Determining wavelength accuracy below 230nm for HPLC instruments - How To

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How To Determine Wavelength Accuracy Below 230 nm for HPLC Instruments

Holmium oxide is a globally recognized primary wavelength calibration standard, endorsed by NIST and other international standards organizations. It provides 14 certified absorbance bands spanning from 241 nm to 641 nm, making it ideal for calibrating detectors in that range.

For wavelengths below 230 nm, caffeine serves as a reliable secondary standard, offering absorbance bands at 205 nm and 273 nm. While not a primary standard, caffeine is widely accepted for both wavelength and absorbance verification in analytical laboratories.

The Chemical Solutions brand HSQ Qualification Kit™ is engineered to combine the strengths of both standards, enabling **NIST-traceable wavelength calibration down to 205 nm**:

1. Calibrate using holmium oxide at certified wavelengths ≥241 nm, as outlined in the kit instructions.
2. Measure caffeine absorbance at 273 nm and 205 nm.
3. The 273 nm band overlaps with the NIST-traceable range, establishing traceability for the caffeine solution.
4. If the detector meets accuracy criteria at 273 nm, the 205 nm band is considered traceable by extension, allowing confident qualification at this lower wavelength.

By using holmium oxide and caffeine in tandem, the HSQ Kit™ provides a robust, traceable method to qualify detector wavelength accuracy from **205 nm to 641 nm**.

🔗 **Click HERE** to download a graphic note on caffeine wavelength.
🔗 **Click HERE** for HSQ Kit ordering information and product images.

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