

Gas chromatographic analysis of organic molecules in fluid inclusions within sulphide ore minerals

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This paper outlines a method to analyze fluid inclusions in ore minerals for organic molecules by the direct crushing of host phases on-line to a gas chromatograph. This technique has rarely been performed on sulphide ore minerals and the sampling therefore considered a range of geological and ore depositional environments. Results show organic phases, most notably low molecular weight hydrocarbon gases, evident in varying proportions. High molecular weight hydrocarbons were also present but at lower levels. A negative correlation is in-

ferred with the increase of formation temperature and the presence of CH₄. Therefore, organic phases are present in ore minerals and at the time of ore precipitation, although at this stage the effects of organic molecules interacting with inorganic species and minerals, directly or indirectly, is poorly constrained. A more integrated and detailed study is required to constrain these reactions and to clarify the effect of organic molecules in ore mineralisation systems.