

Technetium-99

Solids

An aliquot of the solid sample is digested in a mixture of mineral acids.

Technetium is separated from the sample solution by extraction chromatography. The purified fraction is then processed for analysis by inductively coupled plasma mass spectrometry. The mass spectrometer is calibrated externally using traceable technetium-99 and is run in peak jumping mode. Rhenium is used to monitor chemical recovery.

For the analysis of technetium-99 by ICP-MS there is an assumption made that the isotopes ruthenium-99/101 occur in the expected natural ratio.

Liquids

Technetium is separated from the sample solution by extraction chromatography.

The purified fraction is then processed for analysis by inductively coupled plasma mass spectrometry. The mass spectrometer is calibrated externally using traceable technetium-99 and is run in peak jumping mode with a blank between each sample. Rhenium is used to monitor chemical recovery.

For the analysis of technetium-99 by ICP-MS there is an assumption made that the isotopes ruthenium99/101 occur in the expected natural ratio.