**INTRODUCTION**

- Many surfactants in cleaning products do not have good chromophores for detection by an ultraviolet (UV) detector during HPLC analyses.
- Other detectors such as an evaporative light scattering detector (ELSD) are required to monitor these separations.
- A charged aerosol detector (CAD) was introduced and purported to be more sensitive and precise than the ELSD.
- Other detectors such as an evaporative light scattering detector (ELSD) are required to monitor these separations.

**EXPERIMENTAL**

- Work is in a follow-up to a previous study.

**RESULTS**

- **Signal-to-Noise (S/N) Ratio for Ammonium Quats**
  - **CAD** = approximately 450
  - **ELSD** = approximately 150
  - Ammonium Quats at 1 mg/mL

**SYSTEMS UTILIZED**

- **TSPL HPLC with CAD**
  - Component: Model Number
  - Pump: Waters 616
  - UV Detector: Spectra System 45300E
  - CAD Detector: Polymer Labs PL-ELS 1000

- **Waters HPLC with ELSD**
  - Component: Model Number
  - Pump: Waters 646
  - UV Detector: Waters 486
  - ELSD Detector: Polymer Labs PL-ELS 1000

**COMPONENTS DETECTED**

- **Chromatographic Conditions:** 10 µL injections, 100 pA (CAD only); Gradient with acetonitrile and water with 0.1% formic acid as the eluents.

**SOURCES OF MATERIALS**

- Newer ELSD instruments are commercially available that may afford better performance than the PL-ELS 1000 that was evaluated in this study.
- Quantitation of analytes needs to be further evaluated on the CAD (linearity and precision).
- CAD response factors vary with gradients, but standards eliminate problem for quantitation.
- Both detectors have non-linearity.

**SUMMARY**

- CAD appears to be a better investment than ELSD.
- CAD appears to be a better investment than ELSD.
- Both detectors have non-linearity.
- CAD response factors vary with gradients, but standards eliminate problem for quantitation.
- Quantitation of analytes needs to be further evaluated on the CAD (linearity and precision).
- Newer ELSD instruments are commercially available that may afford better performance than the PL-ELS 1000 that was evaluated in this study.
- CAD affords better sensitivity for test mixtures studied especially at low levels.