UV/Vis spectroscopy

Examples of some applications at Analyscentrum

- Determination of formaldehyde in absorption solutions from 1 m^3 chamber (SOP-KEMI-042, chromotropic acid method)
- Determination of formaldehyde in water from emission measurements according to JAS, flask etc (acetylacetone method)
- Determination of melamine and urea in resins and paper (81 AM 0001)
- Determination of absorption maxima of compounds for optimizing UV/Vis detection in HPLC

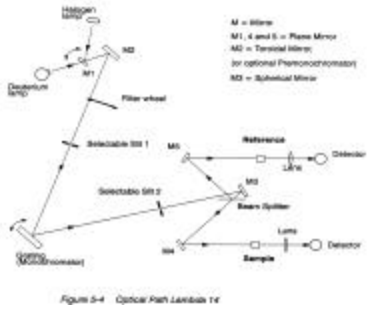
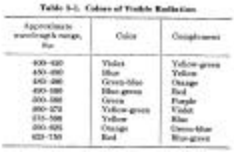


Figure 5-4 Optical Path Lambda 14

$T = I/I_0$

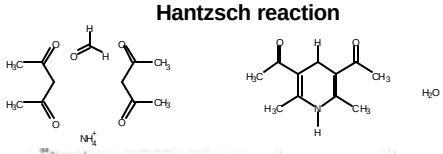
$A = \log 1/T =$

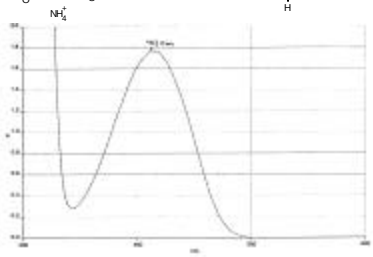


The colour of the light

The colour of the solution

Hantzsch reaction





Instrumentation at Analyscentrum
Lambda 14

Type	Scanning double-beam spectrometer	
Beam cross-section	0.5 nm slit 1 nm slit 2 nm slit 4 nm slit	ca. 0.25 x 7 mm (width x height) ca. 0.5 x 7.5 mm ca. 1 x 7.5 mm ca. 2 x 7.5 mm
Optical path length in sample compartment	121 mm	
Beam center height	15 mm above cell holder bottom	
Monochromator	Holographic concave grating with 1053 lines/mm in the center	
Radiation sources	Prealigned deuterium and halogen lamps	
Lamp change	automatically at 326 nm	
Wavelength range	190 – 1100 nm	
Wavelength accuracy	± 0.3 nm	
Wavelength reproducibility	± 0.1 nm	
Spectral bandwidth	0.5, 1, 2 and 4 nm	
Scan speeds	0.125 – 48 nm/sec	
Absorbance range	-6 to 6 A	
Accuracy	± 0.003 A	
Stray radiation	< 0.001 %T	
Baseline linearity	± 0.001 A with 1 nm slit	
Baseline noise	< 0.0003 A with 1 nm slit	
Baseline drift	< 0.0003 A per hour	

UV/Vis spectroscopy

Cuvettes at Analyscentrum

0.1, 10, 20, 50 and 100 mm
Small volume (100 µl)
Glass (300 - 1100 nm)
Quarts (190 - 1100 nm)
With ground lid
Flow-through

Different cuvette materials