



NANOCAT® TUNGSTEN POWDER DRY

PRODUCT IDENTIFICATION

Identification label: **TUNGSTEN POWDER DRY**; chemical name: tungsten powder dry; chemical formula: W. This powder is produced using electric explosion of metallic wire in air and then packaged in glass ampoules in argon atmosphere.

CHEMICAL COMPOSITION

Material: tungsten – not less 97%, tungsten oxide – not more 2% wt. The balance is absorbed gases.

PHYSICAL AND CHEMICAL PROPERTIES

Appearance and color: black powder. Particles are spherical and readily form agglomerates – Fig. 1. The bulk density is 15 g/cm³. Melting point - 3200°C. This powder ignites when exposed to open fire in air. Burning rate – 1.33 mm/s. BET specific surface area is 1.7 to 2.4 m²/g. Characteristic particle sizes obtained from particle size distribution function (Fig.2) are as follows: surface area mean size $\tilde{a}_s = 740$ nm; probabilistic (arithmetic mean) particle size $\tilde{a}_n = 210$ nm; mass mean size - $\tilde{a}_m = 2390$. Tungsten powder can be used in materials sciences and electronics.

DANGER

Combustible metal powder, which burns giving open fire. Tungsten powder may be ignited by low-calorie energy source if exposed for more than 30 s. This material also has irritating effect on mucous coats. Maximum allowable day acute action concentration established on test animals for single inhalation is 0.01 mg/m³, minimal acute action concentration is 0.5 mg/m³. Explosion-safe.

SAFE HANDLING

Use health protection means as those used for handling readily flammable substances. Wear respirators.

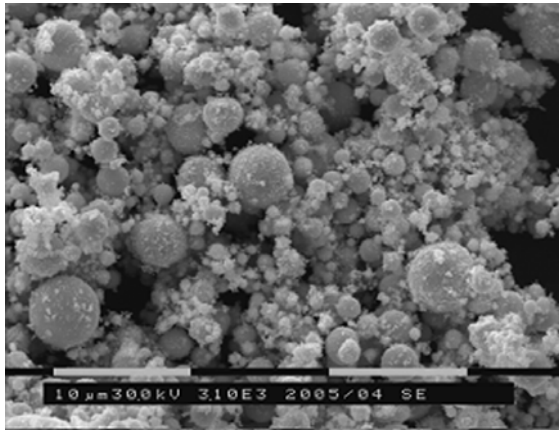


Fig.1 SEM image of Tungsten powder.

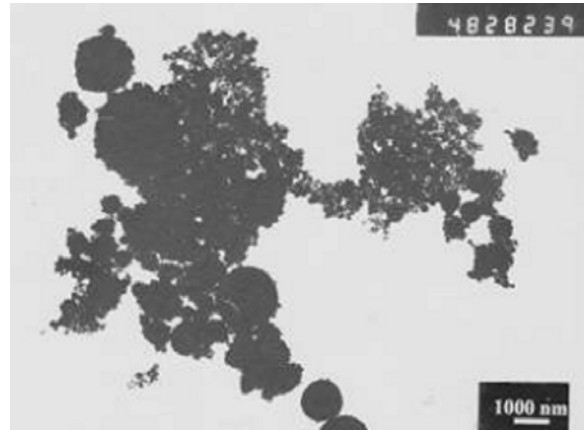


Fig.2 TEM image of Tungsten powder.

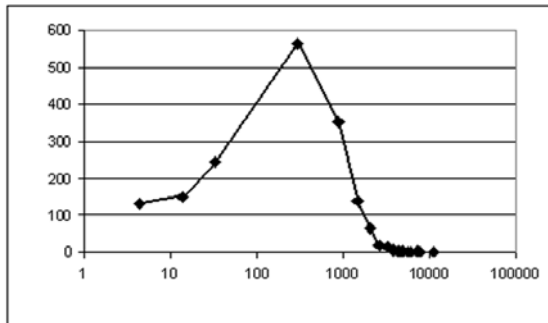


Fig.3 Particle size distribution.

X-axis: particle size in nm;

Y-axis: number of particles.

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