Technical Data Sheet   1.08163.0001

UV/VIS Standard 3 – Sodium iodide 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."

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."

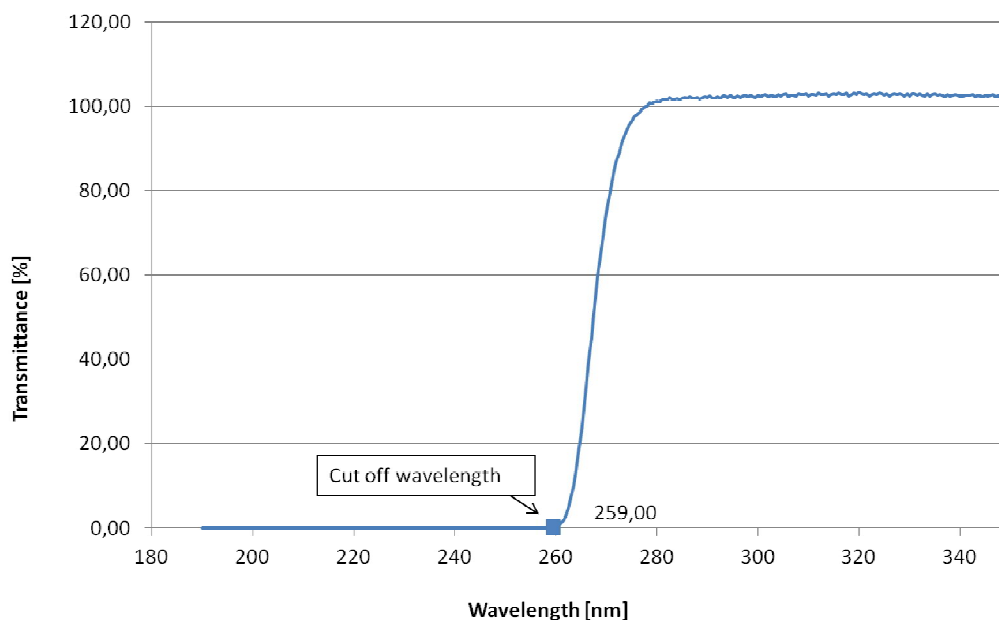| Cutoff Wavelength |
| --- |
| 259 nm |

ASTM (E 925): "A portion of the unwanted stray radiant power detected by the photodetector can be measured using the following sharp cut off solution filters in 1-cm cells:

Sodium iodide 10,0g/L in H_2O is measured at 220 nm. "
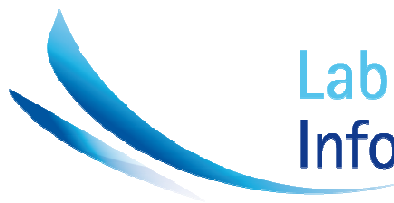
Instrument check:

Spectrum of a sodium iodide solution for checking the stray light

Interpretation of results:

At wavelength 220 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.