ≤0.25; Fe ≤0.08; Mn ≤0.05; Cu Bal

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