Agilent Technologies

# Certificate of Analysis

## Caffeine Standards Kit

**Agilent Part Number:** **G4218-85000** **Sample Lot Number:** **HC257168**

**Concentrations:**

**Caffeine in water**

| Nominal value | Effective value determined by UV-spectroscopy using the absorption maximum at 273 nm |
|---|---|
| **250 µg/ml** | **245.8 µg/ml ± 1.5 %** |

**Purity grades:**

Caffeine: extra pure, acc. to Ph. Eur.

| | |
|---|---|
| Concentration (acid. titration): | 98.5 - 101.5 % |
| Heavy metals (as Pb): | < 0.001% |
| Loss on drying (105°C): | < 0.5% |

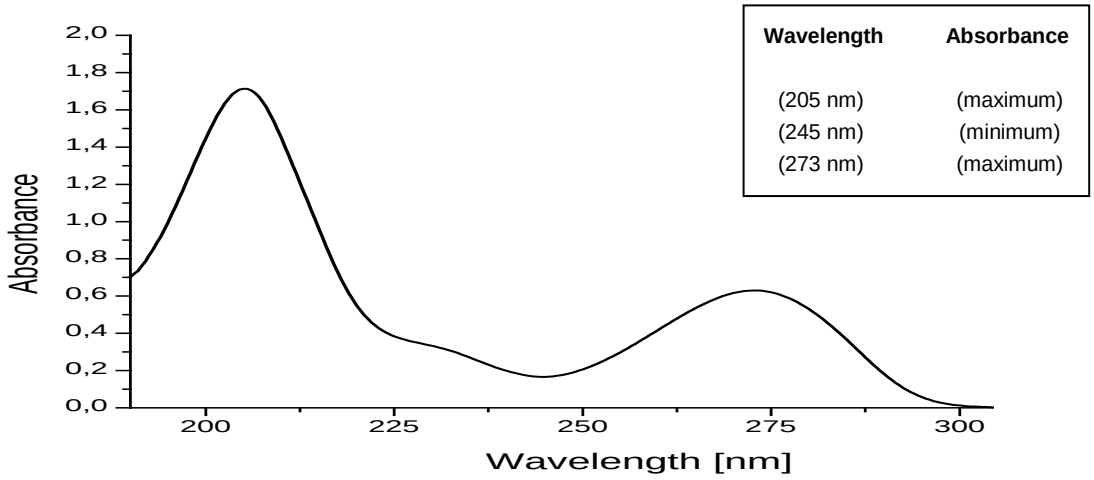
Water: 18.2 MΩ x cm

The standards in this kit have been produced gravimetrically under controlled environmental conditions. Balances used are calibrated regulary against PTB (Federal Physical-Technical Institute, Germany) traceable weight sets. The manufacturing, testing and distribution of these standards meet the requirements of the quality management norm DIN EN ISO 9001:2008.

The standards have been analysed on a high-performance UV/VIS spectrophotometer. The spectrophotometer is regularly validated for accuracy and reproducibility of absorbance and wavelength as well as for linearity, baseline drift, stray light and spectral resolution power using the following testing materials:

| | |
|---|---|
| Absorbance: | NIST SRM 1930 and double aperture method |
| Wavelength: | Intrinsic values of a holmium oxide solution Merck reference material Cat. No. 108166 [1], emission lines of $D_2$ and Hg lamps |
| Stray light: | Merck Cat. No. 108164 (KCl standard, 200 nm), Merck Cat. No. 108163 (NaI standard, 220 nm), Merck Cat. No. 108161 ($NaNO_2$ standard, 370 nm) |
| Spectral resolution power: | Half width value of $D_2$ emission lines for checking the effective optical bandwidth |

**UV/VIS Spectrum** Caffeine in water [concentration: 250 µg/ml]




[1] J. C. Travis et al., J. Phys. Chem. Ref. Data (2005), 34(1), 41-56.

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**Expiration date: 30 SEP 2015**

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