

POTENTIALLY CONTAMINATED SITES AT SOMMA- VESUVIUS COMPLEX

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In 2009, the fluoro-edenite was discovered for the first time in Somma-Vesuvius complex, in ejectas from Le Novelle Quarry, Ercolano town. The fluoroedenite is a calcic amphibole that forms the extreme end of the series edenite-fluoro-edenite. It has different morphologies such as prismatic, acicular and fibrous and was discovered in 2000 in the town of Biancavilla, located at the slopes of Etna volcano. The discovery was linked to the observation of a significant increase of mortality from pleural mesothelioma, a disease known to be related to the inhalation of asbestos fibers. It was felt that the cause of that phenomenon could be a natural factor which turned out to be just the fluoro-edenite. Subsequent investigations demonstrated the pathogenicity of fluoro-edenite in fibrous habit. The Ministerial Decree n. 101/2003 requires the mapping realization of the areas affected by the presence of asbestos. At present the possible presence of fluoro-edenite in fibrous habit at Somma-Vesuvius complex and its possible spread has not yet investigated. Since 1995, with the creation of the National Park of Vesuvius, it's prohibited sampling for any use in that area. So it is difficult to carry out investigations on fluoro-edenite. In the Federico II University of Naples there is, however, an important collection of samples from Vesuvius: the Vesuvius Collection of the Real Museo Mineralogico. The collection boasts more than 3500 samples (minerals, lava) and about 400 ejectas, on which new investigations can be made. Recent mineralogical studies on ejectas found different types of amphiboles: tschermakite, Mg-horneblenda, pargasite, fluoropargasite and potassium-rich fluoro-magnesiohastingsites. These minerals have acicular habit, and sometimes the fluoropargasite crystals show fibrous habit. Further investigations should be conducted to understand what is the actual spread of fibrous amphiboles in rocks from Somma-Vesuvius volcanic complex and to understand what is their real danger for the population.

Keywords: fibrous amphiboles, fluoro-edenite, Somma-Vesuvius complex