

Chemical and Oxygen Isotope Analysis of Roman Glasses from Northern Greece

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Abstract : Glass artefacts originated from Northern Greece, dated between 1st and 6th AC, were analyzed for their oxygen isotopic and chemical compositions in order to identify their raw materials provenance. The chemical composition of these glasses is rather heterogeneous although they are all obtained with natron as flux, having both K₂O and MgO contents lower than 1.5 wt%. The majority of these samples have a homogeneous oxygen isotopic composition ($\delta^{18}\text{O} = 16\text{‰}$), which is equal to or very close to the mean value of "Roman" glass (from about 15‰ to 16.0‰). The rest of the samples present heavily enriched $\delta^{18}\text{O}$ values that indicate that their raw materials differ from those normally used in Roman and Medieval glass production, and this matches with the possibility of the different origins of these materials. So, all these fragments are soda-lime-silica natron-glass produced from natron, possibly coming from more than one source.

Keywords : ancient glass, provenance of raw materials of ancient glass, roman glass, oxygen isotope analysis in glass

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