

Stöfflerite, (Ca,Na)(Si,Al)₄O₈ in the hollandite structure: A new high-pressure polymorph of anorthite from martian meteorite NWA 856

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ABSTRACT

We present the crystal structure, composition, and occurrence of stöfflerite, the naturally occurring Ca-aluminosilicate with hollandite-type structure. Stöfflerite is a high-pressure polymorph of anorthite and an approved mineral. The type material was found in the shergottitic martian meteorite Northwest Africa 856. Type stöfflerite (Sto₆₀Lin₄₀) assumes space group *I4/m* with unit-cell dimensions $a = 9.255(1)$ Å, $c = 2.742(3)$ Å, $V = 235.1(2)$ Å³, and $Z = 2$.

Keywords: High pressure, new mineral, hollandite, shock compression