THE EFFECT OF SR-SPEC™ RESIN COLUMN AGE ON GRAVIMETRIC AND INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY (ICP-MS) STRONTIUM RECOVERY ANALYSES.

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Radioactive Strontium (Sr-90) is a nuclear fission decay product and can be found in nuclear waste or be released during nuclear accidents. Determination of Sr-90 is important because of its impact on both the environment and human health. Current urine Sr-90 purification methods are, in most cases, based on the use of Sr-Spec™ resin columns [1]. Most of these analytical methods use stable Sr as a tracer with subsequent Sr gravimetric [2] or Sr ICP-MS [3] analysis. For typical 5 mL urine samples, the analyses require on the order of 12 mg of stable Sr as a tracer for gravimetric recovery determinations versus 100 µg for ICP-MS recovery. This 120 fold difference in tracer amount can produce significantly different Sr cartridge recovery properties, especially with aging cartridges (three or more years old). Therefore, the objective of this work is to study the effect of Sr cartridge age on Sr tracer recovery using gravimetric versus ICP-MS recovery methods.

References:

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