



NANOCAT® BRASS POWDER DRY

PRODUCT IDENTIFICATION

Identification label: **BRASS POWDER DRY**; chemical name: brass powder; chemical formula: CuZn. This product is available in two modifications: (1) Cu/Zn(60/40) and (2) Cu/Zn(80/20). This powder is produced using electric explosion of metallic wire in argon and then packaged in glass ampoules under inert atmosphere.

CHEMICAL COMPOSITION

Material: copper/zinc - 98%. The balance is copper/zinc oxides and absorbed gases as follows CH₄, CO₂, Ar, N₂. If exposed to air, metal content reduce to 85-90% with the balance of adsorbed gases, copper and zinc oxides and moisture.

PHYSICAL AND CHEMICAL PROPERTIES

Appearance and color: dark brown-grayish powder. Particles are basically spherical. The bulk density is around 3 g/cm³. Mechanical impacts (vibrations) may further density the powder. The powder readily oxidizes when exposed to air. Particles of a powder start to conglomerate at temperature ≥ 100 °C. Brass powder is probable (mean arithmetic) size $\tilde{a}_n = 80$ nm; average-surface size $\tilde{a}_s = 100$ nm; average-mass size $\tilde{a}_m = 120$ nm. BET specific surface area - 6.8 m²/g. The powders readily agglomerate. On being exposed to air, the powder may be ignited by low-calorie flame source (spirit lamp) for 0.5 s. TEM micrographs of powder particles as well as particle size distributions are shown in Fig.1. Brass powder can find its application for materials sciences.

DANGER

Brass powder is classified as a flammable powder, which burns with open fire. Brass powder may cause both general toxic and irritation effects. Maximum allowable day concentration is 0.22 mg/m³. Explosion-safe.

HEALTH HAZARD

BRASS POWDER DRY is a nuisance dust that may cause elevated body temperature, vertigo, and weakness when inhaled as well as eye cornea irritation if getting into the eye.

SAFE HANDLING

Use health protection measures commonly used in working with a nuisance dust. Wear respirators. Keep off open fire.

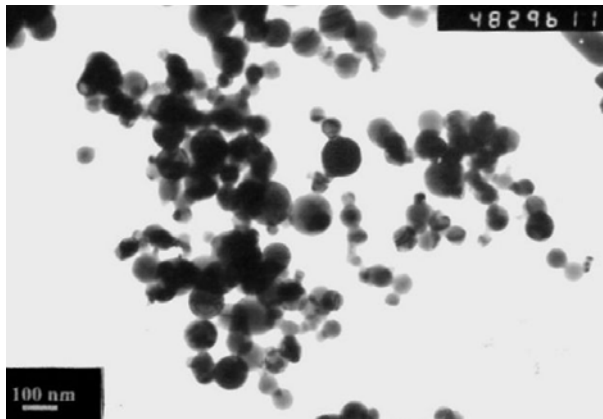


Fig.1 TEM micrographs of brass powder particles.

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