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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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