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Removal of hydrogen sulfide in carbon dioxide for radiocarbon AMS analysis

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A method of hydrogen sulfide removal in water (for DIC radiocarbon analysis) or carbon dioxide gas was investigated. By using a silver nitrate solution in diluted nitric acid in a gas wash device, or a trap filled with silver nitrate impregnated silica gel, the hydrogen sulfide was easily removed from the carbon dioxide. The cleaned CO₂ is pure enough to get reduced by hydrogen on the iron catalyst for graphite AMS measurement. The blank of this clean-up method is negligible. It will not change the isotopic composition of the CO₂. This method is applied to some hydrogen sulfide containing samples successfully.

Student Submission

No

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