

Technical Data Sheet

1.08164.0001

UV/VIS Standard 4 – Potassium chloride solution for checking the stray light of spectrophotometers, traceable to NIST

Application:

In quantitative spectrometry, stray light (light of the wrong wavelength that, in spite of a narrow slit width, still manages to pass through the sample and reach the detector) gives rise to errors that increase exponentially with increasing absorbance. As these errors are specific to both instrument and wavelength, it is important to know them for each instrument and to check them at regular intervals.

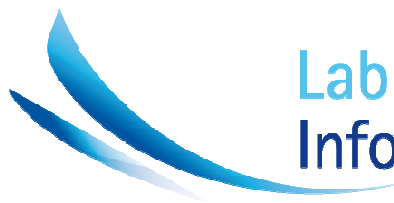
According to the various pharmacopeias, salt solutions with high pass filter properties can be used to check stray light. In order to prevent errors, the standard is guaranteed free from all absorbing containments.

Standards:

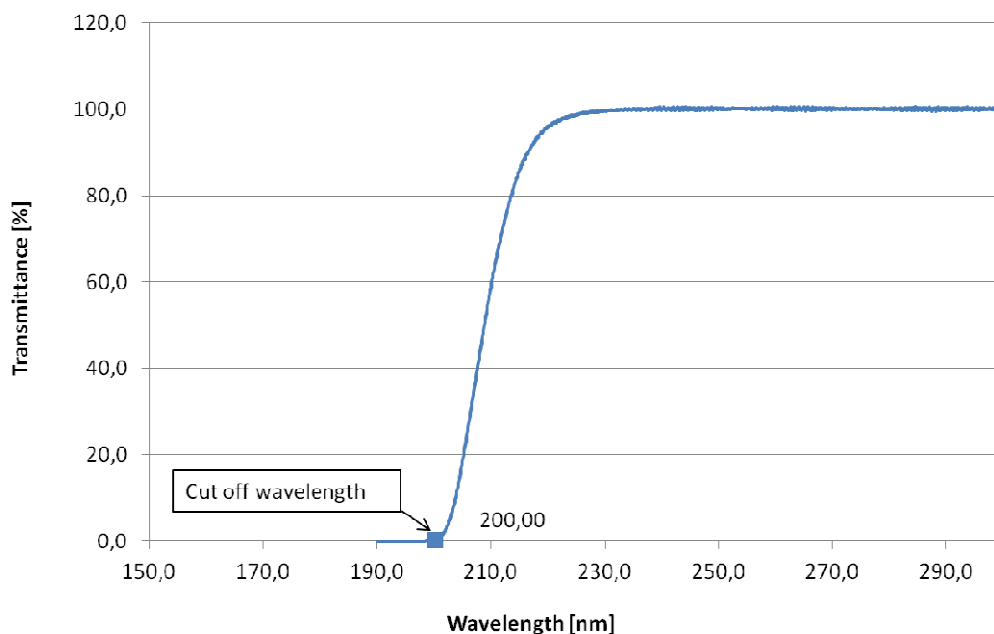
Ph. Eur. (chapter 2.2.25): “Stray light may be detected at a given wavelength with suitable filters or solutions: for example, the absorbance of a 12 g/L solution of potassium chloride R in a 1 cm cell increases steeply between 220 nm and 200 nm and is greater than 2.0 at 198 nm when compared with water as compensation liquid. Suitable certified reference materials may also be used.”

ASTM (E 387): “Manufacturers typically specify stray light at one or more wavelengths. Where sharp cutoff filters are used, the specified wavelength should be near, but a little toward the lower transmittance side, of the cutoff wavelength of the chosen filter. Other wavelengths can be specified by the spectroscopist, according to the need of particular analyses, using sharp cutoff filters that are now available from various manufacturers and distributors.”

Cutoff Wavelength
200 nm



Instrument check: **Spectrum of a potassium chloride solution for checking the stray light**



**Interpretation of
results:**

At wavelength 200 nm, the standard theoretically has 0% transmittance. Thus, the value indicated by the instrument corresponds to the stray light at the parameters set. Should this value exceed the prescribed tolerance, the analysis should be repeated and instrument service notified if necessary.