

Opaque phase petrology and geochemical modeling as a guide to abiotic organic synthesis in the Mid-Atlantic Ridge 15°N area

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One of the most intriguing aspects of peridotite-hosted hydrothermal systems is the strongly reduced nature of the vent fluids, due to the production of hydrogen by hydrolysis on ferrous iron in the ultramafic host rock. The levels of dissolved hydrogen in these systems are so high that reduced dissolved carbon species are more stable than dissolved inorganic carbon. While it is uncertain to what extent organic synthesis takes place in hydrothermal systems, it has potentially important ramifications for