**SRM® 2082 Pathlength Absorbance Standards for Microliter Volume Spectrophotometers**

The determination of the concentrations of DNA, RNA and proteins based on absorbance is one of the most frequently used measurements in biological laboratories. A new generation of spectrophotometers use short pathlengths and microliter volumes to conserve precious samples. SRM® 2082 was designed to provide a rapid and convenient method to verify the pathlength in the UV-range using materials that have similar absorbance characteristics to nucleic acids and proteins. The selection criteria for the materials are that the spectral properties should be similar to nucleic acids and proteins and the solutions had to be stable. Uracil and tryptophan met these criteria. Uracil is one of the bases found in RNA and has an absorbance spectrum (peak at 260 nm) that is similar to RNA and DNA. The amino acid tryptophan is one of the twenty amino acids naturally occurring proteins and is the amino acid mainly responsible for the characteristic absorbance of proteins (peak at 280 nm). A set of calibrated short pathlength cuvettes were used to determine the absorbances of the components. The effect of temperature and spectral bandwidth on the absorbance values was also measured. The stability was shown by repeated measurements over 2 years.

 