

“Monsmedite”, a discredited potassium thallium sulphate mineral from Baia Sprie and its identity with voltaite: The state of the art

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With two tables

Abstract: “Monsmedite” was described half a century ago as a new potassium thallium sulphate mineral occurring in Baia Sprie, Romania. It was reported to occur as very dark green, morphologically cubic crystals with idealized formula $Tl_2O_3 \cdot K_2O \cdot 8SO_3 \cdot 15H_2O$. Many of the data published are close to those of usual voltaite, but the chemical composition and the measured density are clearly different. Up to now, all samples labelled “monsmedite” in mineral collections (including a co-type specimen of “monsmedite”) proved to be usual voltaite with only very minor amounts of thallium. On this basis, and because the original “monsmedite” sample has gone lost, the Commission on New Minerals and Minerals Names of IMA decided to discredit “monsmedite” as a new mineral and to recommend that the name should be reserved for a possible find of a specimen that fulfills the description and chemical composition of “monsmedite”.

Key words: Monsmedite, voltaite, discredited minerals.

Introduction

The name “monsmedite” for a mineral appears first in a publication by MANILICI et al. (1965) for a very dark green hydrated potassium thallium sulphate mineral, discovered in 1963 in the Baia Sprie ore deposit (region Baia Mare) Romania; for an English abstract see FLEISCHER (1968). An extensive description of “monsmedite” was given by GÖTZ et al. (1968); an English abstract of the paper was published by FLEISCHER (1969). On the basis of a wet chemical analysis (Table 1) the authors give for the mineral the approximate formula $Tl_2O_3 \cdot K_2O \cdot 8SO_3 \cdot 15H_2O$. That thallium occurs exclusively as Tl(III) was deduced from the determination of the Tl-content (a) by the precipitation from a solution of the mineral with ammoniac and subsequent calcination, and (b) by a reduction of the solution and subsequent precipitation of Tl as TlJ (see Gmelin's Handbuch 1939). Both procedures resulted in practically identical Tl-contents. The macroscopic symmetry of the mineral is cubic, with {100}, {111} and {110} as dominant forms. The density is 3.00 g.cm^{-3} . The mineral was described as dark green, in larger grains almost opaque, $n = 1.6081$, $n_g - n_p = 0.011$. X-ray powder

data, a DTA diagram and IR absorption spectra were also given.

“Monsmedite” was found in geodes together with marcasite, barite, kaolinite and limonite. It was stated that the mineral is deposited in the Mineralogical Museum of the Mining Company Baia Mare and that there existed 10–15 g of the mineral.

Problems with the original description of “monsmedite”

The paper of GÖTZ et al. (1968) definitely fulfills the requirements to propose a new mineral. It is, however, to be noted that the data given for “monsmedite” are highly remarkable in several respects. Most important among them are:

(1) Oxosalts of Tl(III) tend to be colourless (Gmelin's Handbuch 1940). On the contrary, “monsmedite” was described to be very dark green to almost opaque.

(2) The morphology, the optical properties and the kind of occurrence of “monsmedite” are practically those of common voltaite (The System of Mineralogy 1951)