

Qusongite (WC): A new mineral

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ABSTRACT

An unusual group of mantle minerals including about 70–80 species has been recovered from podiform chromitites of the Luobusa ophiolite, Qusong County, Tibet, China. All of the minerals were hand picked from heavy mineral separates of the chromitite. The minerals include diamond, coesite, moissanite, wüstite, intermetallic compounds, Os-Ir alloys with diamond inclusions, Fe-silicides, and a new mineral, qusongite. Qusongite is associated with chromian chlorite, calcite, (W,Ti)C and (Ti,W)C alloys, and chromite. It occurs as angular grains generally 4–8 μm in diameter, but some are as large as $0.2 \times 0.3 \times 0.25$ mm. The grains are opaque and steel-gray with a metallic luster and grayish-yellow reflection. The empirical formula (based on 2 atoms) is $\text{W}_{1.006}\text{Cr}_{0.02}\text{C}_{0.992}$, and the simplified formula is WC. Qusongite has a hexagonal structure and belongs to space group $P\bar{6}m2$, with $a = 2.902(1)$ Å, $c = 2.831(1)$ Å, $c:a = 0.9775$, $V = 20.05(1)$ Å³, $Z = 1$.

Keywords: Qusongite, new mineral, chromite, ophiolite, Qusong county, Tibet