

# Spectrophotometry Standards



## Summary of Features & Benefits:

### Commercial Benefits

- Can be used with all UV-VIS Spectrophotometers
- Permanently sealed cuvettes available
- No Waste
- Ready to Use
- Standards also available in 100ml amber bottles - economy of scale

### Technical Benefits

- National Institute of Standards and Technology (NIST) Traceable
- Produced with salts sourced directly from NIST where applicable
- All standards certified at multiple slit widths
- Certified measurement uncertainties
- Consistency of product - Independent, Traceable, Certified
- Certificates of Analysis and Safety Data Sheets available online

### The product range includes:

- Linearity Standards
- Wavelength Standards
- Stray Light Standards
- Bandwidth Standards

These products are prepared gravimetrically on a weight/weight basis. Both solute and solvent are weighed on a balance calibrated by Reagecon engineers using OIML traceable weights. Reagecon holds ISO 17025 accreditation for calibration of laboratory balances (INAB Ref:265C). The resulting Balance Certificate of Calibration is issued in accordance with the requirements of ISO/IEC 17025. The certified values of each standard are verified using a high performance spectrophotometer calibrated with NIST traceable, ISO 17034 Certified Standards.



## Linearity Standards @ 235, 257, 313 & 350nm

Product No.	Description	Concentration	Pack Size
RSPEC1022	Potassium Dichromate Linearity Set With Blank in Sealed Cuvettes	0mg/l, 20mg/l, 40mg/l, 60mg/l, 80mg/l, 100mg/l	6 x Permanently sealed UV Cuvettes
RSPEC0022	Potassium Dichromate Absorbance/ Transmission Standard	20mg/l	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC0023	Potassium Dichromate Absorbance/ Transmission Standard	40mg/l	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC0024	Potassium Dichromate Absorbance/ Transmission Standard	60mg/l	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC0025	Potassium Dichromate Absorbance/ Transmission Standard	80mg/l	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC0026	Potassium Dichromate Absorbance/ Transmission Standard	100mg/l	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC0051	Spectrophotometry Blank 0.001M Perchloric Acid	0mg/l	1 x Permanently Sealed UV Cuvettes
RSPEC00511	Blank - 0.001M Perchloric Acid	0mg/l	100ml Amber Bottle
RSPEC00221	Potassium Dichromate Absorbance/ Transmission Standard	20mg/l	100ml Amber Bottle
RSPEC00231	Potassium Dichromate Absorbance/ Transmission Standard	40mg/l	100ml Amber Bottle
RSPEC00241	Potassium Dichromate Absorbance/ Transmission Standard	60mg/l	100ml Amber Bottle
RSPEC00251	Potassium Dichromate Absorbance/ Transmission Standard	80mg/l	100ml Amber Bottle
RSPEC00261	Potassium Dichromate Absorbance/ Transmission Standard	100mg/l	100ml Amber Bottle
RSPEC0018	Spectrophotometry Potassium Dichromate Absorbance/Transmission Standard - 10mg/l	10mg/l	2 x Permanently sealed UV Cuvettes (including blank)
RSPEC0019	Spectrophotometry Potassium Dichromate Absorbance/ Transmission Standard - 15mg/l	15mg/l	2 x Permanently sealed UV Cuvettes (including blank)
RSPEC0020	Spectrophotometry Potassium Dichromate Absorbance/ Transmission Standard - 50mg/l	50mg/l	2 x Permanently sealed UV Cuvettes (including blank)
RSPEC-EP0060	Spectrophotometry Potassium Dichromate Absorbance/ Transmission Standard 60mg/l (Ph.Eur)	60mg/l	2 x Permanently sealed UV Cuvettes (including blank)
RSPEC-EP00601	Spectrophotometry Potassium Dichromate Absorbance/ Transmission Standard 60mg/l (Ph.Eur)	60mg/l	100ml Amber Bottle
RSPEC-EP0061	Spectrophotometry Potassium Dichromate Absorbance/Transmission Standard 600mg/l (Ph.Eur)	600mg/l	2 x Permanently sealed UV Cuvettes (including blank)

Product No.	Description	Concentration	Pack Size
RSPEC-EPO0611	Spectrophotometry Potassium Dichromate Absorbance/Transmission Standard 600mg/l (Ph.Eur)	600mg/l	100ml Amber Bottle
RSPEC-EPO0751	Spectrophotometry Absorbance/Transmission Standard Blank - 0.005M Sulfuric Acid (Ph.Eur)		100ml Amber Bottle

## Linearity Standards @ 213 & 261nm

Product No.	Description	Concentration	Pack Size
RSPEC1027	Nicotinic Acid Linearity Set With Blank Linearity Set With Blank in Sealed Cuvettes	0mg/l, 6mg/l, 12mg/l, 18mg/l, 24mg/l	5 x Permanently sealed UV Cuvettes (including blank)
RSPEC0027	Nicotinic Acid Absorbance/Transmission Standard	6mg/l	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC0028	Nicotinic Acid Absorbance/Transmission Standard	12mg/l	2x Permanently Sealed UV Cuvettes (including blank)
RSPEC0029	Nicotinic Acid Absorbance/Transmission Standard	18mg/l	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC0030	Nicotinic Acid Absorbance/Transmission Standard	24mg/l	2 x Permanently Sealed UV Cuvette (including blank)
RSPEC0052	Spectrophotometry Blank 0.1M Hydrochloric Acid	0mg/l	1 x Permanently Sealed UV Cuvette
RSPEC00521	Blank -- 0.1M Hydrochloric Acid	0mg/l	100ml Amber Bottle
RSPEC00271	Nicotinic Acid Absorbance/Transmission Standard	6mg/l	100ml Amber Bottle
RSPEC00281	Nicotinic Acid Absorbance/Transmission Standard	12mg/l	100ml Amber Bottle
RSPEC00291	Nicotinic Acid Absorbance/Transmission Standard	18mg/l	100ml Amber Bottle
RSPEC00301	Nicotinic Acid Absorbance/Transmission Standard	24mg/l	100ml Amber Bottle

**Reagecon**  
Certificate of Analysis

**PRODUCT:** Hexameta Chrome Solution UV and Visible Wavelength Standard 240nm at 600nm  
**PRODUCT NO.:** RSPEC00117  
**LOT NO.:** RSPEC111D31  
**DATE OF TEST:** 05<sup>th</sup> April 2013  
**EXPIRY DATE:** 28<sup>th</sup> April 2015

Wavelength (nm)	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	2.00	
213	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
261	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**TEST METHOD:**  
The result reported above was determined by analysis of a sample of this lot since at time of manufacture. The wavelength values of the standard was determined using a high performance calibrated, UV Spectrometer according to TRU/NAVI. The test method provides traceability to High purity ISO Guide 34 Certified Reference Materials used to National Institute of Standards and Technology (NIST).

This certificate relates solely to the lot number given above. The uncertainty of measurement has been calculated due to expanded ±0.502nm at 95% confidence level, i.e. coverage factor k=2.

Page 1 of 1

**TRACEABILITY IN THE PRODUCTION OF THIS STANDARD:**  
This product was prepared gravimetrically on a weight/weight basis. Both solute and solvent were weighed on a balance calibrated by Reagecon engineers using OIML traceable weights. Reagecon holds ISO 17025 accreditation for the calibration of non-automatic weighing machines (NAW). The resulting Balance Certificate of Calibration was issued in accordance with the requirements of ISO/IEC 17025. The balance was calibrated under monitored environmental conditions and atmospheric pressure. Tests were performed for capacity, readability, repeatability, accuracy and linearity.

**BALANCE ID No.:** RDW06  
**CALIBRATION DATE OF BALANCE:** 28<sup>th</sup> September 2012  
**CALIBRATION AUTHORITY OF BALANCE:** Reagecon Diagnostics Ltd, ISO17025 Accreditation No. 263C

**WEIGHTS No.:** RFS12  
**CALIBRATION DATE OF WEIGHTS:** 19<sup>th</sup> May 2012  
**CALIBRATION AUTHORITY OF WEIGHTS:** Complete Calibrations, ISO17025 Accreditation No. 282C

**WEIGHTS No.:** RFS15  
**CALIBRATION DATE OF WEIGHTS:** 21<sup>st</sup> October 2011  
**CALIBRATION AUTHORITY OF WEIGHTS:** European Instruments (UK) AS No. 08391

**INSTRUCTIONS FOR USE:**  
• Run against an AS Blank  
• Shake well before use

**Date:** 05<sup>th</sup> April 2013

This certificate must not be reproduced except in full.

Page 2 of 2

## Wavelength Standards (Certified at 0.1nm, 0.2nm, 0.5nm, 1.0nm & 2.0nm slit widths)

Product No.	Description	Nominal Peak Wavelengths (0.2nm Slit Width)	Pack Size
RSPEC0001	Didymium Solution UV and Visible Wavelength Standard 298nm to 865nm	298nm, 328.8nm, 353.8nm, 443.8nm, 468.5nm, 481.3nm, 511.5nm, 521.6nm, 574.8nm, 731.4nm, 739.6nm, 794nm, 801.1nm, 865nm	1 x Permanently Sealed UV Cuvette
RSPEC0008	Samarium Solution UV and Visible Wavelength Standard 235nm to 480nm	235nm, 278.8nm, 290.1nm, 305.2nm, 317.4nm, 331.6nm, 344.4nm, 362.2nm, 374.1nm, 390.4nm, 401.1nm, 415.3nm, 463.4nm, 478.6nm	1 x Permanently Sealed UV Cuvette
RSPEC0015	Holmium Oxide Solution UV and Visible Wavelength Standard 240nm to 640nm	240.8nm, 249.6nm, 278nm, 286.8nm, 333nm, 345.4nm, 361.1nm, 385.2nm, 416nm, 451.8nm, 536.3nm, 640.2nm	1 x Permanently Sealed UV Cuvette
RSPEC00011	Didymium Solution UV and Visible Wavelength Standard 298nm to 865nm	298nm, 328.8nm, 353.8nm, 443.8nm, 468.5nm, 481.3nm, 511.5nm, 521.6nm, 574.8nm, 731.4nm, 739.6nm, 794nm, 801.1nm, 865nm	100ml Amber Bottle
RSPEC00081	Samarium Solution UV and Visible Wavelength Standard 235nm to 480nm	235nm, 278.8nm, 290.1nm, 305.2nm, 317.4nm, 331.6nm, 344.4nm, 362.2nm, 374.1nm, 390.4nm, 401.1nm, 415.3nm, 463.4nm, 478.6nm	100ml Amber Bottle
RSPEC00151	Holmium Oxide Solution UV and Visible Wavelength Standard 240nm to 640nm	240.8nm, 249.6nm, 278nm, 286.8nm, 333nm, 345.4nm, 361.1nm, 385.2nm, 416nm, 451.8nm, 467.6nm, 485nm, 536.3nm, 640.2nm	100ml Amber Bottle
RSPEC-EP0064	Holmium Oxide Solution UV and Visible Wavelength Standard 240nm to 640nm (Ph. Eur)	241.15nm, 287.15nm, 361.5nm, 486nm, 536.3nm	1 x Permanently Sealed UV Cuvette

Product No.	Description	Nominal Peak Wavelengths (0.2nm Slit Width)	Pack Size
RSPEC-EPO0641	Holmium Oxide Solution UV and Visible Wavelength Standard 240nm to 640nm (Ph. Eur)	241.15nm, 287.15nm, 361.5nm, 486nm, 536.3nm	100ml Amber Bottle

## Stray Light Standards

Product No.	Description	Cut Off	Packed In
RSPEC0036	Stray Light Inorganic Cut-off filter - Sodium Nitrite	390nm	2 x Permanently sealed UV Cuvettes (including blank)
RSPEC0037	Stray Light Inorganic Cut-off filter - Potassium Iodide	260nm	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC0038	Stray Light Inorganic Cut-off filter - Sodium Iodide	260nm	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC0039	Stray Light Inorganic Cut-off filter - Lithium Carbonate	227nm	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC0040	Stray Light Inorganic Cut-off filter - Sodium Chloride	205nm	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC0041	Stray Light Inorganic Cut-off filter - Potassium Chloride	200nm	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC00361	Stray Light Inorganic Cut-off filter - Sodium Nitrite	390nm	100ml Amber Bottle
RSPEC00371	Stray Light Inorganic Cut-off filter - Potassium Iodide	260nm	100ml Amber Bottle
RSPEC00381	Stray Light Inorganic Cut-off filter - Sodium Iodide	260nm	100ml Amber Bottle
RSPEC00391	Stray Light Inorganic Cut-off filter - Lithium Carbonate	227nm	100ml Amber Bottle
RSPEC00401	Stray Light Inorganic Cut-off filter - Sodium Chloride	205nm	100ml Amber Bottle
RSPEC00411	Stray Light Inorganic Cut-off filter - Potassium chloride	200nm	100ml Amber Bottle
RSPEC00541	Spectrophotometry Stray Light Blank Aqueous		100ml Amber Bottle

Product No.	Description	Cut Off	Packed In
RSPEC-EPO062	Spectrophotometry Stray Light Inorganic Cut-off filter - Potassium Chloride with Blank (Ph. Eur.)	198nm	2 x Permanently Sealed UV Cuvettes (including blank)
RSPEC-EPO0621	Spectrophotometry Stray Light Inorganic Cut-off filter - Potassium Chloride with Blank (Ph. Eur.)	198nm	100ml Amber Bottle
RSPEC-EPO0741	Spectrophotometry Stray Light Blank Aqueous (Ph.Eur)		100ml Amber Bottle

## Bandwidth Standard

Product No.	Description	Certified Value	Packed In
RSPEC1031	Bandwidth Standard - Toluene in Hexane	Ratio of 268.7nm peak to 266.8nm trough	2 x Permanently sealed UV Cuvettes (including blank)
RSPEC00311	Bandwidth Standard - Toluene in Hexane	Ratio of 268.7nm peak to 266.8nm trough	100ml Amber Bottle
RSPEC00531	Bandwidth Standard - Blank	Ratio of 268.7nm peak to 266.8nm trough	100ml Amber Bottle
RSPEC-EPO0631	Bandwidth Standard - Toluene in Hexane (Ph. Eur)	Ratio of 268.7nm peak to 266.8nm trough	100ml Amber Bottle
RSPEC-EPO0731	Bandwidth Standard - Blank (Ph.Eur)	Ratio of 268.7nm peak to 266.8nm trough	100ml Amber Bottle
RSPEC-EPO063	Bandwidth Standard - Toluene in Hexane with Blank (Ph. Eur.)	Ratio of 268.7nm peak to 266.8nm trough	2 x Permanently sealed UV Cuvettes (including blank)

## Resolution Standards

Product No.	Description	Information	Pack Size
RSPEC-EPR001	Resolution Standard - Toluene in Methanol with Blank (Ph. Eur.)	For use in second-order derivative spectroscopy as specified by the Ph. Eur.	2 x Permanently sealed UV Cuvettes (including blank)
RSPEC-EPR002	Resolution Standard - Toluene in Methanol	For use in second-order derivative spectroscopy as specified by the Ph. Eur.	100ml Amber Bottle
RSPEC-EPR003	Resolution Standard - Methanol blank (Ph. Eur.)	For use in second-order derivative spectroscopy as specified by the Ph. Eur.	100ml Amber Bottle