



Starna scientific  
'Setting the Standard'

Quality Assurance in the Analytical Laboratory

## Spectrophotometer UV and Visible Wavelength Qualification

### Samarium Oxide Solution Reference

#### Purpose

Samarium perchlorate is a particularly useful reference material for checking the wavelength scale over the commonly used region from 200 nm to 500 nm.

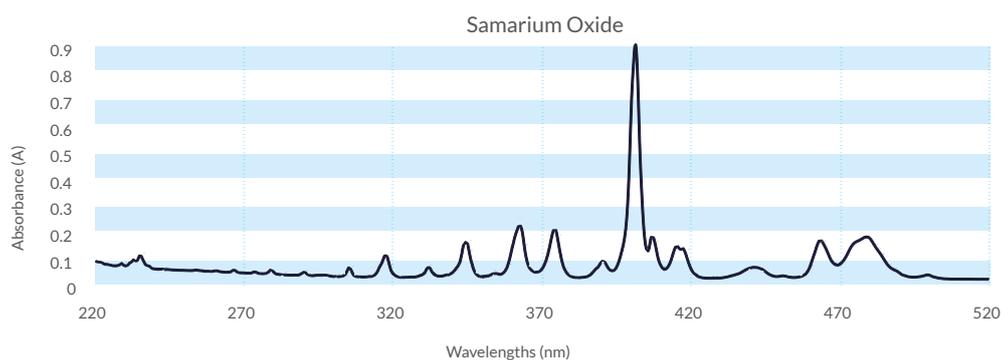
#### Description and Discussion

Rare earth oxide in sulfuric acid, permanently sealed by heat. Samarium (III) oxide in dilute perchloric acid, permanently sealed by heat fusion into a 10 mm far UV quartz cuvette.

Samarium perchlorate is a particularly suitable reference material for checking the wavelength scale of a spectrophotometer over the commonly used range of 200 to 500 nm, as it has peaks throughout this region. Many of the peaks are very narrow, providing very accurate location of the peak wavelengths.

Approximate peak wavelength values (in nm) are:  
235, 279, 290, 305, 318, 332, 344, 362, 374, 391, 401, 415, 464, 479

**Note: The above values are for guidance only. Because the absorption bands are asymmetric, measured values will be spectral bandwidth dependent. The Calibration Certificate accompanying each Starna wavelength reference gives actual values measured at bandwidths of 0.10, 0.25, 0.50, 1.00, 1.50, 2.00, 3.00, 4.00 and 5.00 nm, and only these certified values should be used for instrument qualification. On request, Starna can provide certified values at other wavelengths and bandwidth values.**



# Spectrophotometer UV and Visible Wavelength Qualification

## Samarium Oxide Solution Reference

### Certification and Documentation

A Certificate of Calibration and Traceability and full instructions for use are provided with each Reference Material. The certificate is supplied in electronic format, on a USB drive in the same box as the references, allowing hard copy to be produced on demand and giving easy interface to the user's own IT systems. Certification measurements are made on a reference spectrophotometer that has been qualified using Standard Reference Materials certified by the National Institute of Standards and Technology (NIST) in the USA, or against primary physical references such as elemental emission lines.

### Accreditation

Starna Scientific is accredited to both ISO 17034 as a Reference Material producer, and ISO/IEC 17025 as a Calibration Laboratory for optical reference measurements. Starna Scientific's manufacturing facility is accredited to the ISO 9001 Quality Management System with BSI. For details see [www.starna.com/accreditations](http://www.starna.com/accreditations).

### Warranty

STARNA offers a Lifetime Guarantee on all Starna Certified Reference Materials, unless otherwise stated, such that any reference material that moves outside its published uncertainty budget will be replaced free of charge. This guarantee is subject to the reference materials being re-certified at least every two years and that the references have not been physically, thermally or optically abused. The STARNA UKAS accredited calibration laboratory aims to re-certify and despatch references within five working days from receipt.

### How to Order

	CATALOGUE NUMBER
Samarium Oxide liquid cell	RM-SL



**Starna** scientific  
'Setting the Standard'

[www.starna.com](http://www.starna.com)  
[sales@starna.com](mailto:sales@starna.com)  
+ 44 (0) 20 8501 5550