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Arsenic release and speciation during the oxidative dissolution of arsenopyrite by O_2 in the absence and presence of EDTA

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Highlights

The oxidative dissolution of arsenopyrite could be largely accelerated by EDTA

The formation of Fe oxyhydroxide minerals inhibits arsenopyrite dissolution

Arsenite can be oxidized to arsenate by aqueous Fe species

ABSTRACT

The oxidative decomposition of arsenopyrite is an important source of As in surface environment. This study investigated the oxidative dissolution of arsenopyrite by O_2 and aqueous arsenic transformation at different pHs, dissolved oxygen (DO) contents, and temperatures in the absence and presence of EDTA. The oxidative dissolution was greatly inhibited at neutral and alkaline pH in the absence of EDTA.