Extraction Hints

Verify sample application pH. Analytes that are not in their proper form (i.e., neutral or charged), will not effectively bind to the sorbent and may result in low or erratic recoveries. The pH of deionized water cannot be correctly determined using pH paper. Use of a calibrated pH meter is necessary.

Always pre-rinse the cartridge with the strongest solution the cartridge will see to ensure the cleanest extraction of your eluate.

Do not allow the sorbent to completely dry out between conditioning steps or before sample application. To ensure properly solvated cartridges, apply each solvent immediately after the previous solvent. Improperly conditioned cartridges may lead to erratic recoveries.

Prior to elution, fully dried cartridges will ensure optimal analyte recovery. To confirm cartridge dryness, touch the sides of the cartridge at the sorbent level at full vacuum. Cartridges should feel about room temperature but not cool. If the cartridge feels cool, water is probably present and still evaporating. Continue drying the cartridge unless otherwise specified in the application note.

Elution rates and soak times specified in the applications are critical for acceptable and consistent recoveries. Hint: When in doubt, slower is always better. 1 mL to 2 mL per minutes is a good general guideline for the sample addition and analyte extraction steps. This recommendation is required for suitable ion exchange extractions.

Always use fresh ammonium hydroxide (NH_4OH) for elutions. NH_4OH rapidly loses its effectiveness when exposed to air. Weak NH_4OH solutions may lead to erratic recoveries.

NH_4OH is more soluble in IPA than CH_2Cl_2. To ensure complete mixing of eluate solvents, add NH_4OH to IPA, then add CH_2Cl_2.

Addition of 1% HCl in MeOH assists in reducing volatility of certain analytes especially sympathomimetic amines.

Certain compounds are slightly volatile. Closely monitor eluate concentration to prevent loss of analyte. Hint: Higher water bath temperatures and lower nitrogen flow rates usually provide optimal results. However, do not exceed 40 °C. Optimal evaporation temp ranges from 35-40 °C. Optimal Nitrogen flow rates are from 5-15 psi.

Solvent quantities for methods are suggested and might be further reduced to meet particular laboratory sample size needs.